



Brussels, 5.2.2020
SWD(2020) 10 final

PART 4/5

COMMISSION STAFF WORKING DOCUMENT

Accompanying the document

**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND
THE COUNCIL**

**2019 report on the statistics on the use of animals for scientific purposes in the Member
States of the European Union in 2015-2017**

{COM(2020) 16 final}

SECTION C: MEMBER STATE DATA BETWEEN 2015 AND 2017

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V.3. Recalculated presentation of Member State data for 2017

Introduction

Member States submitted statistical data to the Commission grouped by the main categorisation of data attributes provided in the Annex II of Commission Implementing Decision 2012/707/EU (Section C, V.1.-2. of this Staff Working Document). However, the presentation of data at EU level was restructured to allow for an improved understanding of when and how animals are still used in science today: animals (and uses) in relation to research, testing, routine production and education/training separated from animals (and uses) for the creation and maintenance of genetically altered animals.

To allow for a similar presentation and correlation with the EU data for the year 2017, the Member State annual submissions for the year 2017 were recalculated.

The recalculation was made on the basis of the three Parts of this Staff Working Document:

- **Numbers of animals** used for purposes of research, testing, routine production and education (including training) – Part 1 (III.1)
- **Details of all uses** (first and any subsequent reuse) of animals for the purposes of research, testing, routine production and education (including training) - Part 2 (III.2)
- Numbers and uses of animals for the **creation and maintenance of genetically altered animals** in the EU – Part 3 (III.3)

The main recalculation rules are explained below. As a result, some of the numbers may differ between the original Member Submission for the year 2017 compared to the corresponding table found in the recalculated report.

- **Part 1 – Numbers of animals used in research and testing**
 - Excludes records that were indicated as being carried out for the creation of a new genetically altered animal line;
 - Excludes records for the purposes of maintenance of established genetically altered animal lines;
 - Excludes reuses.
- **Part 2 – All animal uses for research and testing**
 - Excludes records that were indicated as being carried out for the creation of a new genetically altered animal line;
 - Excludes records for the purposes of maintenance of established genetically altered animal lines;
 - Includes both the first use and any subsequent reuse;
 - Excludes legislative information (type and origin of legislative requirement) that is not related to regulatory use. For example, entries for the purposes of “Routine

production” have been submitted with legislative information as this requirement is included in the Commission Implementing Decision 2012/707/EU. However, since the adoption of the Decision, it has become clear that this link between routine production and legislative information is an error and the erroneous legislative data have been removed from purpose category “Routine production”. This provides for a more accurate presentation of the type and origin of legislation that results in regulatory testing.

N.B. When products (produced by using of animals such as blood based products) are placed on the market, there may be requirements for testing their purity, efficacy etc. These are reported separately under regulatory use, and therefore linked correctly with the respective legislative information.

- **Part 3 – Animals (numbers and uses) used for the creation and maintenance of genetically altered animal lines**
 - Includes records that were indicated as being carried out for the creation of a new genetically altered animal line;
 - Includes records for the purposes of maintenance of established genetically altered animal lines – other purposes excluded unless carried out for the creation of a new genetically altered animal line;
 - Includes both first and any subsequent reuse.

To reduce the length of the document, only those lines in which data were reported are included in the tables below.

Member State: Austria, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	169345	80.19%
Rats	5309	2.51%
Guinea-Pigs	1127	0.53%
Other Rodents	998	0.47%
Rabbits	10367	4.91%
Cats	61	0.03%
Dogs	149	0.07%
Horses, donkeys and cross-breeds	349	0.17%
Pigs	2040	0.97%
Goats	20	0.01%
Sheep	139	0.07%
Cattle	904	0.43%
Other Mammals	102	0.05%
Domestic fowl	3895	1.84%
Other birds	1810	0.86%
Xenopus	941	0.45%
Other Amphibians	912	0.43%
Zebra fish	8112	3.84%
Other Fish	4596	2.18%
Total	211176	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	195266	92.47%
Animals born in the EU but not at a registered breeder	11909	5.64%
Animals born in rest of Europe	99	0.05%
Animals born in rest of world	3902	1.85%
Total	211176	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	169345	563	169908
Rats	5309		5309
Guinea-Pigs	1127	27	1154
Hamsters (Syrian)		8	8
Mongolian gerbil		41	41
Other Rodents	998		998
Rabbits	10367	21	10388
Cats	61		61
Dogs	149	54	203
Horses, donkeys and cross-breeds	349	172	521
Pigs	2040		2040
Goats	20	2	22
Sheep	139	10	149
Cattle	904	4	908
Other Mammals	102		102
Domestic fowl	3895		3895
Other birds	1810	9	1819
Xenopus	941	31	972
Other Amphibians	912		912
Zebra fish	8112		8112
Other Fish	4596	34	4630
Total	211176	976	212152

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	105109	49.54%
Translational and applied research	77138	36.36%
Regulatory use and Routine production	26569	12.52%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	198	0.09%
Preservation of species	30	0.01%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	3108	1.46%
Total	212152	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	21077	20.05%
Cardiovascular Blood and Lymphatic System	8833	8.4%
Nervous System	12522	11.91%
Respiratory System	316	0.3%
Gastrointestinal System including Liver	1997	1.9%
Musculoskeletal System	4947	4.71%
Immune System	25168	23.94%
Urogenital/Reproductive System	1128	1.07%
Sensory Organs (skin, eyes and ears)	1208	1.15%
Endocrine System/Metabolism	1304	1.24%
Multisystemic	7835	7.45%
Ethology / Animal Behaviour /Animal Biology	5799	5.52%
Other basic research	12975	12.34%
Total	105109	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	14506	18.81%
Human Infectious Disorders	42202	54.71%
Human Cardiovascular Disorders	5109	6.62%
Human Nervous and Mental Disorders	5487	7.11%
Human Respiratory Disorders	285	0.37%
Human Gastrointestinal Disorders including Liver	151	0.2%
Human Musculoskeletal Disorders	260	0.34%
Human Immune Disorders	785	1.02%
Human Urogenital/Reproductive Disorders	201	0.26%
Human Sensory Organ Disorders (skin, eyes and ears)	300	0.39%
Human Endocrine/Metabolism Disorders	1138	1.48%
Other Human Disorders	576	0.75%
Animal Diseases and Disorders	4816	6.24%
Animal Welfare	542	0.7%
Diagnosis of diseases	715	0.93%
Non-regulatory toxicology and ecotoxicology	65	0.08%
Total	77138	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	25823	97.19%
Toxicity and other safety testing including pharmacology	740	2.79%
Routine production	6	0.02%
Total	26569	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	2700	10.46%
Pyrogenicity testing	9125	35.34%
Batch potency testing	13554	52.49%
Other quality controls	444	1.72%
Total	25823	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Repeated dose toxicity	43	5.81%
Neurotoxicity	32	4.32%
Target animal safety	665	89.86%
Total	740	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
29 - 90 days	43	100%
Total	43	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	25864	97.37%
Medical devices legislation	2	0.01%
Plant protection product legislation	665	2.5%
Other legislation	32	0.12%
Total	26563	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	23031	86.7%
Legislation satisfying Non-EU requirements only	3532	13.3%
Total	26563	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	6	100%
Total	6	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	211176	99.54%
Yes	976	0.46%
Total	212152	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	5087	2.4%
Mild [up to and including]	125863	59.33%
Moderate	60095	28.33%
Severe	21107	9.95%
Total	212152	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	135474	63.86%
Genetically altered without a harmful phenotype	56923	26.83%
Genetically altered with a harmful phenotype	19755	9.31%
Total	212152	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	14373		14373
Zebra fish	8185		8185
Total	22558		22558

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	20298	89.98%
Moderate	2040	9.04%
Severe	220	0.98%
Total	22558	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	2545	11.28%
Genetically altered without a harmful phenotype	7059	31.29%
Genetically altered with a harmful phenotype	12954	57.43%
Total	22558	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	4329	19.19%
Cardiovascular Blood and Lymphatic System	1439	6.38%
Nervous System	4069	18.04%
Gastrointestinal System including Liver	232	1.03%
Immune System	115	0.51%
Endocrine System/Metabolism	390	1.73%
Multisystemic	4970	22.03%
Other basic research	7014	31.09%
Total	22558	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	28632		28632
Rats	729		729
Total	29361		29361

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	66	0.22%
Mild [up to and including]	28861	98.3%
Moderate	381	1.3%
Severe	53	0.18%
Total	29361	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	7912	26.95%
Genetically altered without a harmful phenotype	18527	63.1%
Genetically altered with a harmful phenotype	2922	9.95%
Total	29361	100.00%

Member State: Belgium, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	306605	60.46%
Rats	23207	4.58%
Guinea-Pigs	15539	3.06%
Hamsters (Syrian)	1147	0.23%
Mongolian gerbil	174	0.03%
Other Rodents	115	0.02%
Rabbits	57849	11.41%
Cats	53	0.01%
Dogs	334	0.07%
Ferrets	26	0.01%
Horses, donkeys and cross-breeds	135	0.03%
Pigs	4847	0.96%
Goats	77	0.02%
Sheep	628	0.12%
Cattle	1354	0.27%
Rhesus monkey	9	0%
Other Mammals	77	0.02%
Domestic fowl	39661	7.82%
Other birds	6887	1.36%
Reptiles	42	0.01%
Xenopus	866	0.17%
Other Amphibians	71	0.01%
Zebra fish	23912	4.71%
Other Fish	23538	4.64%
Total	507153	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	483302	95.3%
Animals born in the EU but not at a registered breeder	19519	3.85%
Animals born in rest of Europe	903	0.18%
Animals born in rest of world	3420	0.67%
Total	507144	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born at a registered breeder within EU	9	100%
Total	9	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F2 or greater	9	100%
Total	9	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	306605	314	306919
Rats	23207	397	23604
Guinea-Pigs	15539	2	15541
Hamsters (Syrian)	1147		1147
Mongolian gerbil	174		174
Other Rodents	115		115
Rabbits	57849	39	57888
Cats	53	8	61
Dogs	334	1522	1856
Ferrets	26		26
Horses, donkeys and cross-breeds	135	99	234
Pigs	4847	123	4970
Goats	77	1	78
Sheep	628	38	666
Cattle	1354	204	1558
Rhesus monkey	9	35	44
Other Mammals	77	63	140
Domestic fowl	39661	13	39674
Other birds	6887	251	7138
Reptiles	42	139	181
Xenopus	866	52	918
Other Amphibians	71	252	323
Zebra fish	23912		23912
Other Fish	23538	489	24027
Total	507153	4041	511194

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	243476	47.63%
Translational and applied research	116957	22.88%
Regulatory use and Routine production	141853	27.75%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	706	0.14%
Preservation of species	151	0.03%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	8051	1.57%
Total	511194	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	49489	20.33%
Cardiovascular Blood and Lymphatic System	10890	4.47%
Nervous System	37566	15.43%
Respiratory System	3403	1.4%
Gastrointestinal System including Liver	14181	5.82%
Musculoskeletal System	4058	1.67%
Immune System	68939	28.31%
Urogenital/Reproductive System	5450	2.24%
Sensory Organs (skin, eyes and ears)	4674	1.92%
Endocrine System/Metabolism	10658	4.38%
Multisystemic	2599	1.07%
Ethology / Animal Behaviour /Animal Biology	14701	6.04%
Other basic research	16868	6.93%
Total	243476	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	12720	10.88%
Human Infectious Disorders	15691	13.42%
Human Cardiovascular Disorders	1573	1.34%
Human Nervous and Mental Disorders	28677	24.52%
Human Respiratory Disorders	5945	5.08%
Human Gastrointestinal Disorders including Liver	977	0.84%
Human Musculoskeletal Disorders	783	0.67%
Human Immune Disorders	2039	1.74%
Human Urogenital/Reproductive Disorders	503	0.43%
Human Sensory Organ Disorders (skin, eyes and ears)	5441	4.65%
Human Endocrine/Metabolism Disorders	3722	3.18%
Other Human Disorders	40	0.03%
Animal Diseases and Disorders	17918	15.32%
Animal Welfare	3525	3.01%
Diagnosis of diseases	4292	3.67%
Non-regulatory toxicology and ecotoxicology	13111	11.21%
Total	116957	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	68615	48.37%
Other efficacy and tolerance testing	17201	12.13%
Toxicity and other safety testing including pharmacology	4133	2.91%
Routine production	51904	36.59%
Total	141853	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	8016	11.68%
Batch potency testing	57716	84.12%
Other quality controls	2883	4.2%
Total	68615	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	1037	25.09%
Repeated dose toxicity	672	16.26%
Reproductive toxicity	290	7.02%
Developmental toxicity	11	0.27%
Neurotoxicity	20	0.48%
Kinetics	399	9.65%
Ecotoxicity	1418	34.31%
Safety testing in food and feed area	150	3.63%
Target animal safety	136	3.29%
Total	4133	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	50	4.82%
Non lethal methods	987	95.18%
Total	1037	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	505	75.15%
29 - 90 days	42	6.25%
> 90 days	125	18.6%
Total	672	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	1202	84.77%
Chronic toxicity	216	15.23%
Total	1418	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	62092	69.03%
Legislation on medicinal products for veterinary use and their residues	25534	28.39%
Medical devices legislation	779	0.87%
Industrial chemicals legislation	216	0.24%
Plant protection product legislation	52	0.06%
Food legislation including food contact material	74	0.08%
Other legislation	1202	1.34%
Total	89949	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	76304	84.83%
Legislation satisfying national requirements only [within EU]	50	0.06%
Legislation satisfying Non-EU requirements only	13595	15.11%
Total	89949	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	51804	99.81%
Other product types	100	0.19%
Total	51904	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	507153	99.21%
Yes	4041	0.79%
Total	511194	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	25003	4.89%
Mild [up to and including]	275109	53.82%
Moderate	128546	25.15%
Severe	82536	16.15%
Total	511194	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	395188	77.31%
Genetically altered without a harmful phenotype	100218	19.6%
Genetically altered with a harmful phenotype	15788	3.09%
Total	511194	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	24875		24875
Rats	222		222
Zebra fish	3544	979	4523
Total	28641	979	29620

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	1543	5.21%
Mild [up to and including]	20452	69.05%
Moderate	5403	18.24%
Severe	2222	7.5%
Total	29620	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	7096	23.96%
Genetically altered without a harmful phenotype	16407	55.39%
Genetically altered with a harmful phenotype	6117	20.65%
Total	29620	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	8598	29.33%
Cardiovascular Blood and Lymphatic System	2572	8.77%
Nervous System	5408	18.45%
Respiratory System	180	0.61%
Gastrointestinal System including Liver	2594	8.85%
Musculoskeletal System	909	3.1%
Immune System	1166	3.98%
Urogenital/Reproductive System	402	1.37%
Sensory Organs (skin, eyes and ears)	111	0.38%
Endocrine System/Metabolism	4203	14.34%
Multisystemic	3001	10.24%
Other basic research	175	0.6%
Total	29319	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Nervous and Mental Disorders	259	86.05%
Animal Diseases and Disorders	42	13.95%
Total	301	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	2249	11	2260
Total	2249	11	2260

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	1628	72.04%
Moderate	628	27.79%
Severe	4	0.18%
Total	2260	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	5	0.22%
Genetically altered without a harmful phenotype	1701	75.27%
Genetically altered with a harmful phenotype	554	24.51%
Total	2260	100.00%

Member State: Bulgaria, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	989	11.39%
Rats	1892	21.79%
Guinea-Pigs	1841	21.21%
Rabbits	568	6.54%
Cats	30	0.35%
Pigs	20	0.23%
Sheep	340	3.92%
Cattle	15	0.17%
Domestic fowl	680	7.83%
Rana	2306	26.56%
Total	8681	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	8651	99.65%
Animals born in the EU but not at a registered breeder	30	0.35%
Total	8681	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	989		989
Rats	1892		1892
Guinea-Pigs	1841		1841
Rabbits	568		568
Cats	30		30
Pigs	20		20
Sheep	340		340
Cattle	15		15
Domestic fowl	680		680
Rana	2306		2306
Total	8681		8681

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	2246	25.87%
Translational and applied research	19	0.22%
Regulatory use and Routine production	4126	47.53%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	2290	26.38%
Total	8681	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Nervous System	1651	73.51%
Gastrointestinal System including Liver	11	0.49%
Musculoskeletal System	74	3.29%
Immune System	42	1.87%
Urogenital/Reproductive System	45	2%
Endocrine System/Metabolism	56	2.49%
Multisystemic	62	2.76%
Ethology / Animal Behaviour /Animal Biology	235	10.46%
Other basic research	70	3.12%
Total	2246	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Nervous and Mental Disorders	19	100%
Total	19	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	2843	68.9%

Regulatory uses and Routine production	Number of uses	Percentage
Toxicity and other safety testing including pharmacology	238	5.77%
Routine production	1045	25.33%
Total	4126	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	2843	100%
Total	2843	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	38	15.97%
Pharmaco-dynamics (incl safety pharmacology)	150	63.03%
Ecotoxicity	50	21.01%
Total	238	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	38	100%
Total	38	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
No data reported		

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Chronic toxicity	50	100%
Total	50	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	3081	100%
Total	3081	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	3081	100%
Total	3081	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Other product types	1045	100%
Total	1045	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	8681	100%
Total	8681	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Mild [up to and including]	4547	52.38%
Moderate	3869	44.57%
Severe	265	3.05%
Total	8681	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	8681	100%
Total	8681	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
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No data reported

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Member State: Croatia, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	19710	70.13%
Rats	7638	27.18%
Guinea-Pigs	16	0.06%
Rabbits	426	1.52%
Pigs	2	0.01%
Sheep	28	0.1%
Cattle	30	0.11%
Domestic fowl	255	0.91%
Total	28105	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	27966	99.51%
Animals born in the EU but not at a registered breeder	60	0.21%
Animals born in rest of world	79	0.28%
Total	28105	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	19710		19710
Rats	7638	62	7700
Guinea-Pigs	16	5	21
Rabbits	426		426
Horses, donkeys and cross-breeds		25	25
Pigs	2		2
Sheep	28	11	39
Cattle	30		30
Domestic fowl	255		255
Total	28105	103	28208

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	22067	78.23%
Translational and applied research	2531	8.97%
Regulatory use and Routine production	2182	7.74%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	1428	5.06%
Total	28208	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	1345	6.1%
Cardiovascular Blood and Lymphatic System	378	1.71%
Nervous System	1428	6.47%
Respiratory System	5721	25.93%
Gastrointestinal System including Liver	2069	9.38%
Musculoskeletal System	30	0.14%
Immune System	3764	17.06%
Urogenital/Reproductive System	234	1.06%
Sensory Organs (skin, eyes and ears)	688	3.12%
Endocrine System/Metabolism	384	1.74%
Multisystemic	4582	20.76%
Ethology / Animal Behaviour /Animal Biology	122	0.55%
Other basic research	1322	5.99%
Total	22067	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	230	9.09%
Human Infectious Disorders	1394	55.08%
Human Cardiovascular Disorders	510	20.15%
Human Nervous and Mental Disorders	214	8.46%
Human Musculoskeletal Disorders	28	1.11%

Translational and applied research	Number of uses	Percentage
Human Endocrine/Metabolism Disorders	60	2.37%
Animal Diseases and Disorders	30	1.19%
Non-regulatory toxicology and ecotoxicology	65	2.57%
Total	2531	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	1585	72.64%
Toxicity and other safety testing including pharmacology	556	25.48%
Routine production	41	1.88%
Total	2182	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	262	16.53%
Batch potency testing	128	8.08%
Other quality controls	1195	75.39%
Total	1585	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	556	100%
Total	556	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
Non lethal methods	556	100%
Total	556	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
No data reported		

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
No data reported		

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	1758	82.11%
Legislation on medicinal products for veterinary use and their residues	383	17.89%
Total	2141	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	2141	100%

Origin of legislative requirement	Number of uses	Percentage
Total	2141	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	41	100%
Total	41	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	28105	99.63%
Yes	103	0.37%
Total	28208	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	2965	10.51%
Mild [up to and including]	8242	29.22%
Moderate	11403	40.42%
Severe	5598	19.85%
Total	28208	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	25797	91.45%
Genetically altered without a harmful phenotype	2356	8.35%
Genetically altered with a harmful phenotype	55	0.19%
Total	28208	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Zebra fish	230		230
Total	230		230

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	40	17.39%
Moderate	190	82.61%
Total	230	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	230	100%
Total	230	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Non-regulatory toxicology and ecotoxicology	230	100%
Total	230	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	96		96
Total	96		96

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	96	100%
Total	96	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	96	100%
Total	96	100.00%

Member State: Cyprus, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	1209	100%
Total	1209	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	1209	100%
Total	1209	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	1209		1209
Total	1209		1209

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	839	69.4%
Translational and applied research	370	30.6%
Total	1209	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	129	15.38%
Cardiovascular Blood and Lymphatic System	17	2.03%
Nervous System	368	43.86%
Musculoskeletal System	275	32.78%
Sensory Organs (skin, eyes and ears)	50	5.96%
Total	839	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	370	100%
Total	370	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
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No data reported

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
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No data reported

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
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No data reported

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	1209	100%
Total	1209	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Mild [up to and including]	1197	99.01%
Moderate	12	0.99%
Total	1209	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	623	51.53%
Genetically altered without a harmful phenotype	586	48.47%
Total	1209	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
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No data reported

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Member State: Czechia, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	71954	33.92%
Rats	24809	11.69%
Guinea-Pigs	1377	0.65%
Hamsters (Syrian)	15	0.01%
Mongolian gerbil	46	0.02%
Other Rodents	635	0.3%
Rabbits	2031	0.96%
Cats	121	0.06%
Dogs	437	0.21%
Ferrets	1	0%
Other carnivores	1	0%
Horses, donkeys and cross-breeds	90	0.04%
Pigs	1893	0.89%
Goats	91	0.04%
Sheep	524	0.25%
Cattle	1413	0.67%
Domestic fowl	21166	9.98%
Other birds	4234	2%
Reptiles	558	0.26%
Xenopus	50	0.02%
Other Amphibians	531	0.25%
Zebra fish	5414	2.55%
Other Fish	74753	35.24%
Total	212144	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	202387	95.4%
Animals born in the EU but not at a registered breeder	9222	4.35%
Animals born in rest of world	535	0.25%
Total	212144	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	71954	1042	72996
Rats	24809	46	24855
Guinea-Pigs	1377	6	1383
Hamsters (Syrian)	15		15
Mongolian gerbil	46		46
Other Rodents	635		635
Rabbits	2031	102	2133
Cats	121	11	132
Dogs	437	200	637
Ferrets	1		1
Other carnivores	1		1
Horses, donkeys and cross-breeds	90	15	105
Pigs	1893	554	2447
Goats	91	6	97
Sheep	524	394	918
Cattle	1413	1321	2734
Domestic fowl	21166	51	21217
Other birds	4234	26	4260
Reptiles	558		558
Xenopus	50		50
Other Amphibians	531		531
Zebra fish	5414		5414
Other Fish	74753	108	74861
Total	212144	3882	216026

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	74438	34.46%
Translational and applied research	27640	12.79%
Regulatory use and Routine production	54133	25.06%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	47646	22.06%
Preservation of species	6437	2.98%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	5732	2.65%
Total	216026	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	7593	10.2%
Cardiovascular Blood and Lymphatic System	6413	8.62%
Nervous System	8951	12.02%
Respiratory System	503	0.68%
Gastrointestinal System including Liver	1727	2.32%
Musculoskeletal System	484	0.65%
Immune System	11401	15.32%
Urogenital/Reproductive System	6488	8.72%
Sensory Organs (skin, eyes and ears)	525	0.71%
Endocrine System/Metabolism	3777	5.07%
Multisystemic	6311	8.48%
Ethology / Animal Behaviour /Animal Biology	7542	10.13%
Other basic research	12723	17.09%
Total	74438	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	3761	13.61%
Human Infectious Disorders	1309	4.74%
Human Cardiovascular Disorders	1308	4.73%
Human Nervous and Mental Disorders	2009	7.27%
Human Gastrointestinal Disorders including Liver	861	3.12%
Human Musculoskeletal Disorders	114	0.41%
Human Immune Disorders	303	1.1%
Human Urogenital/Reproductive Disorders	496	1.79%
Human Sensory Organ Disorders (skin, eyes and ears)	112	0.41%
Human Endocrine/Metabolism Disorders	2066	7.47%
Other Human Disorders	379	1.37%
Animal Diseases and Disorders	3643	13.18%
Animal Welfare	3897	14.1%
Diagnosis of diseases	7373	26.68%
Non-regulatory toxicology and ecotoxicology	9	0.03%
Total	27640	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	12209	22.55%
Other efficacy and tolerance testing	326	0.6%
Toxicity and other safety testing including pharmacology	25293	46.72%
Routine production	16305	30.12%
Total	54133	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	523	4.28%
Pyrogenicity testing	81	0.66%
Batch potency testing	11397	93.35%
Other quality controls	208	1.7%
Total	12209	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	4646	18.37%
Skin sensitisation	637	2.52%
Eye irritation/corrosion	18	0.07%
Repeated dose toxicity	1440	5.69%
Reproductive toxicity	3136	12.4%
Developmental toxicity	274	1.08%
Kinetics	144	0.57%
Pharmaco-dynamics (incl safety pharmacology)	24	0.09%
Ecotoxicity	14374	56.83%
Safety testing in food and feed area	438	1.73%
Target animal safety	50	0.2%
Other toxicity/safety testing	112	0.44%
Total	25293	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	994	21.39%
Other lethal methods	3652	78.61%
Total	4646	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	482	33.47%
29 - 90 days	552	38.33%
> 90 days	406	28.19%
Total	1440	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	12714	88.45%
Other ecotoxicity	1660	11.55%
Total	14374	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	2682	7.09%
Legislation on medicinal products for veterinary use and their residues	12127	32.06%
Medical devices legislation	719	1.9%
Industrial chemicals legislation	4345	11.49%
Food legislation including food contact material	170	0.45%
Feed legislation including legislation for the safety of target animals, workers and environment	525	1.39%
Other legislation	17260	45.63%
Total	37828	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	28179	74.49%
Legislation satisfying national requirements only [within EU]	9649	25.51%
Total	37828	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	777	4.77%
Monoclonal antibody by mouse ascites method	230	1.41%
Other product types	15298	93.82%
Total	16305	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	212144	98.2%
Yes	3882	1.8%
Total	216026	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	13419	6.21%
Mild [up to and including]	93112	43.1%
Moderate	93344	43.21%
Severe	16151	7.48%
Total	216026	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	199255	92.24%
Genetically altered without a harmful phenotype	13888	6.43%
Genetically altered with a harmful phenotype	2883	1.33%
Total	216026	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	9007	216	9223
Rats	2112		2112
Zebra fish		14351	14351
Total	11119	14567	25686

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	5695	22.17%
Mild [up to and including]	17018	66.25%
Moderate	2973	11.57%
Total	25686	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	25686	100%
Total	25686	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	1325	5.16%
Cardiovascular Blood and Lymphatic System	16566	64.54%
Nervous System	155	0.6%
Immune System	1726	6.72%
Urogenital/Reproductive System	5617	21.88%
Other basic research	280	1.09%
Total	25669	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Animal Welfare	17	100%
Total	17	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Member State: Denmark, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	159566	68.84%
Rats	37955	16.37%
Guinea-Pigs	2932	1.26%
Hamsters (Syrian)	282	0.12%
Other Rodents	3	0%
Rabbits	2439	1.05%
Dogs	69	0.03%
Ferrets	4	0%
Other carnivores	935	0.4%
Horses, donkeys and cross-breeds	55	0.02%
Pigs	5481	2.36%
Goats	1	0%
Sheep	56	0.02%
Cattle	3663	1.58%
Other Mammals	28	0.01%
Domestic fowl	402	0.17%
Other birds	408	0.18%
Reptiles	269	0.12%
Xenopus	75	0.03%
Other Amphibians	47	0.02%
Zebra fish	1587	0.68%
Other Fish	15538	6.7%
Total	231795	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	201515	86.94%
Animals born in the EU but not at a registered breeder	24528	10.58%
Animals born in rest of Europe	537	0.23%
Animals born in rest of world	5215	2.25%
Total	231795	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	159566	856	160422
Rats	37955	543	38498
Guinea-Pigs	2932	15	2947
Hamsters (Syrian)	282		282
Other Rodents	3		3
Rabbits	2439	4	2443
Dogs	69	145	214
Ferrets	4		4
Other carnivores	935	100	1035
Horses, donkeys and cross-breeds	55	64	119
Pigs	5481	320	5801
Goats	1		1
Sheep	56	10	66
Cattle	3663	14	3677
Other Mammals	28		28
Domestic fowl	402	64	466
Other birds	408		408
Reptiles	269	20	289
Rana		4	4
Xenopus	75	210	285
Other Amphibians	47		47
Zebra fish	1587		1587
Other Fish	15538	68	15606
Total	231795	2437	234232

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	79399	33.9%
Translational and applied research	121977	52.08%
Regulatory use and Routine production	19865	8.48%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	2875	1.23%
Preservation of species	5637	2.41%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	4463	1.91%
Forensic enquiries	16	0.01%
Total	234232	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	6469	8.15%
Cardiovascular Blood and Lymphatic System	4268	5.38%
Nervous System	18149	22.86%
Respiratory System	2444	3.08%
Gastrointestinal System including Liver	2478	3.12%
Musculoskeletal System	2462	3.1%
Immune System	22727	28.62%
Urogenital/Reproductive System	2220	2.8%
Sensory Organs (skin, eyes and ears)	77	0.1%
Endocrine System/Metabolism	12359	15.57%
Multisystemic	485	0.61%
Ethology / Animal Behaviour /Animal Biology	2363	2.98%
Other basic research	2898	3.65%
Total	79399	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	18429	15.11%
Human Infectious Disorders	7665	6.28%
Human Cardiovascular Disorders	2016	1.65%
Human Nervous and Mental Disorders	31340	25.69%
Human Respiratory Disorders	176	0.14%
Human Gastrointestinal Disorders including Liver	762	0.62%
Human Musculoskeletal Disorders	378	0.31%
Human Immune Disorders	4959	4.07%
Human Urogenital/Reproductive Disorders	647	0.53%
Human Sensory Organ Disorders (skin, eyes and ears)	336	0.28%
Human Endocrine/Metabolism Disorders	37015	30.35%
Other Human Disorders	9168	7.52%
Animal Diseases and Disorders	5708	4.68%
Animal Welfare	1568	1.29%
Diagnosis of diseases	1023	0.84%
Non-regulatory toxicology and ecotoxicology	787	0.65%
Total	121977	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	8139	40.97%
Other efficacy and tolerance testing	725	3.65%
Toxicity and other safety testing including pharmacology	10257	51.63%
Routine production	744	3.75%
Total	19865	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	2504	30.77%
Batch potency testing	5601	68.82%
Other quality controls	34	0.42%
Total	8139	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	3968	38.69%
Skin irritation/corrosion	28	0.27%
Skin sensitisation	177	1.73%
Repeated dose toxicity	2205	21.5%
Reproductive toxicity	935	9.12%
Kinetics	818	7.98%
Pharmaco-dynamics (incl safety pharmacology)	26	0.25%
Ecotoxicity	2100	20.47%
Total	10257	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	3968	100%
Total	3968	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	1382	62.68%
29 - 90 days	586	26.58%
> 90 days	237	10.75%
Total	2205	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	120	5.71%
Chronic toxicity	1800	85.71%
Bioaccumulation	180	8.57%
Total	2100	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	16100	84.2%
Industrial chemicals legislation	2987	15.62%
Other legislation	34	0.18%
Total	19121	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	19021	99.48%
Legislation satisfying national requirements only [within EU]	100	0.52%
Total	19121	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	288	38.71%
Other product types	456	61.29%
Total	744	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	231795	98.96%
Yes	2437	1.04%
Total	234232	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	22792	9.73%
Mild [up to and including]	123841	52.87%
Moderate	85837	36.65%
Severe	1762	0.75%
Total	234232	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	195240	83.35%
Genetically altered without a harmful phenotype	27228	11.62%
Genetically altered with a harmful phenotype	11764	5.02%
Total	234232	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	3686		3686
Pigs	2		2
Total	3688		3688

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	79	2.14%
Mild [up to and including]	3143	85.22%
Moderate	466	12.64%
Total	3688	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	2803	76%
Genetically altered without a harmful phenotype	679	18.41%
Genetically altered with a harmful phenotype	206	5.59%
Total	3688	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	258	7.33%
Cardiovascular Blood and Lymphatic System	2	0.06%
Nervous System	92	2.61%
Musculoskeletal System	818	23.25%
Endocrine System/Metabolism	273	7.76%
Ethology / Animal Behaviour /Animal Biology	91	2.59%
Other basic research	1985	56.41%
Total	3519	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Nervous and Mental Disorders	169	100%
Total	169	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	29		29
Total	29		29

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	29	100%
Total	29	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered with a harmful phenotype	29	100%
Total	29	100.00%

Member State: Estonia, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	2168	81.38%
Rats	296	11.11%
Pigs	4	0.15%
Cattle	16	0.6%
Other birds	180	6.76%
Total	2664	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	2484	93.24%
Animals born in the EU but not at a registered breeder	180	6.76%
Total	2664	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	2168		2168
Rats	296		296
Pigs	4		4
Cattle	16		16
Other birds	180		180
Total	2664		2664

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	2304	86.49%
Translational and applied research	210	7.88%
Regulatory use and Routine production	112	4.2%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	38	1.43%
Total	2664	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	985	42.75%
Cardiovascular Blood and Lymphatic System	93	4.04%
Nervous System	407	17.66%
Gastrointestinal System including Liver	32	1.39%
Musculoskeletal System	88	3.82%
Immune System	99	4.3%
Sensory Organs (skin, eyes and ears)	32	1.39%
Endocrine System/Metabolism	219	9.51%
Multisystemic	153	6.64%
Ethology / Animal Behaviour /Animal Biology	180	7.81%
Other basic research	16	0.69%
Total	2304	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Respiratory Disorders	210	100%
Total	210	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Toxicity and other safety testing including pharmacology	112	100%
Total	112	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Repeated dose toxicity	38	33.93%
Carcinogenicity	74	66.07%
Total	112	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	38	100%
Total	38	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	112	100%
Total	112	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	112	100%
Total	112	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	2664	100%
Total	2664	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	122	4.58%
Mild [up to and including]	955	35.85%
Moderate	1312	49.25%
Severe	275	10.32%
Total	2664	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	1940	72.82%
Genetically altered without a harmful phenotype	724	27.18%
Total	2664	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	16		16
Rats	72		72
Total	88		88

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	10	11.36%
Mild [up to and including]	36	40.91%
Moderate	42	47.73%
Total	88	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	16	18.18%
Genetically altered without a harmful phenotype	72	81.82%
Total	88	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Nervous System	88	100%
Total	88	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	394		394
Total	394		394

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	394	100%
Total	394	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	394	100%
Total	394	100.00%

Member State: Finland, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	48580	49.9%
Rats	13467	13.83%
Guinea-Pigs	9	0.01%
Hamsters (Syrian)	149	0.15%
Other Rodents	690	0.71%
Rabbits	223	0.23%
Cats	311	0.32%
Dogs	3035	3.12%
Other carnivores	107	0.11%
Horses, donkeys and cross-breeds	30	0.03%
Pigs	632	0.65%
Sheep	1319	1.35%
Cattle	207	0.21%
Other Mammals	1521	1.56%
Domestic fowl	8485	8.72%
Other birds	404	0.41%
Zebra fish	6454	6.63%
Other Fish	11729	12.05%
Total	97352	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	71217	73.15%
Animals born in the EU but not at a registered breeder	23562	24.2%
Animals born in rest of Europe	5	0.01%
Animals born in rest of world	2568	2.64%
Total	97352	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	48580	51	48631
Rats	13467		13467
Guinea-Pigs	9		9
Hamsters (Syrian)	149		149
Other Rodents	690		690
Rabbits	223	4	227
Cats	311		311
Dogs	3035	26	3061
Other carnivores	107		107
Horses, donkeys and cross-breeds	30	47	77
Pigs	632		632
Sheep	1319		1319
Cattle	207	9	216
Other Mammals	1521	12	1533
Domestic fowl	8485		8485
Other birds	404		404
Zebra fish	6454		6454
Other Fish	11729		11729
Total	97352	149	97501

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	54625	56.03%
Translational and applied research	33315	34.17%
Regulatory use and Routine production	7895	8.1%
Preservation of species	60	0.06%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	1606	1.65%
Total	97501	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	6529	11.95%
Cardiovascular Blood and Lymphatic System	5098	9.33%
Nervous System	10383	19.01%
Respiratory System	80	0.15%
Gastrointestinal System including Liver	545	1%
Musculoskeletal System	337	0.62%
Immune System	10325	18.9%
Urogenital/Reproductive System	181	0.33%
Sensory Organs (skin, eyes and ears)	268	0.49%
Endocrine System/Metabolism	900	1.65%
Multisystemic	6005	10.99%
Ethology / Animal Behaviour /Animal Biology	7546	13.81%
Other basic research	6428	11.77%
Total	54625	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	5016	15.06%
Human Infectious Disorders	860	2.58%
Human Cardiovascular Disorders	662	1.99%
Human Nervous and Mental Disorders	19579	58.77%
Human Gastrointestinal Disorders including Liver	117	0.35%
Human Musculoskeletal Disorders	605	1.82%
Human Immune Disorders	71	0.21%
Human Urogenital/Reproductive Disorders	8	0.02%
Human Sensory Organ Disorders (skin, eyes and ears)	470	1.41%
Human Endocrine/Metabolism Disorders	371	1.11%
Other Human Disorders	755	2.27%
Animal Diseases and Disorders	4384	13.16%
Animal Welfare	226	0.68%
Diagnosis of diseases	123	0.37%
Non-regulatory toxicology and ecotoxicology	68	0.2%
Total	33315	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	3395	43%
Other efficacy and tolerance testing	156	1.98%
Toxicity and other safety testing including pharmacology	2868	36.33%
Routine production	1476	18.7%
Total	7895	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch potency testing	3395	100%
Total	3395	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Repeated dose toxicity	134	4.67%
Kinetics	1171	40.83%
Pharmaco-dynamics (incl safety pharmacology)	1556	54.25%
Other toxicity/safety testing	7	0.24%
Total	2868	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	134	100%
Total	134	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	2992	46.61%
Legislation on medicinal products for veterinary use and their residues	3395	52.89%
Feed legislation including legislation for the safety of target animals, workers and environment	32	0.5%
Total	6419	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	6419	100%
Total	6419	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	296	20.05%
Other product types	1180	79.95%
Total	1476	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	97352	99.85%
Yes	149	0.15%
Total	97501	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	8735	8.96%
Mild [up to and including]	46758	47.96%
Moderate	33282	34.14%
Severe	8726	8.95%
Total	97501	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	71470	73.3%
Genetically altered without a harmful phenotype	17743	18.2%
Genetically altered with a harmful phenotype	8288	8.5%
Total	97501	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	4155		4155
Rats	5		5
Zebra fish	699		699
Total	4859		4859

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	347	7.14%
Mild [up to and including]	2805	57.73%
Moderate	1694	34.86%
Severe	13	0.27%
Total	4859	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	1607	33.07%
Genetically altered without a harmful phenotype	2756	56.72%
Genetically altered with a harmful phenotype	496	10.21%
Total	4859	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	262	5.63%
Cardiovascular Blood and Lymphatic System	47	1.01%
Nervous System	1522	32.71%
Immune System	699	15.02%
Endocrine System/Metabolism	487	10.47%
Multisystemic	1582	34%
Other basic research	54	1.16%
Total	4653	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Nervous and Mental Disorders	124	60.19%
Human Sensory Organ Disorders (skin, eyes and ears)	7	3.4%
Human Endocrine/Metabolism Disorders	71	34.47%
Other Human Disorders	4	1.94%
Total	206	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	215		215
Total	215		215

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	207	96.28%
Moderate	8	3.72%
Total	215	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	3	1.4%
Genetically altered without a harmful phenotype	179	83.26%
Genetically altered with a harmful phenotype	33	15.35%
Total	215	100.00%

Member State: France, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	1011925	57.57%
Rats	173535	9.87%
Guinea-Pigs	44976	2.56%
Hamsters (Syrian)	6529	0.37%
Hamsters (Chinese)	167	0.01%
Mongolian gerbil	429	0.02%
Other Rodents	857	0.05%
Rabbits	124544	7.09%
Cats	315	0.02%
Dogs	2752	0.16%
Ferrets	148	0.01%
Other carnivores	24	0%
Horses, donkeys and cross-breeds	109	0.01%
Pigs	9261	0.53%
Goats	311	0.02%
Sheep	2633	0.15%
Cattle	956	0.05%
Prosimians	86	0%
Marmoset and tamarins	131	0.01%
Cynomolgus monkey	2001	0.11%
Rhesus monkey	26	0%
Vervets (Chlorocebus spp.)	33	0%
Baboons	11	0%
Squirrel monkey	7	0%
Other species of Old World Monkeys (Cercopithecoidea)	9	0%
Other Mammals	18125	1.03%
Domestic fowl	42582	2.42%
Other birds	26997	1.54%
Reptiles	14	0%
Rana	118	0.01%
Xenopus	3570	0.2%
Other Amphibians	742	0.04%
Zebra fish	16199	0.92%
Other Fish	267714	15.23%
Cephalopods	1	0%
Total	1757837	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	1501087	85.51%
Animals born in the EU but not at a registered breeder	152224	8.67%
Animals born in rest of Europe	48610	2.77%
Animals born in rest of world	53612	3.05%
Total	1755533	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born at a registered breeder within EU	236	10.24%
Animals born in rest of Europe	5	0.22%
Animals born in Asia	130	5.64%
Animals born in America	35	1.52%
Animals born in Africa	1729	75.04%
Animals born elsewhere	169	7.34%
Total	2304	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F1	885	38.41%
F2 or greater	1285	55.77%
Self-sustaining colony	134	5.82%
Total	2304	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	1011925	16158	1028083
Rats	173535	6078	179613
Guinea-Pigs	44976	58	45034
Hamsters (Syrian)	6529		6529
Hamsters (Chinese)	167		167
Mongolian gerbil	429		429
Other Rodents	857	100	957
Rabbits	124544	2354	126898
Cats	315	552	867
Dogs	2752	1344	4096
Ferrets	148		148
Other carnivores	24	3	27
Horses, donkeys and cross-breeds	109	196	305
Pigs	9261	1085	10346
Goats	311	527	838
Sheep	2633	2763	5396
Cattle	956	821	1777
Prosimians	86		86
Marmoset and tamarins	131	93	224
Cynomolgus monkey	2001	1278	3279
Rhesus monkey	26	45	71
Vervets (Chlorocebus spp.)	33	5	38
Baboons	11	21	32
Squirrel monkey	7		7
Other species of Old World Monkeys (Cercopithecoidea)	9		9
Other Mammals	18125	400	18525
Domestic fowl	42582	562	43144
Other birds	26997	228	27225
Reptiles	14	3448	3462
Rana	118		118
Xenopus	3570	1327	4897
Other Amphibians	742		742
Zebra fish	16199	600	16799
Other Fish	267714	360	268074
Cephalopods	1		1
Total	1757837	40406	1798243

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	687105	38.21%
Translational and applied research	477884	26.58%
Regulatory use and Routine production	574030	31.92%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	4918	0.27%
Preservation of species	18786	1.04%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	35512	1.97%
Forensic enquiries	8	0%
Total	1798243	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	92211	13.42%
Cardiovascular Blood and Lymphatic System	32298	4.7%
Nervous System	123850	18.02%
Respiratory System	12314	1.79%
Gastrointestinal System including Liver	27363	3.98%
Musculoskeletal System	17391	2.53%
Immune System	90438	13.16%
Urogenital/Reproductive System	18745	2.73%
Sensory Organs (skin, eyes and ears)	5415	0.79%
Endocrine System/Metabolism	40474	5.89%
Multisystemic	7270	1.06%
Ethology / Animal Behaviour /Animal Biology	161945	23.57%
Other basic research	57391	8.35%
Total	687105	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	120252	25.16%
Human Infectious Disorders	52555	11%
Human Cardiovascular Disorders	14990	3.14%
Human Nervous and Mental Disorders	46285	9.69%
Human Respiratory Disorders	6669	1.4%
Human Gastrointestinal Disorders including Liver	12366	2.59%
Human Musculoskeletal Disorders	13833	2.89%
Human Immune Disorders	19048	3.99%
Human Urogenital/Reproductive Disorders	2240	0.47%
Human Sensory Organ Disorders (skin, eyes and ears)	7750	1.62%
Human Endocrine/Metabolism Disorders	12181	2.55%
Other Human Disorders	9642	2.02%
Animal Diseases and Disorders	37908	7.93%
Animal Welfare	216	0.05%
Diagnosis of diseases	97413	20.38%
Plant diseases	89	0.02%
Non-regulatory toxicology and ecotoxicology	24447	5.12%
Total	477884	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	201610	35.12%
Other efficacy and tolerance testing	83928	14.62%
Toxicity and other safety testing including pharmacology	113238	19.73%
Routine production	175254	30.53%
Total	574030	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	20294	10.07%
Pyrogenicity testing	6191	3.07%
Batch potency testing	138017	68.46%
Other quality controls	37108	18.41%
Total	201610	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	3294	2.91%
Skin irritation/corrosion	1754	1.55%
Skin sensitisation	14019	12.38%
Eye irritation/corrosion	253	0.22%
Repeated dose toxicity	24250	21.42%
Carcinogenicity	2295	2.03%
Genotoxicity	486	0.43%
Reproductive toxicity	14165	12.51%
Developmental toxicity	7483	6.61%
Kinetics	18338	16.19%
Pharmaco-dynamics (incl safety pharmacology)	9821	8.67%
Phototoxicity	521	0.46%
Ecotoxicity	13533	11.95%
Safety testing in food and feed area	1570	1.39%
Target animal safety	171	0.15%
Other toxicity/safety testing	1285	1.13%
Total	113238	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	702	21.31%
Other lethal methods	561	17.03%
Non lethal methods	2031	61.66%
Total	3294	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	12892	53.16%
29 - 90 days	6543	26.98%
> 90 days	4815	19.86%
Total	24250	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	10955	80.95%
Chronic toxicity	1107	8.18%
Bioaccumulation	846	6.25%
Other ecotoxicity	625	4.62%
Total	13533	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	226886	56.9%
Legislation on medicinal products for veterinary use and their residues	55686	13.96%
Medical devices legislation	25090	6.29%
Industrial chemicals legislation	12737	3.19%
Plant protection product legislation	4541	1.14%
Biocides legislation	757	0.19%
Food legislation including food contact material	698	0.18%
Feed legislation including legislation for the safety of target animals, workers and environment	72087	18.08%
Other legislation	294	0.07%
Total	398776	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	392531	98.43%
Legislation satisfying national requirements only [within EU]	1470	0.37%
Legislation satisfying Non-EU requirements only	4775	1.2%
Total	398776	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	74243	42.36%
Monoclonal antibody by mouse ascites method	44198	25.22%
Other product types	56813	32.42%
Total	175254	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	1757837	97.75%
Yes	40406	2.25%
Total	1798243	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	99949	5.56%
Mild [up to and including]	636482	35.39%
Moderate	739008	41.1%
Severe	322804	17.95%
Total	1798243	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	1469131	81.7%
Genetically altered without a harmful phenotype	285514	15.88%
Genetically altered with a harmful phenotype	43598	2.42%
Total	1798243	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	36512	180	36692
Rats	3346		3346
Rabbits	306		306
Zebra fish	5080		5080
Total	45244	180	45424

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	3145	6.92%
Mild [up to and including]	18783	41.35%
Moderate	22237	48.95%
Severe	1259	2.77%
Total	45424	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	16437	36.19%
Genetically altered without a harmful phenotype	23553	51.85%
Genetically altered with a harmful phenotype	5434	11.96%
Total	45424	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	2002	4.56%
Cardiovascular Blood and Lymphatic System	279	0.64%
Nervous System	17558	39.96%
Gastrointestinal System including Liver	713	1.62%
Musculoskeletal System	110	0.25%
Immune System	1755	3.99%
Urogenital/Reproductive System	1161	2.64%
Sensory Organs (skin, eyes and ears)	20	0.05%
Endocrine System/Metabolism	234	0.53%
Multisystemic	13626	31.01%
Ethology / Animal Behaviour /Animal Biology	2511	5.72%
Other basic research	3967	9.03%
Total	43936	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Cancer	91	6.12%
Human Cardiovascular Disorders	213	14.31%
Human Nervous and Mental Disorders	63	4.23%
Human Gastrointestinal Disorders including Liver	7	0.47%
Human Musculoskeletal Disorders	648	43.55%
Human Sensory Organ Disorders (skin, eyes and ears)	10	0.67%
Human Endocrine/Metabolism Disorders	321	21.57%
Other Human Disorders	100	6.72%
Animal Diseases and Disorders	35	2.35%
Total	1488	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	69742		69742
Rats	755		755
Dogs	10		10
Total	70507		70507

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	48518	68.81%
Moderate	19608	27.81%
Severe	2381	3.38%
Total	70507	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	66463	94.26%
Genetically altered with a harmful phenotype	4044	5.74%
Total	70507	100.00%

Member State: Germany, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	1171550	65.33%
Rats	245998	13.72%
Guinea-Pigs	14349	0.8%
Hamsters (Syrian)	1217	0.07%
Hamsters (Chinese)	8	0%
Mongolian gerbil	4154	0.23%
Other Rodents	9950	0.55%
Rabbits	89147	4.97%
Cats	431	0.02%
Dogs	1720	0.1%
Ferrets	172	0.01%
Other carnivores	535	0.03%
Horses, donkeys and cross-breeds	1013	0.06%
Pigs	16069	0.9%
Goats	195	0.01%
Sheep	2832	0.16%
Cattle	5842	0.33%
Prosimians	12	0%
Marmoset and tamarins	197	0.01%
Cynomolgus monkey	2387	0.13%
Rhesus monkey	67	0%
Baboons	14	0%
Squirrel monkey	1	0%
Other Mammals	1259	0.07%
Domestic fowl	24463	1.36%
Other birds	11339	0.63%
Reptiles	351	0.02%
Rana	377	0.02%
Xenopus	3405	0.19%
Other Amphibians	2652	0.15%
Zebra fish	87413	4.87%
Other Fish	94180	5.25%
Total	1793299	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	1663522	92.9%
Animals born in the EU but not at a registered breeder	98960	5.53%
Animals born in rest of Europe	15127	0.84%
Animals born in rest of world	13012	0.73%
Total	1790621	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born at a registered breeder within EU	350	13.07%
Animals born in Asia	1699	63.44%
Animals born in Africa	628	23.45%
Animals born elsewhere	1	0.04%
Total	2678	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F1	338	12.62%
F2 or greater	1786	66.69%
Self-sustaining colony	554	20.69%
Total	2678	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	1171550	17159	1188709
Rats	245998	4481	250479
Guinea-Pigs	14349	502	14851
Hamsters (Syrian)	1217	5	1222
Hamsters (Chinese)	8		8
Mongolian gerbil	4154	101	4255
Other Rodents	9950		9950
Rabbits	89147	3497	92644
Cats	431	287	718
Dogs	1720	1610	3330
Ferrets	172	24	196
Other carnivores	535		535
Horses, donkeys and cross-breeds	1013	196	1209
Pigs	16069	1214	17283
Goats	195	17	212
Sheep	2832	221	3053
Cattle	5842	490	6332
Prosimians	12	75	87
Marmoset and tamarins	197	17	214
Cynomolgus monkey	2387	615	3002
Rhesus monkey	67	50	117
Vervets (Chlorocebus spp.)		15	15
Baboons	14		14
Squirrel monkey	1		1
Other species of Old World Monkeys (Cercopithecoidea)		12	12
Other Mammals	1259	93	1352
Domestic fowl	24463	457	24920
Other birds	11339	661	12000
Reptiles	351	18	369
Rana	377		377
Xenopus	3405	1141	4546
Other Amphibians	2652		2652
Zebra fish	87413		87413
Other Fish	94180	30	94210
Total	1793299	32988	1826287

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	875421	47.93%
Translational and applied research	291152	15.94%
Regulatory use and Routine production	556946	30.5%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	8491	0.46%
Preservation of species	41156	2.25%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	53121	2.91%
Total	1826287	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	85330	9.75%
Cardiovascular Blood and Lymphatic System	84382	9.64%
Nervous System	194683	22.24%
Respiratory System	23256	2.66%
Gastrointestinal System including Liver	30152	3.44%
Musculoskeletal System	16529	1.89%
Immune System	183041	20.91%
Urogenital/Reproductive System	14651	1.67%
Sensory Organs (skin, eyes and ears)	20387	2.33%
Endocrine System/Metabolism	50807	5.8%
Multisystemic	42693	4.88%
Ethology / Animal Behaviour /Animal Biology	46171	5.27%
Other basic research	83339	9.52%
Total	875421	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	124509	42.76%
Human Infectious Disorders	17913	6.15%
Human Cardiovascular Disorders	15246	5.24%
Human Nervous and Mental Disorders	36680	12.6%
Human Respiratory Disorders	13197	4.53%
Human Gastrointestinal Disorders including Liver	13424	4.61%
Human Musculoskeletal Disorders	3926	1.35%
Human Immune Disorders	11314	3.89%
Human Urogenital/Reproductive Disorders	4613	1.58%
Human Sensory Organ Disorders (skin, eyes and ears)	5491	1.89%
Human Endocrine/Metabolism Disorders	8031	2.76%
Other Human Disorders	1223	0.42%
Animal Diseases and Disorders	17368	5.97%
Animal Welfare	6271	2.15%
Diagnosis of diseases	2488	0.85%
Plant diseases	69	0.02%
Non-regulatory toxicology and ecotoxicology	9389	3.22%
Total	291152	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	188089	33.77%
Other efficacy and tolerance testing	32991	5.92%
Toxicity and other safety testing including pharmacology	260473	46.77%
Routine production	75393	13.54%
Total	556946	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	19382	10.3%
Pyrogenicity testing	5591	2.97%
Batch potency testing	161272	85.74%
Other quality controls	1844	0.98%
Total	188089	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	10357	3.98%
Skin irritation/corrosion	884	0.34%
Skin sensitisation	8711	3.34%
Eye irritation/corrosion	171	0.07%
Repeated dose toxicity	19136	7.35%
Carcinogenicity	1961	0.75%
Genotoxicity	3522	1.35%
Reproductive toxicity	21926	8.42%
Developmental toxicity	35887	13.78%
Neurotoxicity	86	0.03%
Kinetics	31782	12.2%
Pharmaco-dynamics (incl safety pharmacology)	79250	30.43%
Ecotoxicity	38843	14.91%
Safety testing in food and feed area	1721	0.66%
Target animal safety	3423	1.31%
Other toxicity/safety testing	2813	1.08%
Total	260473	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	4136	39.93%
Other lethal methods	182	1.76%
Non lethal methods	6039	58.31%
Total	10357	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	13183	68.89%
29 - 90 days	4136	21.61%
> 90 days	1817	9.5%
Total	19136	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	6957	17.91%
Chronic toxicity	16704	43%
Reproductive ecotoxicity	904	2.33%
Endocrine activity	5840	15.03%
Bioaccumulation	1807	4.65%
Other ecotoxicity	6631	17.07%
Total	38843	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	340657	70.74%
Legislation on medicinal products for veterinary use and their residues	23605	4.9%
Medical devices legislation	12591	2.61%
Industrial chemicals legislation	50430	10.47%
Plant protection product legislation	46143	9.58%
Biocides legislation	2284	0.47%
Food legislation including food contact material	14	0%
Feed legislation including legislation for the safety of target animals, workers and environment	3554	0.74%
Other legislation	2275	0.47%
Total	481553	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	470469	97.7%
Legislation satisfying national requirements only [within EU]	2083	0.43%
Legislation satisfying Non-EU requirements only	9001	1.87%
Total	481553	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	73520	97.52%
Monoclonal antibody by mouse ascites method	384	0.51%
Other product types	1489	1.97%
Total	75393	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	1793299	98.19%
Yes	32988	1.81%
Total	1826287	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	166236	9.1%
Mild [up to and including]	1040646	56.98%
Moderate	507633	27.8%
Severe	111772	6.12%
Total	1826287	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	1241283	67.97%
Genetically altered without a harmful phenotype	465516	25.49%
Genetically altered with a harmful phenotype	119488	6.54%
Total	1826287	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	117993	432	118425
Rats	3396		3396
Rabbits	17		17
Pigs	61	3	64
Marmoset and tamarins	10		10
Zebra fish	48540	3451	51991
Other Fish	3348		3348
Total	173365	3886	177251

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	11592	6.54%
Mild [up to and including]	143868	81.17%
Moderate	21251	11.99%
Severe	540	0.3%
Total	177251	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	159047	89.73%
Genetically altered with a harmful phenotype	18204	10.27%
Total	177251	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	6057	3.7%
Cardiovascular Blood and Lymphatic System	24671	15.06%
Nervous System	21445	13.09%
Respiratory System	323	0.2%
Gastrointestinal System including Liver	2935	1.79%
Musculoskeletal System	9128	5.57%
Immune System	19540	11.93%
Urogenital/Reproductive System	8775	5.36%
Sensory Organs (skin, eyes and ears)	7414	4.53%
Endocrine System/Metabolism	7078	4.32%
Multisystemic	14782	9.02%
Ethology / Animal Behaviour /Animal Biology	135	0.08%
Other basic research	41521	25.35%
Total	163804	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Cancer	1105	8.22%
Human Infectious Disorders	475	3.53%
Human Cardiovascular Disorders	1677	12.47%
Human Nervous and Mental Disorders	1893	14.08%
Human Respiratory Disorders	174	1.29%
Human Gastrointestinal Disorders including Liver	2474	18.4%
Human Musculoskeletal Disorders	13	0.1%
Human Immune Disorders	345	2.57%
Human Urogenital/Reproductive Disorders	171	1.27%
Human Sensory Organ Disorders (skin, eyes and ears)	1009	7.5%
Human Endocrine/Metabolism Disorders	4107	30.54%
Other Human Disorders	4	0.03%
Total	13447	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	61184	129	61313
Rats	1574		1574
Zebra fish	2272		2272
Other Fish	116		116
Total	65146	129	65275

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	267	0.41%
Mild [up to and including]	42476	65.07%
Moderate	19737	30.24%
Severe	2795	4.28%
Total	65275	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	34238	52.45%
Genetically altered with a harmful phenotype	31037	47.55%
Total	65275	100.00%

Member State: Greece, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	21190	50.08%
Rats	2435	5.76%
Guinea-Pigs	6	0.01%
Rabbits	213	0.5%
Dogs	23	0.05%
Pigs	283	0.67%
Sheep	8	0.02%
Cattle	3	0.01%
Domestic fowl	6	0.01%
Zebra fish	1859	4.39%
Other Fish	16250	38.41%
Cephalopods	33	0.08%
Total	42309	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	41636	98.41%
Animals born in the EU but not at a registered breeder	33	0.08%
Animals born in rest of world	640	1.51%
Total	42309	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	21190	329	21519
Rats	2435	3	2438
Guinea-Pigs	6		6
Rabbits	213		213
Cats		8	8
Dogs	23	18	41
Pigs	283	6	289
Sheep	8		8
Cattle	3		3
Rhesus monkey		1	1
Domestic fowl	6		6
Zebra fish	1859		1859
Other Fish	16250	96	16346
Cephalopods	33		33
Total	42309	461	42770

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	23613	55.21%
Translational and applied research	8058	18.84%
Regulatory use and Routine production	6887	16.1%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	3093	7.23%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	1119	2.62%
Total	42770	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	923	3.91%
Cardiovascular Blood and Lymphatic System	1315	5.57%
Nervous System	1204	5.1%
Gastrointestinal System including Liver	428	1.81%
Musculoskeletal System	520	2.2%
Immune System	2225	9.42%
Urogenital/Reproductive System	242	1.02%
Sensory Organs (skin, eyes and ears)	988	4.18%
Endocrine System/Metabolism	843	3.57%
Multisystemic	99	0.42%
Ethology / Animal Behaviour /Animal Biology	14686	62.19%
Other basic research	140	0.59%
Total	23613	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	2487	30.86%
Human Infectious Disorders	271	3.36%
Human Cardiovascular Disorders	967	12%
Human Nervous and Mental Disorders	1372	17.03%
Human Respiratory Disorders	291	3.61%
Human Gastrointestinal Disorders including Liver	363	4.5%
Human Musculoskeletal Disorders	710	8.81%
Human Immune Disorders	200	2.48%
Human Sensory Organ Disorders (skin, eyes and ears)	381	4.73%
Human Endocrine/Metabolism Disorders	34	0.42%
Other Human Disorders	648	8.04%
Animal Welfare	40	0.5%
Diagnosis of diseases	230	2.85%
Non-regulatory toxicology and ecotoxicology	64	0.79%
Total	8058	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Toxicity and other safety testing including pharmacology	6887	100%
Total	6887	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Pharmaco-dynamics (incl safety pharmacology)	10	0.15%
Safety testing in food and feed area	6877	99.85%
Total	6887	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
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Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	10	0.15%
Food legislation including food contact material	6877	99.85%
Total	6887	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	6887	100%
Total	6887	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	42309	98.92%
Yes	461	1.08%
Total	42770	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	3646	8.52%
Mild [up to and including]	25432	59.46%
Moderate	9198	21.51%
Severe	4494	10.51%
Total	42770	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	31622	73.94%
Genetically altered without a harmful phenotype	9022	21.09%
Genetically altered with a harmful phenotype	2126	4.97%
Total	42770	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	3960		3960
Total	3960		3960

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	3960	100%
Total	3960	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	3960	100%
Total	3960	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Other basic research	3960	100%
Total	3960	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Member State: Hungary, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	65368	49.18%
Rats	33255	25.02%
Guinea-Pigs	5731	4.31%
Rabbits	1343	1.01%
Cats	16	0.01%
Dogs	359	0.27%
Ferrets	4	0%
Pigs	2078	1.56%
Cattle	12	0.01%
Rhesus monkey	2	0%
Domestic fowl	20575	15.48%
Other birds	2084	1.57%
Zebra fish	928	0.7%
Other Fish	1174	0.88%
Total	132929	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	126369	95.07%
Animals born in the EU but not at a registered breeder	5062	3.81%
Animals born in rest of Europe	1187	0.89%
Animals born in rest of world	309	0.23%
Total	132927	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born at a registered breeder within EU	2	100%
Total	2	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F2 or greater	2	100%
Total	2	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	65368	346	65714
Rats	33255	691	33946
Guinea-Pigs	5731	34	5765
Rabbits	1343	88	1431
Cats	16		16
Dogs	359	104	463
Ferrets	4		4
Pigs	2078	327	2405
Cattle	12	21	33
Rhesus monkey	2		2
Domestic fowl	20575	4594	25169
Other birds	2084		2084
Zebra fish	928	748	1676
Other Fish	1174		1174
Total	132929	6953	139882

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	37658	26.92%
Translational and applied research	41847	29.92%
Regulatory use and Routine production	58007	41.47%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	2370	1.69%
Total	139882	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	3346	8.89%
Cardiovascular Blood and Lymphatic System	3342	8.87%
Nervous System	16376	43.49%
Respiratory System	718	1.91%
Gastrointestinal System including Liver	1865	4.95%
Musculoskeletal System	189	0.5%
Immune System	4412	11.72%
Urogenital/Reproductive System	1678	4.46%
Sensory Organs (skin, eyes and ears)	488	1.3%
Endocrine System/Metabolism	1417	3.76%
Multisystemic	1802	4.79%
Ethology / Animal Behaviour /Animal Biology	526	1.4%
Other basic research	1499	3.98%
Total	37658	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	4919	11.75%
Human Infectious Disorders	581	1.39%
Human Cardiovascular Disorders	293	0.7%
Human Nervous and Mental Disorders	20172	48.2%
Human Gastrointestinal Disorders including Liver	211	0.5%
Human Musculoskeletal Disorders	79	0.19%
Human Immune Disorders	89	0.21%
Human Urogenital/Reproductive Disorders	8	0.02%
Human Sensory Organ Disorders (skin, eyes and ears)	40	0.1%
Other Human Disorders	224	0.54%
Animal Diseases and Disorders	9410	22.49%
Animal Welfare	4573	10.93%
Diagnosis of diseases	788	1.88%
Non-regulatory toxicology and ecotoxicology	460	1.1%
Total	41847	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	27156	46.82%
Other efficacy and tolerance testing	329	0.57%
Toxicity and other safety testing including pharmacology	29813	51.4%
Routine production	709	1.22%
Total	58007	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	10102	37.2%
Pyrogenicity testing	29	0.11%
Batch potency testing	16682	61.43%
Other quality controls	343	1.26%
Total	27156	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	17639	59.17%
Skin irritation/corrosion	293	0.98%
Skin sensitisation	4629	15.53%
Eye irritation/corrosion	137	0.46%
Repeated dose toxicity	1125	3.77%
Carcinogenicity	40	0.13%
Genotoxicity	562	1.89%
Reproductive toxicity	833	2.79%
Developmental toxicity	1286	4.31%
Kinetics	1207	4.05%
Pharmaco-dynamics (incl safety pharmacology)	569	1.91%
Ecotoxicity	1028	3.45%
Other toxicity/safety testing	465	1.56%
Total	29813	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	14255	80.82%
Non lethal methods	3384	19.18%
Total	17639	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	438	38.93%
29 - 90 days	75	6.67%
> 90 days	612	54.4%
Total	1125	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	1028	100%
Total	1028	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	24550	42.85%
Legislation on medicinal products for veterinary use and their residues	28770	50.21%
Medical devices legislation	516	0.9%
Industrial chemicals legislation	834	1.46%
Plant protection product legislation	2167	3.78%
Food legislation including food contact material	461	0.8%
Total	57298	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	56022	97.77%
Legislation satisfying Non-EU requirements only	1276	2.23%
Total	57298	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	40	5.64%
Monoclonal antibody by mouse ascites method	157	22.14%
Other product types	512	72.21%
Total	709	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	132929	95.03%
Yes	6953	4.97%
Total	139882	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	12314	8.8%
Mild [up to and including]	69792	49.89%
Moderate	39760	28.42%
Severe	18016	12.88%
Total	139882	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	131890	94.29%
Genetically altered without a harmful phenotype	7386	5.28%
Genetically altered with a harmful phenotype	606	0.43%
Total	139882	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	162		162
Rabbits	152		152
Zebra fish		567	567
Total	314	567	881

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	96	10.9%
Mild [up to and including]	591	67.08%
Moderate	194	22.02%
Total	881	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	339	38.48%
Genetically altered without a harmful phenotype	512	58.12%
Genetically altered with a harmful phenotype	30	3.41%
Total	881	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Cardiovascular Blood and Lymphatic System	64	7.26%
Nervous System	122	13.85%
Multisystemic	567	64.36%
Other basic research	128	14.53%
Total	881	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Member State: Ireland, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	205849	85.57%
Rats	16858	7.01%
Guinea-Pigs	518	0.22%
Rabbits	400	0.17%
Dogs	46	0.02%
Ferrets	442	0.18%
Horses, donkeys and cross-breeds	59	0.02%
Pigs	1519	0.63%
Goats	11	0%
Sheep	1189	0.49%
Cattle	2805	1.17%
Domestic fowl	40	0.02%
Other birds	823	0.34%
Xenopus	18	0.01%
Zebra fish	236	0.1%
Other Fish	9755	4.05%
Total	240568	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	226935	94.33%
Animals born in the EU but not at a registered breeder	13065	5.43%
Animals born in rest of Europe	121	0.05%
Animals born in rest of world	447	0.19%
Total	240568	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	205849		205849
Rats	16858		16858
Guinea-Pigs	518		518
Rabbits	400		400
Dogs	46	43	89
Ferrets	442		442
Horses, donkeys and cross-breeds	59	1	60
Pigs	1519	28	1547
Goats	11		11
Sheep	1189	132	1321
Cattle	2805	439	3244
Domestic fowl	40		40
Other birds	823		823
Xenopus	18		18
Zebra fish	236		236
Other Fish	9755	32	9787
Total	240568	675	241243

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	8492	3.52%
Translational and applied research	29295	12.14%
Regulatory use and Routine production	194816	80.76%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	8366	3.47%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	274	0.11%
Total	241243	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	391	4.6%
Cardiovascular Blood and Lymphatic System	5	0.06%
Nervous System	2068	24.35%
Respiratory System	658	7.75%
Gastrointestinal System including Liver	1111	13.08%
Musculoskeletal System	192	2.26%
Immune System	991	11.67%
Urogenital/Reproductive System	238	2.8%
Sensory Organs (skin, eyes and ears)	54	0.64%
Endocrine System/Metabolism	139	1.64%
Multisystemic	6	0.07%
Ethology / Animal Behaviour /Animal Biology	2635	31.03%
Other basic research	4	0.05%
Total	8492	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	754	2.57%
Human Infectious Disorders	780	2.66%
Human Cardiovascular Disorders	1129	3.85%
Human Nervous and Mental Disorders	9381	32.02%
Human Respiratory Disorders	277	0.95%
Human Gastrointestinal Disorders including Liver	1114	3.8%
Human Musculoskeletal Disorders	734	2.51%
Human Immune Disorders	7789	26.59%
Human Urogenital/Reproductive Disorders	50	0.17%
Human Sensory Organ Disorders (skin, eyes and ears)	2057	7.02%
Human Endocrine/Metabolism Disorders	444	1.52%
Animal Diseases and Disorders	2115	7.22%
Animal Welfare	2553	8.71%
Diagnosis of diseases	118	0.4%
Total	29295	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	194247	99.71%
Toxicity and other safety testing including pharmacology	540	0.28%
Routine production	29	0.01%
Total	194816	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	1920	0.99%
Pyrogenicity testing	312	0.16%
Batch potency testing	192015	98.85%
Total	194247	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Ecotoxicity	500	92.59%
Target animal safety	40	7.41%
Total	540	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
No data reported		

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
No data reported		

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	500	100%
Total	500	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	185698	95.33%
Legislation on medicinal products for veterinary use and their residues	8589	4.41%
Other legislation	500	0.26%
Total	194787	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	194755	99.98%
Legislation satisfying national requirements only [within EU]	32	0.02%
Total	194787	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	29	100%
Total	29	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	240568	99.72%
Yes	675	0.28%
Total	241243	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	2283	0.95%
Mild [up to and including]	113244	46.94%
Moderate	55158	22.86%
Severe	70558	29.25%
Total	241243	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	234363	97.15%
Genetically altered without a harmful phenotype	5121	2.12%
Genetically altered with a harmful phenotype	1759	0.73%
Total	241243	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	586		586
Total	586		586

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	548	93.52%
Severe	38	6.48%
Total	586	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	586	100%
Total	586	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Respiratory System	66	100%
Total	66	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Cardiovascular Disorders	66	12.69%
Human Musculoskeletal Disorders	13	2.5%
Human Immune Disorders	441	84.81%
Total	520	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	473		473
Total	473		473

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	469	99.15%
Moderate	4	0.85%
Total	473	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	443	93.66%
Genetically altered without a harmful phenotype	30	6.34%
Total	473	100.00%

Member State: Italy, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	347361	61.54%
Rats	117203	20.76%
Guinea-Pigs	14246	2.52%
Hamsters (Syrian)	277	0.05%
Other Rodents	647	0.11%
Rabbits	18146	3.21%
Dogs	373	0.07%
Ferrets	42	0.01%
Pigs	1559	0.28%
Sheep	120	0.02%
Cattle	270	0.05%
Cynomolgus monkey	545	0.1%
Rhesus monkey	3	0%
Other Mammals	24	0%
Domestic fowl	33358	5.91%
Other birds	420	0.07%
Xenopus	371	0.07%
Zebra fish	19415	3.44%
Other Fish	10079	1.79%
Cephalopods	10	0%
Total	564469	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	497349	88.19%
Animals born in the EU but not at a registered breeder	64411	11.42%
Animals born in rest of Europe	840	0.15%
Animals born in rest of world	1321	0.23%
Total	563921	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born at a registered breeder within EU	1	0.18%
Animals born in Asia	57	10.4%
Animals born in Africa	490	89.42%
Total	548	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F1	137	25%
F2 or greater	411	75%
Total	548	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	347361	483	347844
Rats	117203	338	117541
Guinea-Pigs	14246	111	14357
Hamsters (Syrian)	277		277
Other Rodents	647		647
Rabbits	18146	1179	19325
Dogs	373	266	639
Ferrets	42		42
Horses, donkeys and cross-breeds		17	17
Pigs	1559	62	1621
Goats		23	23
Sheep	120	72	192
Cattle	270	9	279
Marmoset and tamarins		1	1
Cynomolgus monkey	545	24	569
Rhesus monkey	3	1	4
Other Mammals	24	6	30
Domestic fowl	33358	1357	34715
Other birds	420		420
Xenopus	371	30	401
Zebra fish	19415	93	19508
Other Fish	10079	636	10715
Cephalopods	10		10
Total	564469	4708	569177

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	187054	32.86%
Translational and applied research	152986	26.88%
Regulatory use and Routine production	225842	39.68%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	1697	0.3%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	1598	0.28%
Total	569177	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	57091	30.52%
Cardiovascular Blood and Lymphatic System	8534	4.56%
Nervous System	69030	36.9%
Respiratory System	1384	0.74%
Gastrointestinal System including Liver	5792	3.1%
Musculoskeletal System	6922	3.7%
Immune System	13588	7.26%
Urogenital/Reproductive System	2830	1.51%
Sensory Organs (skin, eyes and ears)	3892	2.08%
Endocrine System/Metabolism	4459	2.38%
Multisystemic	3513	1.88%
Ethology / Animal Behaviour /Animal Biology	5028	2.69%
Other basic research	4991	2.67%
Total	187054	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	46470	30.38%
Human Infectious Disorders	21902	14.32%
Human Cardiovascular Disorders	1844	1.21%
Human Nervous and Mental Disorders	18352	12%
Human Respiratory Disorders	16658	10.89%
Human Gastrointestinal Disorders including Liver	2644	1.73%
Human Musculoskeletal Disorders	5955	3.89%
Human Immune Disorders	3734	2.44%
Human Urogenital/Reproductive Disorders	2989	1.95%
Human Sensory Organ Disorders (skin, eyes and ears)	2447	1.6%
Human Endocrine/Metabolism Disorders	3064	2%
Other Human Disorders	4953	3.24%
Animal Diseases and Disorders	7228	4.72%
Animal Welfare	918	0.6%
Diagnosis of diseases	13483	8.81%
Non-regulatory toxicology and ecotoxicology	345	0.23%
Total	152986	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	111851	49.53%
Other efficacy and tolerance testing	45856	20.3%
Toxicity and other safety testing including pharmacology	63786	28.24%
Routine production	4349	1.93%
Total	225842	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	21535	19.25%
Pyrogenicity testing	2717	2.43%
Batch potency testing	84520	75.56%
Other quality controls	3079	2.75%
Total	111851	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	10612	16.64%
Skin irritation/corrosion	820	1.29%
Skin sensitisation	11983	18.79%
Eye irritation/corrosion	93	0.15%
Repeated dose toxicity	8757	13.73%
Genotoxicity	291	0.46%
Reproductive toxicity	628	0.98%
Developmental toxicity	5554	8.71%
Neurotoxicity	300	0.47%
Kinetics	5976	9.37%
Pharmaco-dynamics (incl safety pharmacology)	1154	1.81%
Ecotoxicity	4224	6.62%
Safety testing in food and feed area	10807	16.94%
Target animal safety	1212	1.9%
Other toxicity/safety testing	1375	2.16%
Total	63786	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	1211	11.41%
Other lethal methods	755	7.11%
Non lethal methods	8646	81.47%
Total	10612	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	4157	47.47%
29 - 90 days	2782	31.77%
> 90 days	1818	20.76%
Total	8757	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	3930	93.04%
Other ecotoxicity	294	6.96%
Total	4224	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	143853	64.95%
Legislation on medicinal products for veterinary use and their residues	35700	16.12%
Medical devices legislation	16869	7.62%
Industrial chemicals legislation	8715	3.93%
Plant protection product legislation	595	0.27%
Biocides legislation	624	0.28%
Food legislation including food contact material	11492	5.19%
Feed legislation including legislation for the safety of target animals, workers and environment	1074	0.48%
Other legislation	2571	1.16%
Total	221493	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	204920	92.52%
Legislation satisfying national requirements only [within EU]	3268	1.48%
Legislation satisfying Non-EU requirements only	13305	6.01%
Total	221493	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	2861	65.79%
Other product types	1488	34.21%
Total	4349	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	564469	99.17%
Yes	4708	0.83%
Total	569177	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	29618	5.2%
Mild [up to and including]	275143	48.34%
Moderate	175666	30.86%
Severe	88750	15.59%
Total	569177	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	448298	78.76%
Genetically altered without a harmful phenotype	103778	18.23%
Genetically altered with a harmful phenotype	17101	3%
Total	569177	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	7799		7799
Rats	510		510
Pigs	36		36
Total	8345		8345

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	2257	27.05%
Mild [up to and including]	3751	44.95%
Moderate	1470	17.62%
Severe	867	10.39%
Total	8345	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	399	4.78%
Genetically altered without a harmful phenotype	7598	91.05%
Genetically altered with a harmful phenotype	348	4.17%
Total	8345	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	1422	18.74%
Cardiovascular Blood and Lymphatic System	101	1.33%
Nervous System	5313	70.02%
Musculoskeletal System	11	0.14%
Immune System	79	1.04%
Endocrine System/Metabolism	317	4.18%
Multisystemic	345	4.55%
Total	7588	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Cardiovascular Disorders	8	1.06%
Human Nervous and Mental Disorders	146	19.29%
Human Gastrointestinal Disorders including Liver	62	8.19%
Human Musculoskeletal Disorders	52	6.87%
Human Immune Disorders	141	18.63%
Human Urogenital/Reproductive Disorders	3	0.4%
Human Sensory Organ Disorders (skin, eyes and ears)	10	1.32%
Other Human Disorders	335	44.25%
Total	757	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	2485		2485
Rats	53		53
Total	2538		2538

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	2175	85.7%
Moderate	44	1.73%
Severe	319	12.57%
Total	2538	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	1498	59.02%
Genetically altered with a harmful phenotype	1040	40.98%
Total	2538	100.00%

Member State: Latvia, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	3332	63%
Rats	1795	33.94%
Pigs	22	0.42%
Other Mammals	140	2.65%
Total	5289	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	5127	96.94%
Animals born in the EU but not at a registered breeder	162	3.06%
Total	5289	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	3332		3332
Rats	1795		1795
Pigs	22		22
Other Mammals	140		140
Total	5289		5289

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	1724	32.6%
Translational and applied research	3543	66.99%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	22	0.42%
Total	5289	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	4	0.23%
Nervous System	1580	91.65%
Ethology / Animal Behaviour /Animal Biology	140	8.12%
Total	1724	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	840	23.71%
Human Infectious Disorders	135	3.81%
Human Cardiovascular Disorders	1406	39.68%
Human Nervous and Mental Disorders	605	17.08%
Human Urogenital/Reproductive Disorders	70	1.98%
Human Endocrine/Metabolism Disorders	0	0%
Animal Diseases and Disorders	377	10.64%
Non-regulatory toxicology and ecotoxicology	110	3.1%
Total	3543	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
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No data reported

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
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No data reported

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
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No data reported

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	5289	100%
Total	5289	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	1372	25.94%
Mild [up to and including]	2050	38.76%
Moderate	1701	32.16%
Severe	166	3.14%
Total	5289	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	5229	98.87%
Genetically altered without a harmful phenotype	60	1.13%
Total	5289	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
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No data reported

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Member State: Lithuania, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	1718	62.11%
Rats	391	14.14%
Guinea-Pigs	15	0.54%
Rabbits	13	0.47%
Pigs	68	2.46%
Sheep	15	0.54%
Other birds	26	0.94%
Other Fish	520	18.8%
Total	2766	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	2683	97%
Animals born in the EU but not at a registered breeder	83	3%
Total	2766	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	1718		1718
Rats	391		391
Guinea-Pigs	15		15
Rabbits	13		13
Pigs	68		68
Sheep	15		15
Other birds	26		26
Other Fish	520		520
Total	2766		2766

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	1659	59.98%
Translational and applied research	501	18.11%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	606	21.91%
Total	2766	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	337	20.31%
Cardiovascular Blood and Lymphatic System	20	1.21%
Nervous System	284	17.12%
Respiratory System	103	6.21%
Musculoskeletal System	10	0.6%
Immune System	873	52.62%
Multisystemic	32	1.93%
Total	1659	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Infectious Disorders	102	20.36%
Human Cardiovascular Disorders	8	1.6%
Human Nervous and Mental Disorders	107	21.36%
Human Sensory Organ Disorders (skin, eyes and ears)	17	3.39%
Non-regulatory toxicology and ecotoxicology	267	53.29%
Total	501	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
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No data reported

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
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No data reported

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
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No data reported

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	2766	100%
Total	2766	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	83	3%
Mild [up to and including]	2186	79.03%
Moderate	497	17.97%
Total	2766	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	2766	100%
Total	2766	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
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No data reported

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
----------------	----------------	------------

No data reported

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Member State: Luxembourg, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	5348	21.14%
Rats	96	0.38%
Zebra fish	19849	78.48%
Total	25293	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	25293	100%
Total	25293	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	5348	224	5572
Rats	96		96
Zebra fish	19849		19849
Total	25293	224	25517

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	24485	95.96%
Translational and applied research	888	3.48%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	144	0.56%
Total	25517	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	1861	7.6%
Cardiovascular Blood and Lymphatic System	374	1.53%
Nervous System	20188	82.45%
Immune System	2062	8.42%
Total	24485	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	526	59.23%
Human Infectious Disorders	326	36.71%
Human Immune Disorders	36	4.05%
Total	888	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
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No data reported

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
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No data reported

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
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No data reported

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	25293	99.12%
Yes	224	0.88%
Total	25517	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	519	2.03%
Mild [up to and including]	21614	84.7%
Moderate	3213	12.59%
Severe	171	0.67%
Total	25517	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	22113	86.66%
Genetically altered without a harmful phenotype	3336	13.07%
Genetically altered with a harmful phenotype	68	0.27%
Total	25517	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Zebra fish	77		77
Total	77		77

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	77	100%
Total	77	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	77	100%
Total	77	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Nervous System	77	100%
Total	77	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Zebra fish	247		247
Total	247		247

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	247	100%
Total	247	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	247	100%
Total	247	100.00%

Member State: Malta, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Other Fish	250	100%
Total	250	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in rest of Europe	250	100%
Total	250	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Other Fish	250		250
Total	250		250

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Translational and applied research	250	100%
Total	250	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
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No data reported

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Animal Diseases and Disorders	250	100%
Total	250	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
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No data reported

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
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No data reported

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
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No data reported

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	250	100%
Total	250	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Mild [up to and including]	250	100%
Total	250	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	250	100%
Total	250	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
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No data reported

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
----------------	----------------	------------

No data reported

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
----------------	----------------	------------

No data reported

Member State: Netherlands, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	188238	41.48%
Rats	89294	19.68%
Guinea-Pigs	5702	1.26%
Hamsters (Syrian)	1025	0.23%
Hamsters (Chinese)	12	0%
Other Rodents	736	0.16%
Rabbits	9551	2.1%
Cats	174	0.04%
Dogs	549	0.12%
Ferrets	608	0.13%
Other carnivores	270	0.06%
Horses, donkeys and cross-breeds	173	0.04%
Pigs	9587	2.11%
Goats	176	0.04%
Sheep	531	0.12%
Cattle	2629	0.58%
Marmoset and tamarins	27	0.01%
Cynomolgus monkey	23	0.01%
Rhesus monkey	141	0.03%
Other Mammals	3305	0.73%
Domestic fowl	55152	12.15%
Other birds	17946	3.95%
Reptiles	294	0.06%
Xenopus	278	0.06%
Other Amphibians	60	0.01%
Zebra fish	51456	11.34%
Other Fish	15842	3.49%
Total	453779	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	350508	77.27%
Animals born in the EU but not at a registered breeder	94773	20.89%
Animals born in rest of Europe	44	0.01%
Animals born in rest of world	8263	1.82%
Total	453588	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born at a registered breeder within EU	189	98.95%
Animals born in Asia	2	1.05%
Total	191	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F2 or greater	2	1.05%
Self-sustaining colony	189	98.95%
Total	191	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	188238	5906	194144
Rats	89294	1805	91099
Guinea-Pigs	5702	114	5816
Hamsters (Syrian)	1025	10	1035
Hamsters (Chinese)	12		12
Other Rodents	736		736
Rabbits	9551	213	9764
Cats	174	26	200
Dogs	549	360	909
Ferrets	608	72	680
Other carnivores	270		270
Horses, donkeys and cross-breeds	173		173
Pigs	9587	151	9738
Goats	176	83	259
Sheep	531	27	558
Cattle	2629	1204	3833
Marmoset and tamarins	27	14	41
Cynomolgus monkey	23	19	42
Rhesus monkey	141	93	234
Other Mammals	3305	10	3315
Domestic fowl	55152	219	55371
Other birds	17946	376	18322
Reptiles	294		294
Rana		9	9
Xenopus	278	160	438
Other Amphibians	60		60
Zebra fish	51456	220	51676
Other Fish	15842	45	15887
Total	453779	11136	464915

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	188633	40.57%
Translational and applied research	127029	27.32%
Regulatory use and Routine production	122247	26.29%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	873	0.19%
Preservation of species	3698	0.8%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	22074	4.75%
Forensic enquiries	361	0.08%
Total	464915	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	86830	46.03%
Cardiovascular Blood and Lymphatic System	6673	3.54%
Nervous System	17654	9.36%
Respiratory System	758	0.4%
Gastrointestinal System including Liver	2857	1.51%
Musculoskeletal System	692	0.37%
Immune System	16286	8.63%
Urogenital/Reproductive System	1129	0.6%
Sensory Organs (skin, eyes and ears)	1030	0.55%
Endocrine System/Metabolism	4351	2.31%
Multisystemic	4084	2.17%
Ethology / Animal Behaviour /Animal Biology	20617	10.93%
Other basic research	25672	13.61%
Total	188633	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	13914	10.95%
Human Infectious Disorders	22898	18.03%
Human Cardiovascular Disorders	5882	4.63%
Human Nervous and Mental Disorders	9358	7.37%
Human Respiratory Disorders	2410	1.9%
Human Gastrointestinal Disorders including Liver	2554	2.01%
Human Musculoskeletal Disorders	1587	1.25%
Human Immune Disorders	4179	3.29%
Human Urogenital/Reproductive Disorders	814	0.64%
Human Sensory Organ Disorders (skin, eyes and ears)	575	0.45%
Human Endocrine/Metabolism Disorders	2423	1.91%
Other Human Disorders	235	0.18%
Animal Diseases and Disorders	31368	24.69%
Animal Welfare	22221	17.49%
Diagnosis of diseases	1115	0.88%
Plant diseases	8	0.01%
Non-regulatory toxicology and ecotoxicology	5488	4.32%
Total	127029	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	50082	40.97%
Other efficacy and tolerance testing	3235	2.65%
Toxicity and other safety testing including pharmacology	68753	56.24%
Routine production	177	0.14%
Total	122247	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	1948	3.89%
Batch potency testing	47934	95.71%
Other quality controls	200	0.4%
Total	50082	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	1886	2.74%
Skin irritation/corrosion	47	0.07%
Skin sensitisation	2378	3.46%
Eye irritation/corrosion	59	0.09%
Repeated dose toxicity	8739	12.71%
Genotoxicity	106	0.15%
Reproductive toxicity	36568	53.19%
Developmental toxicity	9944	14.46%
Kinetics	1635	2.38%
Pharmaco-dynamics (incl safety pharmacology)	8	0.01%
Phototoxicity	4	0.01%
Ecotoxicity	4101	5.96%
Safety testing in food and feed area	2104	3.06%
Target animal safety	1174	1.71%
Total	68753	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
Non lethal methods	1886	100%
Total	1886	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	3875	44.34%
29 - 90 days	4131	47.27%
> 90 days	733	8.39%
Total	8739	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	1368	33.36%
Chronic toxicity	2329	56.79%
Bioaccumulation	404	9.85%
Total	4101	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	30050	24.62%
Legislation on medicinal products for veterinary use and their residues	31915	26.14%
Industrial chemicals legislation	57024	46.71%
Plant protection product legislation	312	0.26%
Biocides legislation	92	0.08%
Food legislation including food contact material	447	0.37%
Feed legislation including legislation for the safety of target animals, workers and environment	2164	1.77%
Other legislation	66	0.05%
Total	122070	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	119368	97.79%
Legislation satisfying national requirements only [within EU]	8	0.01%
Legislation satisfying Non-EU requirements only	2694	2.21%
Total	122070	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	6	3.39%
Other product types	171	96.61%
Total	177	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	453779	97.6%
Yes	11136	2.4%
Total	464915	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	31581	6.79%
Mild [up to and including]	298851	64.28%
Moderate	120316	25.88%
Severe	14167	3.05%
Total	464915	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	335918	72.25%
Genetically altered without a harmful phenotype	121284	26.09%
Genetically altered with a harmful phenotype	7713	1.66%
Total	464915	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	10790	2	10792
Rats	9		9
Zebra fish	167		167
Total	10966	2	10968

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	30	0.27%
Mild [up to and including]	10045	91.58%
Moderate	879	8.01%
Severe	14	0.13%
Total	10968	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	8267	75.37%
Genetically altered without a harmful phenotype	2655	24.21%
Genetically altered with a harmful phenotype	46	0.42%
Total	10968	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	7630	71.9%
Cardiovascular Blood and Lymphatic System	195	1.84%
Nervous System	521	4.91%
Gastrointestinal System including Liver	346	3.26%
Immune System	296	2.79%
Urogenital/Reproductive System	70	0.66%
Multisystemic	31	0.29%
Other basic research	1523	14.35%
Total	10612	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Cancer	6	1.69%
Human Infectious Disorders	15	4.21%
Human Nervous and Mental Disorders	334	93.82%
Human Gastrointestinal Disorders including Liver	1	0.28%
Total	356	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	1057		1057
Rats	429		429
Zebra fish	181		181
Total	1667		1667

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	1106	66.35%
Moderate	544	32.63%
Severe	17	1.02%
Total	1667	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered with a harmful phenotype	1667	100%
Total	1667	100.00%

Member State: Poland, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	88894	57.51%
Rats	28865	18.67%
Guinea-Pigs	5232	3.38%
Hamsters (Syrian)	150	0.1%
Mongolian gerbil	120	0.08%
Other Rodents	7930	5.13%
Rabbits	718	0.46%
Other carnivores	130	0.08%
Horses, donkeys and cross-breeds	50	0.03%
Pigs	1513	0.98%
Goats	17	0.01%
Sheep	1231	0.8%
Cattle	403	0.26%
Other species of Old World Monkeys (Cercopithecoidea)	14	0.01%
Other species of New World Monkeys (Ceboidea)	3	0%
Other Mammals	639	0.41%
Domestic fowl	5067	3.28%
Other birds	6470	4.19%
Reptiles	314	0.2%
Rana	20	0.01%
Other Amphibians	456	0.3%
Zebra fish	950	0.61%
Other Fish	5381	3.48%
Total	154567	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	135019	87.36%
Animals born in the EU but not at a registered breeder	18496	11.97%
Animals born in rest of Europe	361	0.23%
Animals born in rest of world	674	0.44%
Total	154550	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born at a registered breeder within EU	17	100%
Total	17	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F2 or greater	17	100%
Total	17	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	88894	297	89191
Rats	28865	8	28873
Guinea-Pigs	5232	3	5235
Hamsters (Syrian)	150		150
Mongolian gerbil	120		120
Other Rodents	7930	178	8108
Rabbits	718	102	820
Dogs		10	10
Other carnivores	130		130
Horses, donkeys and cross-breeds	50	23	73
Pigs	1513	4	1517
Goats	17	7	24
Sheep	1231	70	1301
Cattle	403	10	413
Other species of Old World Monkeys (Cercopithecoidea)	14		14
Other species of New World Monkeys (Ceboidea)	3		3
Other Mammals	639		639
Domestic fowl	5067		5067
Other birds	6470	96	6566
Reptiles	314		314
Rana	20		20
Other Amphibians	456		456
Zebra fish	950		950
Other Fish	5381		5381
Total	154567	808	155375

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	113469	73.03%
Translational and applied research	15947	10.26%
Regulatory use and Routine production	24762	15.94%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	43	0.03%
Preservation of species	25	0.02%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	1129	0.73%
Total	155375	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	8173	7.2%
Cardiovascular Blood and Lymphatic System	6727	5.93%
Nervous System	52378	46.16%
Respiratory System	784	0.69%
Gastrointestinal System including Liver	3070	2.71%
Musculoskeletal System	673	0.59%
Immune System	7755	6.83%
Urogenital/Reproductive System	2929	2.58%
Sensory Organs (skin, eyes and ears)	225	0.2%
Endocrine System/Metabolism	5992	5.28%
Multisystemic	5956	5.25%
Ethology / Animal Behaviour /Animal Biology	10531	9.28%
Other basic research	8276	7.29%
Total	113469	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	3081	19.32%
Human Infectious Disorders	366	2.3%
Human Cardiovascular Disorders	815	5.11%
Human Nervous and Mental Disorders	1176	7.37%
Human Respiratory Disorders	943	5.91%
Human Musculoskeletal Disorders	64	0.4%
Human Immune Disorders	120	0.75%
Human Urogenital/Reproductive Disorders	44	0.28%
Human Sensory Organ Disorders (skin, eyes and ears)	20	0.13%
Human Endocrine/Metabolism Disorders	316	1.98%
Other Human Disorders	35	0.22%
Animal Diseases and Disorders	490	3.07%
Animal Welfare	3852	24.16%
Diagnosis of diseases	3088	19.36%
Non-regulatory toxicology and ecotoxicology	1537	9.64%
Total	15947	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	16493	66.61%
Other efficacy and tolerance testing	195	0.79%
Toxicity and other safety testing including pharmacology	7784	31.44%
Routine production	290	1.17%
Total	24762	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	3982	24.14%
Pyrogenicity testing	236	1.43%
Batch potency testing	11482	69.62%
Other quality controls	793	4.81%
Total	16493	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	1050	13.49%
Skin irritation/corrosion	139	1.79%
Skin sensitisation	707	9.08%
Eye irritation/corrosion	9	0.12%
Repeated dose toxicity	807	10.37%
Reproductive toxicity	669	8.59%
Developmental toxicity	1694	21.76%
Kinetics	30	0.39%
Ecotoxicity	2364	30.37%
Other toxicity/safety testing	315	4.05%
Total	7784	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	180	17.14%
Non lethal methods	870	82.86%
Total	1050	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	387	47.96%
29 - 90 days	420	52.04%
Total	807	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	2364	100%
Total	2364	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	16253	66.41%
Legislation on medicinal products for veterinary use and their residues	2251	9.2%
Medical devices legislation	896	3.66%
Industrial chemicals legislation	2652	10.84%
Plant protection product legislation	2276	9.3%
Biocides legislation	24	0.1%
Food legislation including food contact material	120	0.49%
Total	24472	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	23931	97.79%
Legislation satisfying national requirements only [within EU]	514	2.1%
Legislation satisfying Non-EU requirements only	27	0.11%
Total	24472	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Other product types	290	100%
Total	290	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	154567	99.48%
Yes	808	0.52%
Total	155375	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	4757	3.06%
Mild [up to and including]	49725	32%
Moderate	49829	32.07%
Severe	51064	32.87%
Total	155375	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	146889	94.54%
Genetically altered without a harmful phenotype	5547	3.57%
Genetically altered with a harmful phenotype	2939	1.89%
Total	155375	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	188		188
Rats	109		109
Other Mammals	61		61
Total	358		358

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	34	9.5%
Mild [up to and including]	34	9.5%
Moderate	184	51.4%
Severe	106	29.61%
Total	358	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered without a harmful phenotype	358	100%
Total	358	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Nervous System	170	100%
Total	170	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Animal Diseases and Disorders	188	100%
Total	188	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	501		501
Total	501		501

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	501	100%
Total	501	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Genetically altered with a harmful phenotype	501	100%
Total	501	100.00%

Member State: Portugal, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	35221	85.91%
Rats	3133	7.64%
Other Rodents	140	0.34%
Rabbits	36	0.09%
Pigs	155	0.38%
Sheep	12	0.03%
Other Mammals	32	0.08%
Domestic fowl	120	0.29%
Zebra fish	906	2.21%
Other Fish	793	1.93%
Cephalopods	450	1.1%
Total	40998	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	39214	95.65%
Animals born in the EU but not at a registered breeder	1455	3.55%
Animals born in rest of world	329	0.8%
Total	40998	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	35221	905	36126
Rats	3133	2	3135
Other Rodents	140		140
Rabbits	36		36
Pigs	155		155
Sheep	12	18	30
Other Mammals	32		32
Domestic fowl	120		120
Other birds		56	56
Zebra fish	906	6	912
Other Fish	793	36	829
Cephalopods	450		450
Total	40998	1023	42021

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	36214	86.18%
Translational and applied research	5117	12.18%
Regulatory use and Routine production	298	0.71%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	392	0.93%
Total	42021	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	3147	8.69%
Cardiovascular Blood and Lymphatic System	1202	3.32%
Nervous System	4877	13.47%
Respiratory System	83	0.23%
Gastrointestinal System including Liver	683	1.89%
Musculoskeletal System	173	0.48%
Immune System	20680	57.1%
Urogenital/Reproductive System	36	0.1%
Endocrine System/Metabolism	1437	3.97%
Multisystemic	153	0.42%
Ethology / Animal Behaviour /Animal Biology	1277	3.53%
Other basic research	2466	6.81%
Total	36214	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	162	3.17%
Human Infectious Disorders	403	7.88%
Human Cardiovascular Disorders	68	1.33%
Human Nervous and Mental Disorders	1973	38.56%
Human Gastrointestinal Disorders including Liver	102	1.99%
Human Musculoskeletal Disorders	127	2.48%
Human Sensory Organ Disorders (skin, eyes and ears)	233	4.55%
Human Endocrine/Metabolism Disorders	36	0.7%
Animal Diseases and Disorders	3	0.06%
Animal Welfare	604	11.8%
Diagnosis of diseases	914	17.86%
Non-regulatory toxicology and ecotoxicology	492	9.62%
Total	5117	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Toxicity and other safety testing including pharmacology	298	100%
Total	298	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Ecotoxicity	126	42.28%
Safety testing in food and feed area	172	57.72%
Total	298	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Chronic toxicity	126	100%
Total	126	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for veterinary use and their residues	126	42.28%
Food legislation including food contact material	172	57.72%
Total	298	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	298	100%
Total	298	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	40998	97.57%
Yes	1023	2.43%
Total	42021	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	2017	4.8%
Mild [up to and including]	17515	41.68%
Moderate	12114	28.83%
Severe	10375	24.69%
Total	42021	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	27193	64.71%
Genetically altered without a harmful phenotype	13750	32.72%
Genetically altered with a harmful phenotype	1078	2.57%
Total	42021	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	495	39	534
Total	495	39	534

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	256	47.94%
Moderate	237	44.38%
Severe	41	7.68%
Total	534	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	17	3.18%
Genetically altered without a harmful phenotype	502	94.01%
Genetically altered with a harmful phenotype	15	2.81%
Total	534	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	83	18.49%
Cardiovascular Blood and Lymphatic System	3	0.67%
Nervous System	75	16.7%
Immune System	288	64.14%
Total	449	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Nervous and Mental Disorders	85	100%
Total	85	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	9447		9447
Zebra fish	368		368
Total	9815		9815

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	9626	98.07%
Moderate	189	1.93%
Total	9815	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	3347	34.1%
Genetically altered without a harmful phenotype	6214	63.31%
Genetically altered with a harmful phenotype	254	2.59%
Total	9815	100.00%

Member State: Romania, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	7975	55.86%
Rats	4367	30.59%
Guinea-Pigs	792	5.55%
Hamsters (Syrian)	150	1.05%
Rabbits	318	2.23%
Pigs	58	0.41%
Sheep	85	0.6%
Domestic fowl	280	1.96%
Other birds	23	0.16%
Rana	230	1.61%
Total	14278	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	12356	86.54%
Animals born in the EU but not at a registered breeder	1922	13.46%
Total	14278	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	7975		7975
Rats	4367		4367
Guinea-Pigs	792		792
Hamsters (Syrian)	150		150
Rabbits	318	186	504
Horses, donkeys and cross-breeds		2	2
Pigs	58		58
Sheep	85	124	209
Cattle		2	2
Domestic fowl	280	50	330
Other birds	23		23
Rana	230		230
Total	14278	364	14642

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	5381	36.75%
Translational and applied research	5500	37.56%
Regulatory use and Routine production	2522	17.22%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	1239	8.46%
Total	14642	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	1525	28.34%
Cardiovascular Blood and Lymphatic System	539	10.02%
Nervous System	634	11.78%
Gastrointestinal System including Liver	165	3.07%
Musculoskeletal System	339	6.3%
Immune System	1349	25.07%
Urogenital/Reproductive System	70	1.3%
Sensory Organs (skin, eyes and ears)	10	0.19%
Endocrine System/Metabolism	318	5.91%
Multisystemic	342	6.36%
Ethology / Animal Behaviour /Animal Biology	90	1.67%
Total	5381	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Infectious Disorders	114	2.07%
Human Cardiovascular Disorders	211	3.84%
Human Gastrointestinal Disorders including Liver	286	5.2%
Human Musculoskeletal Disorders	260	4.73%
Human Immune Disorders	275	5%
Human Sensory Organ Disorders (skin, eyes and ears)	121	2.2%
Human Endocrine/Metabolism Disorders	690	12.55%
Animal Diseases and Disorders	74	1.35%
Diagnosis of diseases	3040	55.27%
Non-regulatory toxicology and ecotoxicology	429	7.8%
Total	5500	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	1789	70.94%
Toxicity and other safety testing including pharmacology	106	4.2%
Routine production	627	24.86%
Total	2522	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	721	40.3%
Pyrogenicity testing	234	13.08%
Batch potency testing	753	42.09%
Other quality controls	81	4.53%
Total	1789	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	20	18.87%
Ecotoxicity	86	81.13%
Total	106	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
Non lethal methods	20	100%
Total	20	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Chronic toxicity	86	100%
Total	86	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	914	48.23%
Legislation on medicinal products for veterinary use and their residues	875	46.17%
Medical devices legislation	86	4.54%
Food legislation including food contact material	20	1.06%
Total	1895	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	1513	79.84%
Legislation satisfying Non-EU requirements only	382	20.16%
Total	1895	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	587	93.62%
Other product types	40	6.38%
Total	627	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	14278	97.51%
Yes	364	2.49%
Total	14642	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	2110	14.41%
Mild [up to and including]	5061	34.56%
Moderate	6094	41.62%
Severe	1377	9.4%
Total	14642	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	14289	97.59%
Genetically altered without a harmful phenotype	353	2.41%
Total	14642	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
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No data reported

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Member State: Slovakia, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	5547	37.72%
Rats	7619	51.81%
Guinea-Pigs	1036	7.05%
Mongolian gerbil	9	0.06%
Rabbits	195	1.33%
Cats	11	0.07%
Cattle	1	0.01%
Domestic fowl	228	1.55%
Other birds	59	0.4%
Total	14705	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	14705	100%
Total	14705	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	5547		5547
Rats	7619		7619
Guinea-Pigs	1036		1036
Mongolian gerbil	9		9
Rabbits	195	31	226
Cats	11		11
Sheep		2	2
Cattle	1		1
Domestic fowl	228	5	233
Other birds	59		59
Total	14705	38	14743

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	10819	73.38%
Translational and applied research	1046	7.09%
Regulatory use and Routine production	2822	19.14%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	56	0.38%
Total	14743	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	316	2.92%
Cardiovascular Blood and Lymphatic System	932	8.61%
Nervous System	4076	37.67%
Respiratory System	607	5.61%
Gastrointestinal System including Liver	180	1.66%
Musculoskeletal System	19	0.18%
Immune System	424	3.92%
Urogenital/Reproductive System	1175	10.86%
Sensory Organs (skin, eyes and ears)	9	0.08%
Endocrine System/Metabolism	610	5.64%
Multisystemic	782	7.23%
Ethology / Animal Behaviour /Animal Biology	595	5.5%
Other basic research	1094	10.11%
Total	10819	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cardiovascular Disorders	20	1.91%
Human Nervous and Mental Disorders	528	50.48%
Human Immune Disorders	21	2.01%
Human Urogenital/Reproductive Disorders	10	0.96%
Human Sensory Organ Disorders (skin, eyes and ears)	27	2.58%
Human Endocrine/Metabolism Disorders	60	5.74%
Animal Diseases and Disorders	374	35.76%
Diagnosis of diseases	6	0.57%
Total	1046	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	1014	35.93%
Toxicity and other safety testing including pharmacology	1777	62.97%
Routine production	31	1.1%
Total	2822	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	867	85.5%
Batch potency testing	147	14.5%
Total	1014	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	653	36.75%
Skin sensitisation	542	30.5%
Repeated dose toxicity	460	25.89%
Reproductive toxicity	122	6.87%
Total	1777	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	603	92.34%
Non lethal methods	50	7.66%
Total	653	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	280	60.87%
29 - 90 days	180	39.13%
Total	460	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	1269	45.47%
Legislation on medicinal products for veterinary use and their residues	133	4.77%
Medical devices legislation	64	2.29%
Industrial chemicals legislation	946	33.89%
Plant protection product legislation	9	0.32%
Food legislation including food contact material	190	6.81%
Feed legislation including legislation for the safety of target animals, workers and environment	180	6.45%
Total	2791	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	2791	100%
Total	2791	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	31	100%
Total	31	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	14705	99.74%
Yes	38	0.26%
Total	14743	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	1101	7.47%
Mild [up to and including]	4325	29.34%
Moderate	8963	60.79%
Severe	354	2.4%
Total	14743	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	13516	91.68%
Genetically altered without a harmful phenotype	242	1.64%
Genetically altered with a harmful phenotype	985	6.68%
Total	14743	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
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No data reported

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
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No data reported

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	540		540
Rats	320		320
Total	860		860

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	860	100%
Total	860	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	588	68.37%
Genetically altered without a harmful phenotype	18	2.09%
Genetically altered with a harmful phenotype	254	29.53%
Total	860	100.00%

Member State: Slovenia, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	3998	88.57%
Rats	226	5.01%
Rabbits	76	1.68%
Pigs	80	1.77%
Sheep	26	0.58%
Domestic fowl	10	0.22%
Other Fish	98	2.17%
Total	4514	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	4514	100%
Total	4514	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
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No data reported

Generation of non-human primates

NHP Generation	Number of animals	Percentage
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No data reported

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	3998	510	4508
Rats	226		226
Rabbits	76	59	135
Horses, donkeys and cross-breeds		2	2
Pigs	80		80
Sheep	26	2	28
Domestic fowl	10		10
Other Fish	98		98
Total	4514	573	5087

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	1035	20.35%
Translational and applied research	1731	34.03%
Regulatory use and Routine production	2183	42.91%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	16	0.31%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	122	2.4%
Total	5087	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	149	14.4%
Nervous System	70	6.76%
Gastrointestinal System including Liver	150	14.49%
Musculoskeletal System	34	3.29%
Immune System	102	9.86%
Endocrine System/Metabolism	375	36.23%
Multisystemic	59	5.7%
Ethology / Animal Behaviour / Animal Biology	48	4.64%
Other basic research	48	4.64%
Total	1035	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	1552	89.66%
Human Endocrine/Metabolism Disorders	65	3.76%
Diagnosis of diseases	114	6.59%
Total	1731	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	2101	96.24%
Toxicity and other safety testing including pharmacology	82	3.76%
Total	2183	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	272	12.95%
Pyrogenicity testing	59	2.81%
Batch potency testing	1770	84.25%
Total	2101	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Kinetics	82	100%
Total	82	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	2183	100%
Total	2183	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	2183	100%
Total	2183	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	4514	88.74%
Yes	573	11.26%
Total	5087	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	44	0.86%
Mild [up to and including]	4317	84.86%
Moderate	637	12.52%
Severe	89	1.75%
Total	5087	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	4736	93.1%
Genetically altered without a harmful phenotype	288	5.66%
Genetically altered with a harmful phenotype	63	1.24%
Total	5087	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	55		55
Total	55		55

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	55	100%
Total	55	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	55	100%
Total	55	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
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No data reported

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Other Human Disorders	55	100%
Total	55	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
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No data reported

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
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No data reported

Member State: Spain, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	465870	65.1%
Rats	55826	7.8%
Guinea-Pigs	6411	0.9%
Hamsters (Syrian)	599	0.08%
Other Rodents	141	0.02%
Rabbits	22205	3.1%
Cats	178	0.02%
Dogs	1045	0.15%
Ferrets	164	0.02%
Other carnivores	25	0%
Horses, donkeys and cross-breeds	46	0.01%
Pigs	8655	1.21%
Goats	354	0.05%
Sheep	1715	0.24%
Cattle	1138	0.16%
Cynomolgus monkey	246	0.03%
Other Mammals	99	0.01%
Domestic fowl	82047	11.46%
Other birds	2385	0.33%
Reptiles	1003	0.14%
Rana	18	0%
Xenopus	1204	0.17%
Other Amphibians	1996	0.28%
Zebra fish	19941	2.79%
Other Fish	42320	5.91%
Cephalopods	20	0%
Total	715651	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	668867	93.49%
Animals born in the EU but not at a registered breeder	45911	6.42%
Animals born in rest of Europe	31	0%
Animals born in rest of world	596	0.08%
Total	715405	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born in Asia	104	42.28%
Animals born in Africa	142	57.72%
Total	246	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F1	2	0.81%
F2 or greater	244	99.19%
Total	246	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	465870	1335	467205
Rats	55826	162	55988
Guinea-Pigs	6411	336	6747
Hamsters (Syrian)	599		599
Other Rodents	141		141
Rabbits	22205	3726	25931
Cats	178	353	531
Dogs	1045	431	1476
Ferrets	164		164
Other carnivores	25		25
Horses, donkeys and cross-breeds	46	15	61
Pigs	8655		8655
Goats	354	15	369
Sheep	1715	238	1953
Cattle	1138	562	1700
Cynomolgus monkey	246	205	451
Other Mammals	99		99
Domestic fowl	82047	60	82107
Other birds	2385	150	2535
Reptiles	1003		1003
Rana	18		18
Xenopus	1204		1204
Other Amphibians	1996		1996
Zebra fish	19941	1434	21375
Other Fish	42320	1160	43480
Cephalopods	20		20
Total	715651	10182	725833

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	310014	42.71%
Translational and applied research	277423	38.22%
Regulatory use and Routine production	120192	16.56%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	6048	0.83%
Preservation of species	371	0.05%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	11785	1.62%
Total	725833	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	26149	8.43%
Cardiovascular Blood and Lymphatic System	25464	8.21%
Nervous System	76225	24.59%
Respiratory System	2457	0.79%
Gastrointestinal System including Liver	8392	2.71%
Musculoskeletal System	6847	2.21%
Immune System	23703	7.65%
Urogenital/Reproductive System	6421	2.07%
Sensory Organs (skin, eyes and ears)	4396	1.42%
Endocrine System/Metabolism	22459	7.24%
Multisystemic	33719	10.88%
Ethology / Animal Behaviour /Animal Biology	71415	23.04%
Other basic research	2367	0.76%
Total	310014	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	113728	40.99%
Human Infectious Disorders	13579	4.89%
Human Cardiovascular Disorders	6440	2.32%
Human Nervous and Mental Disorders	20809	7.5%
Human Respiratory Disorders	2713	0.98%
Human Gastrointestinal Disorders including Liver	8755	3.16%
Human Musculoskeletal Disorders	2052	0.74%
Human Immune Disorders	4675	1.69%
Human Urogenital/Reproductive Disorders	1160	0.42%
Human Sensory Organ Disorders (skin, eyes and ears)	15749	5.68%
Human Endocrine/Metabolism Disorders	15631	5.63%
Other Human Disorders	1651	0.6%
Animal Diseases and Disorders	50632	18.25%
Animal Welfare	8413	3.03%
Diagnosis of diseases	9346	3.37%
Plant diseases	10	0%
Non-regulatory toxicology and ecotoxicology	2080	0.75%
Total	277423	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	68653	57.12%
Other efficacy and tolerance testing	2121	1.76%
Toxicity and other safety testing including pharmacology	48164	40.07%
Routine production	1254	1.04%
Total	120192	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	23330	33.98%
Pyrogenicity testing	9472	13.8%
Batch potency testing	31416	45.76%
Other quality controls	4435	6.46%
Total	68653	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	11069	22.98%
Skin irritation/corrosion	43	0.09%
Skin sensitisation	616	1.28%
Eye irritation/corrosion	11	0.02%
Repeated dose toxicity	6225	12.92%
Carcinogenicity	56	0.12%
Genotoxicity	22	0.05%
Developmental toxicity	759	1.58%
Neurotoxicity	2017	4.19%
Kinetics	3364	6.98%
Pharmaco-dynamics (incl safety pharmacology)	1476	3.06%
Ecotoxicity	156	0.32%
Safety testing in food and feed area	21778	45.22%
Target animal safety	486	1.01%
Other toxicity/safety testing	86	0.18%
Total	48164	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	10180	91.97%
Non lethal methods	889	8.03%
Total	11069	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	1906	30.62%
29 - 90 days	3714	59.66%
> 90 days	605	9.72%
Total	6225	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	124	79.49%
Reproductive ecotoxicity	32	20.51%
Total	156	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	32259	27.12%
Legislation on medicinal products for veterinary use and their residues	61342	51.57%
Medical devices legislation	138	0.12%
Industrial chemicals legislation	3194	2.69%
Plant protection product legislation	28	0.02%
Biocides legislation	56	0.05%
Food legislation including food contact material	21850	18.37%
Feed legislation including legislation for the safety of target animals, workers and environment	68	0.06%
Other legislation	3	0%
Total	118938	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	106010	89.13%
Legislation satisfying national requirements only [within EU]	4057	3.41%
Legislation satisfying Non-EU requirements only	8871	7.46%
Total	118938	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	54	4.31%
Monoclonal antibody by mouse ascites method	55	4.39%
Other product types	1145	91.31%
Total	1254	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	715651	98.6%
Yes	10182	1.4%
Total	725833	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	40892	5.63%
Mild [up to and including]	355722	49.01%
Moderate	266570	36.73%
Severe	62649	8.63%
Total	725833	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	501844	69.14%
Genetically altered without a harmful phenotype	201157	27.71%
Genetically altered with a harmful phenotype	22832	3.15%
Total	725833	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	17749	70	17819
Rats	48		48
Pigs	1		1
Zebra fish	4886		4886
Other Fish	1187		1187
Total	23871	70	23941

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	176	0.74%
Mild [up to and including]	16644	69.52%
Moderate	5213	21.77%
Severe	1908	7.97%
Total	23941	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	9606	40.12%
Genetically altered without a harmful phenotype	13230	55.26%
Genetically altered with a harmful phenotype	1105	4.62%
Total	23941	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	2268	11.63%
Cardiovascular Blood and Lymphatic System	800	4.1%
Nervous System	2745	14.08%
Gastrointestinal System including Liver	493	2.53%
Musculoskeletal System	150	0.77%
Immune System	956	4.9%
Urogenital/Reproductive System	127	0.65%
Sensory Organs (skin, eyes and ears)	5887	30.2%
Endocrine System/Metabolism	175	0.9%
Multisystemic	4093	21%
Ethology / Animal Behaviour /Animal Biology	1800	9.23%
Total	19494	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Cancer	2869	64.52%
Human Nervous and Mental Disorders	585	13.15%
Human Immune Disorders	418	9.4%
Human Sensory Organ Disorders (skin, eyes and ears)	52	1.17%
Human Endocrine/Metabolism Disorders	21	0.47%
Diagnosis of diseases	502	11.29%
Total	4447	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	38443		38443
Zebra fish	14759		14759
Total	53202		53202

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	135	0.25%
Mild [up to and including]	42728	80.31%
Moderate	8998	16.91%
Severe	1341	2.52%
Total	53202	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	1285	2.42%
Genetically altered without a harmful phenotype	29469	55.39%
Genetically altered with a harmful phenotype	22448	42.19%
Total	53202	100.00%

Member State: Sweden, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	193965	67.99%
Rats	19055	6.68%
Guinea-Pigs	409	0.14%
Hamsters (Syrian)	34	0.01%
Other Rodents	5	0%
Rabbits	1573	0.55%
Cats	104	0.04%
Dogs	279	0.1%
Other carnivores	124	0.04%
Horses, donkeys and cross-breeds	17	0.01%
Pigs	1220	0.43%
Goats	30	0.01%
Sheep	35	0.01%
Cattle	493	0.17%
Cynomolgus monkey	2	0%
Rhesus monkey	23	0.01%
Other Mammals	192	0.07%
Domestic fowl	1452	0.51%
Other birds	10657	3.74%
Rana	308	0.11%
Xenopus	231	0.08%
Other Amphibians	2694	0.94%
Zebra fish	18461	6.47%
Other Fish	33940	11.9%
Total	285303	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	217256	76.16%
Animals born in the EU but not at a registered breeder	64066	22.46%
Animals born in rest of Europe	1608	0.56%
Animals born in rest of world	2348	0.82%
Total	285278	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born in Asia	6	24%
Animals born in America	19	76%
Total	25	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F2 or greater	25	100%
Total	25	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	193965	1228	195193
Rats	19055	246	19301
Guinea-Pigs	409		409
Hamsters (Syrian)	34		34
Other Rodents	5		5
Rabbits	1573	1	1574
Cats	104		104
Dogs	279	107	386
Other carnivores	124	16	140
Horses, donkeys and cross-breeds	17	24	41
Pigs	1220	337	1557
Goats	30		30
Sheep	35		35
Cattle	493	927	1420
Cynomolgus monkey	2		2
Rhesus monkey	23		23
Other Mammals	192	135	327
Domestic fowl	1452		1452
Other birds	10657	612	11269
Rana	308		308
Xenopus	231	30	261
Other Amphibians	2694		2694
Zebra fish	18461	880	19341
Other Fish	33940		33940
Total	285303	4543	289846

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	202004	69.69%
Translational and applied research	52637	18.16%
Regulatory use and Routine production	2424	0.84%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	27916	9.63%
Preservation of species	617	0.21%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	4248	1.47%
Total	289846	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	20290	10.04%
Cardiovascular Blood and Lymphatic System	36103	17.87%
Nervous System	48921	24.22%
Respiratory System	7362	3.64%
Gastrointestinal System including Liver	1383	0.68%
Musculoskeletal System	2641	1.31%
Immune System	22592	11.18%
Urogenital/Reproductive System	1521	0.75%
Sensory Organs (skin, eyes and ears)	3150	1.56%
Endocrine System/Metabolism	25884	12.81%
Multisystemic	6172	3.06%
Ethology / Animal Behaviour /Animal Biology	16914	8.37%
Other basic research	9071	4.49%
Total	202004	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	9717	18.46%
Human Infectious Disorders	1328	2.52%
Human Cardiovascular Disorders	4936	9.38%
Human Nervous and Mental Disorders	9654	18.34%
Human Respiratory Disorders	4988	9.48%
Human Musculoskeletal Disorders	862	1.64%
Human Immune Disorders	9224	17.52%
Human Urogenital/Reproductive Disorders	255	0.48%
Human Sensory Organ Disorders (skin, eyes and ears)	500	0.95%
Human Endocrine/Metabolism Disorders	5501	10.45%
Other Human Disorders	2323	4.41%
Animal Diseases and Disorders	704	1.34%
Animal Welfare	105	0.2%
Diagnosis of diseases	542	1.03%
Non-regulatory toxicology and ecotoxicology	1998	3.8%
Total	52637	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	773	31.89%
Other efficacy and tolerance testing	235	9.69%
Toxicity and other safety testing including pharmacology	1416	58.42%
Total	2424	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch potency testing	773	100%
Total	773	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Repeated dose toxicity	113	7.98%
Kinetics	1303	92.02%
Total	1416	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
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No data reported

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	113	100%
Total	113	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
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No data reported

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	1651	68.11%
Legislation on medicinal products for veterinary use and their residues	773	31.89%
Total	2424	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	2424	100%
Total	2424	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
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No data reported

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	285303	98.43%
Yes	4543	1.57%
Total	289846	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	9102	3.14%
Mild [up to and including]	92527	31.92%
Moderate	153733	53.04%
Severe	34484	11.9%

Severity	Number of uses	Percentage
Total	289846	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	144621	49.9%
Genetically altered without a harmful phenotype	118948	41.04%
Genetically altered with a harmful phenotype	26277	9.07%
Total	289846	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	22641	788	23429
Zebra fish	8546	1271	9817
Total	31187	2059	33246

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	222	0.67%
Mild [up to and including]	15644	47.06%
Moderate	10806	32.5%
Severe	6574	19.77%
Total	33246	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	4166	12.53%
Genetically altered without a harmful phenotype	18428	55.43%
Genetically altered with a harmful phenotype	10652	32.04%
Total	33246	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	2259	7.49%
Cardiovascular Blood and Lymphatic System	8399	27.84%
Nervous System	4504	14.93%
Gastrointestinal System including Liver	148	0.49%
Musculoskeletal System	1579	5.23%
Immune System	602	2%
Urogenital/Reproductive System	5022	16.65%
Endocrine System/Metabolism	2171	7.2%
Multisystemic	4029	13.35%
Other basic research	1457	4.83%
Total	30170	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Cancer	1124	36.54%
Human Cardiovascular Disorders	1547	50.29%
Human Nervous and Mental Disorders	83	2.7%
Human Respiratory Disorders	89	2.89%
Human Immune Disorders	47	1.53%
Human Endocrine/Metabolism Disorders	186	6.05%
Total	3076	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	1659		1659
Rats	20		20
Total	1679		1679

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Mild [up to and including]	1679	100%
Total	1679	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	1183	70.46%
Genetically altered without a harmful phenotype	496	29.54%
Total	1679	100.00%

Member State: United Kingdom, 2017

Part 1: Numbers of animals used for the first time for research, testing, routine production and educational (including training) purposes

Numbers of animals used for the first time by species

Animal species	Number of animals	Percentage
Mice	1103996	60.03%
Rats	231775	12.6%
Guinea-Pigs	22560	1.23%
Hamsters (Syrian)	1126	0.06%
Mongolian gerbil	307	0.02%
Other Rodents	2325	0.13%
Rabbits	9580	0.52%
Cats	74	0%
Dogs	2518	0.14%
Ferrets	405	0.02%
Other carnivores	235	0.01%
Horses, donkeys and cross-breeds	288	0.02%
Pigs	4476	0.24%
Goats	280	0.02%
Sheep	5346	0.29%
Cattle	8489	0.46%
Marmoset and tamarins	110	0.01%
Cynomolgus monkey	2023	0.11%
Rhesus monkey	82	0%
Other Mammals	792	0.04%
Domestic fowl	124629	6.78%
Other birds	6258	0.34%
Reptiles	92	0.01%
Rana	108	0.01%
Xenopus	2530	0.14%
Other Amphibians	522	0.03%
Zebra fish	216671	11.78%
Other Fish	91482	4.97%
Total	1839079	100.00%

Place of birth of animals other than non-human primates

Place of birth	Number of animals	Percentage
Animals born in the EU at a registered breeder	1710834	93.14%
Animals born in the EU but not at a registered breeder	112655	6.13%
Animals born in rest of Europe	3229	0.18%
Animals born in rest of world	10146	0.55%
Total	1836864	100.00%

Source of non-human primates

NHP Source (origin)	Number of animals	Percentage
Animals born at a registered breeder within EU	253	11.42%
Animals born in Asia	616	27.81%
Animals born in Africa	1346	60.77%
Total	2215	100.00%

Generation of non-human primates

NHP Generation	Number of animals	Percentage
F1	1	0.05%
F2 or greater	587	26.5%
Self-sustaining colony	1627	73.45%
Total	2215	100.00%

Part 2: Numbers of all uses of animals for research, testing, routine production and educational (including training) purposes

First use versus reuses

Animal species	First uses	Reuses	Total
Mice	1103996	944	1104940
Rats	231775	3006	234781
Guinea-Pigs	22560		22560
Hamsters (Syrian)	1126		1126
Mongolian gerbil	307	4	311
Other Rodents	2325	2	2327
Rabbits	9580	864	10444
Cats	74	214	288
Dogs	2518	1431	3949
Ferrets	405		405
Other carnivores	235	9	244
Horses, donkeys and cross-breeds	288	10312	10600
Pigs	4476	142	4618
Goats	280	24	304
Sheep	5346	42583	47929
Cattle	8489	596	9085
Marmoset and tamarins	110	56	166
Cynomolgus monkey	2023	639	2662
Rhesus monkey	82	50	132
Other Mammals	792	12	804
Domestic fowl	124629	27	124656
Other birds	6258	471	6729
Reptiles	92		92
Rana	108		108
Xenopus	2530	4923	7453
Other Amphibians	522	11	533
Zebra fish	216671	439	217110
Other Fish	91482	150	91632
Total	1839079	66909	1905988

Uses of animals in research, testing, routine production and education (including training) by main categories of scientific purposes

Purpose Category	Number of uses	Percentage
Basic Research	1058370	55.53%
Translational and applied research	326965	17.15%
Regulatory use and Routine production	505504	26.52%
Protection of the natural environment in the interests of the health or welfare of human beings or animals	11901	0.62%
Preservation of species	1925	0.1%
Higher education or training for the acquisition, maintenance or improvement of vocational skills	1235	0.06%
Forensic enquiries	88	0%
Total	1905988	100.00%

Basic research related uses

Basic research	Number of uses	Percentage
Oncology	130655	12.34%
Cardiovascular Blood and Lymphatic System	67776	6.4%
Nervous System	243752	23.03%
Respiratory System	10995	1.04%
Gastrointestinal System including Liver	22962	2.17%
Musculoskeletal System	24477	2.31%
Immune System	213921	20.21%
Urogenital/Reproductive System	28064	2.65%
Sensory Organs (skin, eyes and ears)	17935	1.69%
Endocrine System/Metabolism	25990	2.46%
Multisystemic	80548	7.61%
Ethology / Animal Behaviour /Animal Biology	64369	6.08%
Other basic research	126926	11.99%
Total	1058370	100.00%

Translational and applied research related uses

Translational and applied research	Number of uses	Percentage
Human Cancer	86658	26.5%
Human Infectious Disorders	69473	21.25%
Human Cardiovascular Disorders	4173	1.28%
Human Nervous and Mental Disorders	42005	12.85%
Human Respiratory Disorders	12633	3.86%
Human Gastrointestinal Disorders including Liver	3943	1.21%
Human Musculoskeletal Disorders	5958	1.82%
Human Immune Disorders	6481	1.98%
Human Urogenital/Reproductive Disorders	3061	0.94%
Human Sensory Organ Disorders (skin, eyes and ears)	10774	3.3%
Human Endocrine/Metabolism Disorders	7815	2.39%
Other Human Disorders	10802	3.3%
Animal Diseases and Disorders	21921	6.7%
Animal Welfare	2843	0.87%
Diagnosis of diseases	3476	1.06%
Non-regulatory toxicology and ecotoxicology	34949	10.69%
Total	326965	100.00%

Regulatory uses and Routine production

Regulatory uses and Routine production	Number of uses	Percentage
Quality control (incl batch safety and potency testing)	145113	28.71%
Other efficacy and tolerance testing	24606	4.87%
Toxicity and other safety testing including pharmacology	196061	38.79%
Routine production	139724	27.64%
Total	505504	100.00%

Regulatory uses - Quality control (including batch safety and potency testing)

Regulatory uses - Quality control (including batch safety and potency testing)	Number of uses	Percentage
Batch safety testing	18401	12.68%
Pyrogenicity testing	1125	0.78%
Batch potency testing	114151	78.66%
Other quality controls	11436	7.88%
Total	145113	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology

Regulatory uses - Toxicity and other safety testing including pharmacology	Number of uses	Percentage
Acute and sub-acute	16580	8.46%
Skin irritation/corrosion	112	0.06%
Skin sensitisation	2942	1.5%
Eye irritation/corrosion	63	0.03%
Repeated dose toxicity	40429	20.62%
Carcinogenicity	8067	4.11%
Genotoxicity	5314	2.71%
Reproductive toxicity	61241	31.24%
Developmental toxicity	34779	17.74%
Neurotoxicity	314	0.16%
Kinetics	3124	1.59%
Pharmaco-dynamics (incl safety pharmacology)	5309	2.71%
Ecotoxicity	11444	5.84%
Safety testing in food and feed area	183	0.09%
Target animal safety	1360	0.69%
Other toxicity/safety testing	4800	2.45%
Total	196061	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods

Regulatory uses - Toxicity and other safety testing including pharmacology - Acute and sub-acute toxicity testing methods	Number of uses	Percentage
LD50, LC50	10622	64.07%
Other lethal methods	98	0.59%
Non lethal methods	5860	35.34%
Total	16580	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Repeated dose toxicity	Number of uses	Percentage
up to 28 days	21572	53.36%
29 - 90 days	11727	29.01%
> 90 days	7130	17.64%
Total	40429	100.00%

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity

Regulatory uses - Toxicity and other safety testing including pharmacology - Ecotoxicity	Number of uses	Percentage
Acute toxicity	3653	31.92%
Chronic toxicity	6320	55.23%
Reproductive ecotoxicity	514	4.49%
Endocrine activity	84	0.73%
Bioaccumulation	873	7.63%
Total	11444	100.00%

Regulatory uses by type of legislation

Type of legislation	Number of uses	Percentage
Legislation on medicinal products for human use	208034	56.87%
Legislation on medicinal products for veterinary use and their residues	34282	9.37%
Medical devices legislation	562	0.15%
Industrial chemicals legislation	86097	23.54%
Plant protection product legislation	18417	5.03%
Biocides legislation	292	0.08%
Food legislation including food contact material	1688	0.46%
Feed legislation including legislation for the safety of target animals, workers and environment	14831	4.05%
Other legislation	1577	0.43%
Total	365780	100.00%

Regulatory uses by origin of regulatory requirement

Origin of legislative requirement	Number of uses	Percentage
Legislation satisfying EU requirements	338692	92.59%
Legislation satisfying national requirements only [within EU]	1651	0.45%
Legislation satisfying Non-EU requirements only	25437	6.95%
Total	365780	100.00%

Routine production uses by product type

Product type	Number of uses	Percentage
Blood based products	55197	39.5%
Other product types	84527	60.5%
Total	139724	100.00%

Uses of animals in research, testing, routine production and education (including training) by first use and reuses

Reuse	Number of uses	Percentage
No	1839079	96.49%
Yes	66909	3.51%
Total	1905988	100.00%

Uses of animals in research, testing, routine production and education (including training) by severity

Severity	Number of uses	Percentage
Non-recovery	135307	7.1%
Mild [up to and including]	1171215	61.45%
Moderate	504038	26.44%
Severe	95428	5.01%
Total	1905988	100.00%

Uses of animals in research, testing, routine production and education (including training) by genetic status of animals

Genetic status	Number of uses	Percentage
Not genetically altered	1182220	62.03%
Genetically altered without a harmful phenotype	596728	31.31%
Genetically altered with a harmful phenotype	127040	6.67%
Total	1905988	100.00%

Part 3: Creation and maintenance of genetically altered animal lines

All uses of animals for the creation of new genetically altered animal lines by species, first uses and reuses

Animal species	First uses	Reuses	Total
Mice	213555	393	213948
Rats	131		131
Pigs	124		124
Sheep	17		17
Domestic fowl	647		647
Xenopus	250		250
Zebra fish	49941	82	50023
Other Fish	34		34
Total	264699	475	265174

Uses of animals for the creation of new genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	201	0.08%
Mild [up to and including]	241543	91.09%
Moderate	21638	8.16%
Severe	1792	0.68%
Total	265174	100.00%

Uses of animals for the creation of new genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	56940	21.47%
Genetically altered without a harmful phenotype	191024	72.04%
Genetically altered with a harmful phenotype	17210	6.49%
Total	265174	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of basic research purposes

Basic research	Number of uses	Percentage
Oncology	45369	17.71%
Cardiovascular Blood and Lymphatic System	10621	4.15%
Nervous System	29420	11.48%
Respiratory System	659	0.26%
Gastrointestinal System including Liver	3235	1.26%
Musculoskeletal System	3946	1.54%
Immune System	32311	12.61%
Urogenital/Reproductive System	6774	2.64%
Sensory Organs (skin, eyes and ears)	5542	2.16%
Endocrine System/Metabolism	3421	1.34%
Multisystemic	92818	36.23%
Ethology / Animal Behaviour /Animal Biology	2854	1.11%
Other basic research	19201	7.5%
Total	256171	100.00%

Uses of animals for the creation of new genetically altered animal lines by type of translational and applied research purposes

Translational and applied research	Number of uses	Percentage
Human Cancer	4221	46.88%
Human Infectious Disorders	730	8.11%
Human Cardiovascular Disorders	201	2.23%
Human Nervous and Mental Disorders	349	3.88%
Human Musculoskeletal Disorders	155	1.72%
Human Immune Disorders	873	9.7%
Human Urogenital/Reproductive Disorders	480	5.33%
Human Sensory Organ Disorders (skin, eyes and ears)	80	0.89%
Other Human Disorders	48	0.53%
Animal Diseases and Disorders	1586	17.62%
Non-regulatory toxicology and ecotoxicology	280	3.11%
Total	9003	100.00%

All uses of animals for the maintenance of established genetically altered animal lines by species

Animal species	First uses	Reuses	Total uses
Mice	346497	1	346498
Rats	2919		2919
Domestic fowl	367		367
Xenopus	195	197	392
Zebra fish	52401	612	53013
Other Fish	524		524
Total	402903	810	403713

Uses of animals for the maintenance of established genetically altered animal lines by severity

Severity	Number of uses	Percentage
Non-recovery	272	0.07%
Mild [up to and including]	328866	81.46%
Moderate	33725	8.35%
Severe	40850	10.12%
Total	403713	100.00%

Uses of animals for the maintenance of established genetically altered animal lines by genetic status of the animals

Genetic status	Number of uses	Percentage
Not genetically altered	24437	6.05%
Genetically altered without a harmful phenotype	315057	78.04%
Genetically altered with a harmful phenotype	64219	15.91%
Total	403713	100.00%

