

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 ↑↓
Mice		8905	3995	4155	3773	3993	6366	11348
Rats		304	261	5	0	0	29	0
Zebra fish		0	0	699	1139	1296	520	734
Total		9209	4256	4859	4912	5289	6915	12082

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	↑↓
Mice		8905		3995		4155		3773		3993		6366		11348	
Rats		304		261		5		0		0		29		0	
Zebra fish		0		0		699		1139		1296		520		734	
Total		9209		4256		4859		4912		5289		6915		12082	

Uses of animals by severity

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

Proportions of uses of animals by severity

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

Uses of animals by genetic status

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

Proportions of uses of animals by genetic status

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

Reuse of animals

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

Proportions of reuse of animals

Reuse	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓
No		100%	100%	100%	100%	100%	100%	100%
Total		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 ↑↓
Oncology		3546	535	262	115	337	30	236
Cardiovascular Blood and Lymphatic System		253	356	47	17	10	652	76
Nervous System		610	628	1522	662	1025	1909	1788
Gastrointestinal System including Liver		195	0	0	69	147	1359	4040
Musculoskeletal System		0	0	0	0	3	183	0
Immune System		41	23	699	1219	1905	882	692
Urogenital/Reproductive System		172	0	0	0	353	338	0
Sensory Organs (skin, eyes and ears)		0	0	0	0	0	0	167
Endocrine System/Metabolism		2717	1231	487	431	170	43	304
Multisystemic		1276	866	1582	1540	672	165	1516
Other basic research		35	0	54	0	0	0	0
Total		8845	3639	4653	4053	4622	5561	8819

Basic research uses by severity

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

Proportions of basic research uses by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓
Non-recovery		5.72%	7.64%	7.37%	4.61%	1.25%	9.15%	1.56%
Mild [up to and including]		83.56%	52.65%	58.63%	58.25%	84.1%	76.08%	84.87%
Moderate		9.81%	38.99%	33.91%	37.11%	14.58%	14.22%	13.54%
Severe		0.9%	0.71%	0.09%	0.02%	0.06%	0.54%	0.02%
Total		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 ↑↓
Human Cancer		0	0	0	148	0	0	22
Human Infectious Disorders		0	0	0	314	0	0	0
Human Cardiovascular Disorders		1	0	0	13	353	394	234
Human Nervous and Mental Disorders		0	0	124	77	0	0	76
Human Gastrointestinal Disorders including Liver		0	0	0	0	0	40	32
Human Immune Disorders		0	0	0	307	0	0	0
Human Sensory Organ Disorders (skin, eyes and ears)		344	617	7	0	0	2	356
Human Endocrine/Metabolism Disorders		19	0	71	0	314	375	1915
Other Human Disorders		0	0	4	0	0	543	628
Total		364	617	206	859	667	1354	3263

Translational and applied research uses by severity

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

Proportions of translational and applied research uses by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓
Non-recovery		0.27%	1.94%	1.94%	9.9%	0.15%	1.7%	0.7%
Mild [up to and including]		27.47%	56.08%	37.38%	56.34%	71.96%	84.93%	93.29%
Moderate		72.25%	27.39%	56.31%	33.76%	27.89%	13.37%	4.78%
Severe		0%	14.59%	4.37%	0%	0%	0%	1.23%
Total		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 ↑↓
Mice		562	466	215	285	276	95	35
Zebra fish		368	0	0	0	0	0	0
Total		930	466	215	285	276	95	35

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

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

Uses of animals by severity

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

Proportions of uses of animals by severity

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

Uses of animals by genetic status

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

Proportions of uses of animals by genetic status

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

Reuse of animals

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

Proportions of reuse of animals

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