

SECTION 2: ALL USES OF ANIMALS FOR RESEARCH, TESTING, ROUTINE PRODUCTION AND EDUCATION AND TRAINING PURPOSES - TRENDS

Excludes the uses of animals for the creation and maintenance of genetically altered animals.

FILTERS

Reporting year: All

Country: All

EC ID: All

File name: All

EU Submission: Yes

ID 1: All

ID 2: All

ID 3: All

Species: All

Other species: All

Species grouping level 1: All

Species grouping level 2: All

Mammals: All

Non-human primates: All

Reuse: All

Place of birth: All

NHP Place of birth: All

NHP Colony type: Self-sustaining colony: All

NHP generation: All

Genetic status: All

Purpose: All

Purpose category level 1: All

Purpose category level 2: All

Purpose category level 3: All

Purpose category level 4: All

Type of legislation: All

Other legislation: All

Origin of legislation: All

Severity: All

Custom severity: All

Method of tissue sampling: All

Severity of genotyping: All

ALL USES OF ANIMALS

Uses of animals by species

Species	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Mice		150358	167976	160422	174511	159977	145890	138005	142779
Rats		48554	47573	38498	37280	37726	33349	25552	24696
Guinea-Pigs		2643	3362	2947	2659	3913	2249	1991	1434
Hamsters (Syrian)		172	152	282	292	6	111	239	163
Other rodents		86	4	3	13	33	0	12	0
Rabbits		1665	2370	2443	3116	2304	2344	4370	3029
Cats		59	18	0	3	1	6	3	0
Dogs		157	266	214	370	379	589	637	237
Ferrets		0	2	4	0	0	0	0	0
Other carnivores		886	627	1035	3347	3843	6128	0	1
Horses, donkeys and cross-breeds		115	328	119	181	51	16	52	41
Pigs		10572	8066	5801	7643	8643	8816	17222	23698
Goats		11	6	1	13	51	27	8	21
Sheep		47	37	66	78	18	67	41	48
Cattle		534	2077	3677	1999	1185	743	1898	1476
Prosimians		0	0	0	0	0	0	0	6
Baboons		0	0	0	0	0	0	0	5
Other mammals		38	55	28	29	42	36	28	117
Domestic fowl		2407	1732	466	2283	1269	621	1534	355
Other birds		438	373	408	559	439	401	467	411
Reptiles		265	220	289	155	53	24	154	86
Rana		0	0	4	809	452	792	0	0
Xenopus		64	56	285	1389	391	390	740	480
Other amphibians		26	30	47	94	72	16	139	149
Zebra fish		2530	3308	1587	2028	3935	7731	8401	7678
Sea bass		0	0	0	0	0	0	2762	660
Salmon, trout, chars and graylings		0	0	0	0	0	0	8763	13483
Other fish		17318	48591	15606	11888	24742	39781	2439	1567
Total		238945	287229	234232	250739	249525	250127	215457	222620

Uses of animals by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Non-recovery		21006	22774	22792	14016	10994	7599	5810	8310
Mild [up to and including]		132576	179508	123841	151794	121012	120714	106079	98250
Moderate		83215	80418	85837	82027	113407	118035	99904	111702
Severe		2148	4529	1762	2902	4112	3779	3664	4358
Total		238945	287229	234232	250739	249525	250127	215457	222620

Uses of animals by genetic status

Genetic status	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Not genetically altered		200508	245341	195240	212489	216774	212222	177466	181254
Genetically altered without a harmful phenotype		25432	28348	27228	28009	27295	31959	31849	34329
Genetically altered with a harmful phenotype		13005	13540	11764	10241	5456	5946	6142	7037
Total		238945	287229	234232	250739	249525	250127	215457	222620

Reuse of animals

Reuse ↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
No	236222	282448	231795	245638	244492	247827	212553	219089
Yes	2723	4781	2437	5101	5033	2300	2904	3531
Total	238945	287229	234232	250739	249525	250127	215457	222620

ALL USES OF ANIMALS BY SPECIES CATEGORY

Species category level 1

Species category	↑↓	2015	2016	2017	2018	2019	2020	2021	2022
Warm-blooded vertebrates		218742	235024	216414	234376	219880	201393	192059	198517
Cold-blooded vertebrates		20203	52205	17818	16363	29645	48734	23398	24103
Total		238945	287229	234232	250739	249525	250127	215457	222620

Species category level 2

Species category ↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Amphibians	90	86	336	2292	915	1198	879	629
Birds	2845	2105	874	2842	1708	1022	2001	766
Fish	19848	51899	17193	13916	28677	47512	22365	23388
Mammals	215897	232919	215540	231534	218172	200371	190058	197751
Reptiles	265	220	289	155	53	24	154	86
Total	238945	287229	234232	250739	249525	250127	215457	222620

Uses of mammals

Species	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Mice		150358	167976	160422	174511	159977	145890	138005	142779
Rats		48554	47573	38498	37280	37726	33349	25552	24696
Guinea-Pigs		2643	3362	2947	2659	3913	2249	1991	1434
Hamsters (Syrian)		172	152	282	292	6	111	239	163
Other rodents		86	4	3	13	33	0	12	0
Rabbits		1665	2370	2443	3116	2304	2344	4370	3029
Cats		59	18	0	3	1	6	3	0
Dogs		157	266	214	370	379	589	637	237
Ferrets		0	2	4	0	0	0	0	0
Other carnivores		886	627	1035	3347	3843	6128	0	1
Horses, donkeys and cross-breeds		115	328	119	181	51	16	52	41
Pigs		10572	8066	5801	7643	8643	8816	17222	23698
Goats		11	6	1	13	51	27	8	21
Sheep		47	37	66	78	18	67	41	48
Cattle		534	2077	3677	1999	1185	743	1898	1476
Prosimians		0	0	0	0	0	0	0	6
Baboons		0	0	0	0	0	0	0	5
Other mammals		38	55	28	29	42	36	28	117
Total		215897	232919	215540	231534	218172	200371	190058	197751

Uses of non-human primates

Species	↑↓	2022 ↑↓
Prosimians		6
Baboons		5
Total		11

Proportions of uses of non-human primates

Species	↑↓	2022 ↑↓
Prosimians		54.55%
Baboons		45.45%
Total		100%

USES OF ANIMALS BY MAIN CATEGORIES OF SCIENTIFIC PURPOSES

Uses of animals by main categories of scientific purposes

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Basic Research		83704	102808	79399	101815	91539	77596	77027	70955
Translational and applied research		123344	152999	121977	117026	127123	144032	115612	126824
Regulatory use and Routine production		22956	21532	19865	24225	20841	20426	14733	14264
Protection of the natural environment in the interests of the health or welfare of human beings or animals		2660	2792	2875	1598	4930	3329	2783	6179
Preservation of species		258	1491	5637	943	948	913	1167	605
Higher education or training for the acquisition, maintenance or improvement of vocational skills		6023	5547	4463	5132	4144	3831	0	0
Higher education		0	0	0	0	0	0	2526	2650
Training for the acquisition, maintenance or improvement of vocational skills		0	0	0	0	0	0	1571	1128
Forensic enquiries		0	60	16	0	0	0	38	15
Total		238945	287229	234232	250739	249525	250127	215457	222620

BASIC RESEARCH RELATED USES**Basic research related uses**

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Oncology		5165	6312	6469	22009	18505	10434	11329	11583
Cardiovascular Blood and Lymphatic System		4793	4789	4268	5251	3719	2979	3347	3792
Nervous System		11617	15927	18149	15611	17260	17525	15570	16324
Respiratory System		1262	1601	2444	2608	279	859	472	657
Gastrointestinal System including Liver		2479	4618	2478	3676	6345	7331	7176	4766
Musculoskeletal System		2560	2723	2462	2935	1447	1334	1080	516
Immune System		29147	19079	22727	25598	21078	16942	15894	12083
Urogenital/Reproductive System		2617	1538	2220	1119	1631	2396	2208	2019
Sensory Organs (skin, eyes and ears)		1503	876	77	401	386	522	501	649
Endocrine System/Metabolism		12509	13855	12359	11364	12212	14231	15198	12249
Developmental Biology		0	0	0	0	0	0	386	216
Multisystemic		883	949	485	215	2309	1995	2092	1792
Ethology / Animal Behaviour /Animal Biology		4906	25657	2363	6370	3669	659	1774	4297
Other basic research		4263	4884	2898	4658	2699	389	0	12
Total		83704	102808	79399	101815	91539	77596	77027	70955

TRANSLATIONAL AND APPLIED RESEARCH RELATED USES

Translational and applied research related uses

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Human Cancer		9107	27113	18429	8285	10162	18838	19036	19949
Human Infectious Disorders		4683	6632	7665	7899	9524	10334	9373	6955
Human Cardiovascular Disorders		1404	1786	2016	4200	4897	5010	4163	5158
Human Nervous and Mental Disorders		35559	34826	31340	27344	25481	20324	21327	21958
Human Respiratory Disorders		75	137	176	48	324	316	724	2461
Human Gastrointestinal Disorders including Liver		258	139	762	303	3081	2087	2285	2200
Human Musculoskeletal Disorders		400	401	378	398	736	862	957	1190
Human Immune Disorders		9959	7015	4959	2678	3583	4509	3683	5940
Human Urogenital/Reproductive Disorders		66	641	647	904	2531	2263	3307	5153
Human Sensory Organ Disorders (skin, eyes and ears)		852	453	336	126	288	358	1002	926
Human Endocrine/Metabolism Disorders		39839	40915	37015	44717	40466	31167	26427	29262
Other Human Disorders		9137	9135	9168	6537	2641	58	676	822
Animal Diseases and Disorders		7934	19732	5708	9314	20308	35931	7131	13821
Animal Nutrition		0	0	0	0	0	0	85	209
Animal Welfare		3248	2524	1568	2516	2203	9265	14249	9897
Diagnosis of diseases		682	884	1023	1231	772	870	271	133
Non-regulatory toxicology and ecotoxicology		141	666	787	526	126	1840	916	790
Total		123344	152999	121977	117026	127123	144032	115612	126824

ROUTINE PRODUCTION USES

Routine production uses

Purpose	↑↓	2015 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Blood based products		21	288	786	687	996	999	431
Monoclonal and polyclonal antibodies (excluding ascites method)		0	0	0	0	0	2876	2284
Other product types		0	456	0	34	110	111	47
Total		21	744	786	721	1106	3986	2762

REGULATORY USES

Regulatory uses

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Quality control (incl batch safety and potency testing)		14819	8833	8139	18545	13681	15544	8115	5241
Other efficacy and tolerance testing		95	113	725	619	1375	1091	63	0
Toxicity and other safety testing including pharmacology		8021	12586	10257	4275	5064	2685	2569	6261
Total		22935	21532	19121	23439	20120	19320	10747	11502

Regulatory uses by type of legislation

Type of legislation	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Food legislation including food contact material		0	0	0	0	9	0	154	0
Industrial chemicals legislation		1360	2458	2987	634	844	0	154	2920
Legislation on medicinal products for human use		19630	17000	16100	22525	19183	19314	10435	8235
Legislation on medicinal products for veterinary use and their residues		142	4	0	0	0	0	0	0
Medical devices legislation		3	0	0	0	24	6	4	347
Other legislation		1800	2070	34	280	60	0	0	0
Total		22935	21532	19121	23439	20120	19320	10747	11502

Regulatory uses by regulatory requirement

Type of requirement	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Legislation satisfying EU requirements		21113	19398	19021	23439	20116	19286	10660	11149
Legislation satisfying Non-EU requirements only		0	0	0	0	4	34	87	308
Legislation satisfying national requirements only [within EU]		1822	2134	100	0	0	0	0	45
Total		22935	21532	19121	23439	20120	19320	10747	11502

REGULATORY USES: QUALITY CONTROL (INCLUDING BATCH SAFETY AND POTENCY TESTING)**Regulatory uses: Quality control**

Purpose	↑↓	2015	2016	2017	2018	2019	2020	2021	2022
Batch safety testing		3687	3295	2504	3484	2470	2366	2250	1983
Batch potency testing		11105	5486	5601	15061	10272	13137	5193	3072
Other quality controls		27	52	34	0	939	41	672	186
Total		14819	8833	8139	18545	13681	15544	8115	5241

REGULATORY USES: TOXICITY AND OTHER SAFETY TESTING INCLUDING PHARMACOLOGY

Regulatory uses: Toxicity

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Acute and sub-acute		786	5366	3968	160	120	26	0	0
Skin irritation/corrosion		12	35	28	16	4	3	0	3
Skin sensitisation		138	80	177	118	74	32	0	49
Eye irritation/corrosion		6	0	0	0	0	0	0	0
Repeated dose toxicity		1755	1701	2205	2292	1612	1662	888	2135
Genotoxicity		0	0	0	0	22	0	44	132
Reproductive toxicity		0	0	935	480	35	0	0	0
Developmental toxicity		0	0	0	0	0	6	0	0
Kinetics		2095	267	818	361	510	205	427	166
Pharmaco-dynamics (incl safety pharmacology)		9	609	26	687	1386	751	902	530
Ecotoxicity		3080	4528	2100	154	1292	0	154	2883
Safety testing in food and feed area		0	0	0	0	9	0	154	0
Target animal safety		120	0	0	0	0	0	0	0
Other toxicity/safety testing		20	0	0	7	0	0	0	363
Total		8021	12586	10257	4275	5064	2685	2569	6261

REGULATORY USES : TOXICITY AND OTHER SAFETY TESTING INCLUDING PHARMACOLOGY: ACUTE AND SUB-ACUTE TOXICITY TESTING METHODS

Regulatory uses: Toxicity: Acute and sub-acute

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓
LD50, LC50		80	5366	3968	0	0	0
Non lethal methods		706	0	0	160	120	26
Total		786	5366	3968	160	120	26

REGULATORY USES: TOXICITY AND OTHER SAFETY TESTING INCLUDING PHARMACOLOGY: REPEATED DOSE TOXICITY**Regulatory uses: Toxicity: Repeated dose**

Purpose ↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
up to 28 days	1136	862	1382	1174	657	866	791	1346
29 - 90 days	488	229	586	895	651	502	97	243
> 90 days	131	610	237	223	304	294	0	546
Total	1755	1701	2205	2292	1612	1662	888	2135

REGULATORY USES: TOXICITY AND OTHER SAFETY TESTING INCLUDING PHARMACOLOGY: ECOTOXICITY

Regulatory uses: Toxicity: Ecotoxicity

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2021 ↑↓	2022 ↑↓
Acute toxicity		0	0	120	154	182	154	63
Chronic toxicity		3080	3030	1800	0	1110	0	2820
Endocrine activity		0	1440	0	0	0	0	0
Bioaccumulation		0	58	180	0	0	0	0
Total		3080	4528	2100	154	1292	154	2883