

SECTION 3: NUMBERS AND USES OF ANIMALS FOR THE CREATION AND MAINTENANCE OF GENETICALLY ALTERED ANIMALS (GAA) - TRENDS

Includes only 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

Severity: All

Custom severity: All

Method of tissue sampling: All

Severity of genotyping: All

NUMBERS OF ANIMALS USED FOR THE CREATION OF NEW GENETICALLY ALTERED ANIMAL LINES FOR THE FIRST TIME

Numbers of animals by species

Species	↑↓	2015	↑↓	2016	↑↓	2017	↑↓	2018	↑↓	2019	↑↓	2020	↑↓	2021	↑↓	2022	↑↓
Mice		8905		3995		4155		3773		3993		6366		11348		10450	
Rats		304		261		5		0		0		29		0		0	
Zebra fish		0		0		699		1139		1296		520		734		735	
Total		9209		4256		4859		4912		5289		6915		12082		11185	

USES OF ANIMALS FOR THE CREATION OF NEW GENETICALLY ALTERED ANIMAL LINES

Uses of animals by species

Species	↑↓	2015	↑↓	2016	↑↓	2017	↑↓	2018	↑↓	2019	↑↓	2020	↑↓	2021	↑↓	2022	↑↓
Mice		8905		3995		4155		3773		3993		6366		11348		10450	
Rats		304		261		5		0		0		29		0		0	
Zebra fish		0		0		699		1139		1296		520		734		735	
Total		9209		4256		4859		4912		5289		6915		12082		11185	

Uses of animals by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Non-recovery		507	290	347	272	59	532	161	218
Mild [up to and including]		7491	2262	2805	2845	4367	5381	10529	10401
Moderate		1131	1588	1694	1794	860	972	1350	564
Severe		80	116	13	1	3	30	42	2
Total		9209	4256	4859	4912	5289	6915	12082	11185

Proportions of uses of animals by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Non-recovery		5.51%	6.81%	7.14%	5.54%	1.12%	7.69%	1.33%	1.95%
Mild [up to and including]		81.34%	53.15%	57.73%	57.92%	82.57%	77.82%	87.15%	92.99%
Moderate		12.28%	37.31%	34.86%	36.52%	16.26%	14.06%	11.17%	5.04%
Severe		0.87%	2.73%	0.27%	0.02%	0.06%	0.43%	0.35%	0.02%
Total		100%	100%	100%	100%	100%	100%	100%	100%

Uses of animals by genetic status

Genetic status	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Not genetically altered		5049	1885	1607	2007	2031	3090	3028	2529
Genetically altered without a harmful phenotype		3964	2021	2756	2758	2937	2837	8229	7899
Genetically altered with a harmful phenotype		196	350	496	147	321	988	825	757
Total		9209	4256	4859	4912	5289	6915	12082	11185

Proportions of uses of animals by genetic status

Genetic status	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Not genetically altered		54.83%	44.29%	33.07%	40.86%	38.4%	44.69%	25.06%	22.61%
Genetically altered without a harmful phenotype		43.04%	47.49%	56.72%	56.15%	55.53%	41.03%	68.11%	70.62%
Genetically altered with a harmful phenotype		2.13%	8.22%	10.21%	2.99%	6.07%	14.29%	6.83%	6.77%
Total		100%	100%	100%	100%	100%	100%	100%	100%

Reuse of animals

Reuse ↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
No	9209	4256	4859	4912	5289	6915	12082	11185
Total	9209	4256	4859	4912	5289	6915	12082	11185

Proportions of reuse of animals

Reuse ↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
No	100%	100%	100%	100%	100%	100%	100%	100%
Total	100%	100%	100%	100%	100%	100%	100%	100%

BASIC RESEARCH USES OF ANIMALS FOR THE CREATION OF NEW GENETICALLY ALTERED ANIMAL LINES**Basic research uses**

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Oncology		3546	535	262	115	337	30	236	0
Cardiovascular Blood and Lymphatic System		253	356	47	17	10	652	76	554
Nervous System		610	628	1522	662	1025	1909	1788	742
Gastrointestinal System including Liver		195	0	0	69	147	1359	4040	6856
Musculoskeletal System		0	0	0	0	3	183	0	0
Immune System		41	23	699	1219	1905	882	692	684
Urogenital/Reproductive System		172	0	0	0	353	338	0	4
Sensory Organs (skin, eyes and ears)		0	0	0	0	0	0	167	23
Endocrine System/Metabolism		2717	1231	487	431	170	43	304	20
Multisystemic		1276	866	1582	1540	672	165	1516	1637
Other basic research		35	0	54	0	0	0	0	0
Total		8845	3639	4653	4053	4622	5561	8819	10520

Basic research uses by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Non-recovery		506	278	343	187	58	509	138	200
Mild [up to and including]		7391	1916	2728	2361	3887	4231	7485	9819
Moderate		868	1419	1578	1504	674	791	1194	499
Severe		80	26	4	1	3	30	2	2
Total		8845	3639	4653	4053	4622	5561	8819	10520

Proportions of basic research uses by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Non-recovery		5.72%	7.64%	7.37%	4.61%	1.25%	9.15%	1.56%	1.9%
Mild [up to and including]		83.56%	52.65%	58.63%	58.25%	84.1%	76.08%	84.87%	93.34%
Moderate		9.81%	38.99%	33.91%	37.11%	14.58%	14.22%	13.54%	4.74%
Severe		0.9%	0.71%	0.09%	0.02%	0.06%	0.54%	0.02%	0.02%
Total		100%	100%	100%	100%	100%	100%	100%	100%

TRANSLATIONAL AND APPLIED RESEARCH USES OF ANIMALS FOR THE CREATION OF NEW GENETICALLY ALTERED ANIMAL LINES**Translational and applied research uses**

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Human Cancer		0	0	0	148	0	0	22	0
Human Infectious Disorders		0	0	0	314	0	0	0	0
Human Cardiovascular Disorders		1	0	0	13	353	394	234	109
Human Nervous and Mental Disorders		0	0	124	77	0	0	76	0
Human Gastrointestinal Disorders including Liver		0	0	0	0	0	40	32	0
Human Immune Disorders		0	0	0	307	0	0	0	0
Human Sensory Organ Disorders (skin, eyes and ears)		344	617	7	0	0	2	356	366
Human Endocrine/Metabolism Disorders		19	0	71	0	314	375	1915	156
Other Human Disorders		0	0	4	0	0	543	628	34
Total		364	617	206	859	667	1354	3263	665

Translational and applied research uses by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Non-recovery		1	12	4	85	1	23	23	18
Mild [up to and including]		100	346	77	484	480	1150	3044	582
Moderate		263	169	116	290	186	181	156	65
Severe		0	90	9	0	0	0	40	0
Total		364	617	206	859	667	1354	3263	665

Proportions of translational and applied research uses by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Non-recovery		0.27%	1.94%	1.94%	9.9%	0.15%	1.7%	0.7%	2.71%
Mild [up to and including]		27.47%	56.08%	37.38%	56.34%	71.96%	84.93%	93.29%	87.52%
Moderate		72.25%	27.39%	56.31%	33.76%	27.89%	13.37%	4.78%	9.77%
Severe		0%	14.59%	4.37%	0%	0%	0%	1.23%	0%
Total		100%	100%	100%	100%	100%	100%	100%	100%

NUMBERS OF ANIMALS USED FOR THE MAINTENANCE OF GENETICALLY ALTERED ANIMAL LINES FOR THE FIRST TIME**Numbers of animals by species**

Species ↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Mice	562	466	215	285	276	95	35	209
Zebra fish	368	0	0	0	0	0	0	0
Total	930	466	215	285	276	95	35	209

USES OF ANIMALS FOR THE MAINTENANCE OF GENETICALLY ALTERED ANIMAL LINES**Uses of animals by species**

Species ↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Mice	562	466	215	285	276	95	35	209
Zebra fish	368	0	0	0	0	0	0	0
Total	930	466	215	285	276	95	35	209

Uses of animals by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Mild [up to and including]		347	323	207	196	91	32	14	40
Moderate		583	140	8	89	185	63	21	168
Severe		0	3	0	0	0	0	0	1
Total		930	466	215	285	276	95	35	209

Proportions of uses of animals by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Mild [up to and including]		37.31%	69.31%	96.28%	68.77%	32.97%	33.68%	40%	19.14%
Moderate		62.69%	30.04%	3.72%	31.23%	67.03%	66.32%	60%	80.38%
Severe		0%	0.64%	0%	0%	0%	0%	0%	0.48%
Total		100%	100%	100%	100%	100%	100%	100%	100%

Uses of animals by genetic status

Genetic status	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Not genetically altered		0	0	3	37	1	24	0	0
Genetically altered without a harmful phenotype		24	0	179	102	96	4	14	72
Genetically altered with a harmful phenotype		906	466	33	146	179	67	21	137
Total		930	466	215	285	276	95	35	209

Proportions of uses of animals by genetic status

Genetic status	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Not genetically altered		0%	0%	1.4%	12.98%	0.36%	25.26%	0%	0%
Genetically altered without a harmful phenotype		2.58%	0%	83.26%	35.79%	34.78%	4.21%	40%	34.45%
Genetically altered with a harmful phenotype		97.42%	100%	15.35%	51.23%	64.86%	70.53%	60%	65.55%
Total		100%	100%	100%	100%	100%	100%	100%	100%

Reuse of animals

Genetic status ↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
No	930	466	215	285	276	95	35	209
Total	930	466	215	285	276	95	35	209

Proportions of reuse of animals

Reuse ↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
No	100%	100%	100%	100%	100%	100%	100%	100%
Total	100%	100%	100%	100%	100%	100%	100%	100%