

## 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		40580	53378	48631	47499	48855	54809	52874	50238
Rats		15672	15036	13467	10951	9960	10458	9845	8966
Guinea-Pigs		50	10	9	1	2	8	4	0
Hamsters (Syrian)		197	273	149	72	180	64	415	274
Other rodents		0	1364	690	2539	2315	4745	2018	1972
Rabbits		213	237	227	186	160	92	44	89
Cats		100	259	311	218	178	138	142	182
Dogs		2619	3961	3061	6297	2196	1283	1918	1209
Other carnivores		270	18	107	35	91	160	413	493
Horses, donkeys and cross-breeds		48	76	77	236	45	114	74	101
Pigs		479	611	632	958	919	772	448	385
Sheep		1128	1350	1319	1348	1243	692	625	564
Cattle		87	541	216	190	272	219	608	399
Other mammals		2880	103	1533	319	119	134	150	169
Domestic fowl		3646	8411	8485	5468	2785	5039	479	2393
Turkey		0	0	0	0	0	0	1	1
Other birds		717	501	404	1063	1296	1082	742	485
Reptiles		0	0	0	30	0	0	0	0
Rana		10	2	0	0	0	0	0	0
Other amphibians		0	0	0	77	0	5	250	157
Zebra fish		10453	7483	6454	7339	8784	6062	7411	8668
Salmon, trout, chars and graylings		0	0	0	0	0	0	14006	4172
Other fish		7529	7279	11729	20700	13492	27100	302	1339
<b>Total</b>		<b>86678</b>	<b>100893</b>	<b>97501</b>	<b>105526</b>	<b>92892</b>	<b>112976</b>	<b>92769</b>	<b>82256</b>

## Uses of animals by severity

Severity	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Non-recovery		4470	8908	8735	11048	4066	5107	6443	5590
Mild [up to and including]		45570	53017	46758	54237	52840	62222	55326	44034
Moderate		31105	30069	33282	33382	29618	40884	26313	29231
Severe		5533	8899	8726	6859	6368	4763	4687	3401
<b>Total</b>		<b>86678</b>	<b>100893</b>	<b>97501</b>	<b>105526</b>	<b>92892</b>	<b>112976</b>	<b>92769</b>	<b>82256</b>

**Proportions of uses of animals by severity**

<b>Severity</b>	↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Non-recovery		5.16%	8.83%	8.96%	10.47%	4.38%	4.52%	6.95%	6.8%
Mild [up to and including]		52.57%	52.55%	47.96%	51.4%	56.88%	55.08%	59.64%	53.53%
Moderate		35.89%	29.8%	34.14%	31.63%	31.88%	36.19%	28.36%	35.54%
Severe		6.38%	8.82%	8.95%	6.5%	6.86%	4.22%	5.05%	4.13%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Uses of animals by genetic status**

<b>Genetic status</b>	↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Not genetically altered		64285	73075	71470	81147	66596	87015	64266	55520
Genetically altered without a harmful phenotype		18016	20099	17743	19274	21149	20665	22834	22165
Genetically altered with a harmful phenotype		4377	7719	8288	5105	5147	5296	5669	4571
<b>Total</b>		<b>86678</b>	<b>100893</b>	<b>97501</b>	<b>105526</b>	<b>92892</b>	<b>112976</b>	<b>92769</b>	<b>82256</b>

**Proportions of uses of animals by genetic status**

<b>Genetic status</b>	↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Not genetically altered		74.17%	72.43%	73.3%	76.9%	71.69%	77.02%	69.28%	67.5%
Genetically altered without a harmful phenotype		20.78%	19.92%	18.2%	18.26%	22.77%	18.29%	24.61%	26.95%
Genetically altered with a harmful phenotype		5.05%	7.65%	8.5%	4.84%	5.54%	4.69%	6.11%	5.56%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## Reuse of animals

Reuse	↑↓	2015	↑↓	2016	↑↓	2017	↑↓	2018	↑↓	2019	↑↓	2020	↑↓	2021	↑↓	2022	↑↓
No		85916		100148		97352		105176		92455		112415		91759		81490	
Yes		762		745		149		350		437		561		1010		766	
<b>Total</b>		<b>86678</b>		<b>100893</b>		<b>97501</b>		<b>105526</b>		<b>92892</b>		<b>112976</b>		<b>92769</b>		<b>82256</b>	

**Proportions of reuse of animals**

<b>Reuse</b> ↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
No	99.12%	99.26%	99.85%	99.67%	99.53%	99.5%	98.91%	99.07%
Yes	0.88%	0.74%	0.15%	0.33%	0.47%	0.5%	1.09%	0.93%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



**ALL USES OF ANIMALS BY SPECIES CATEGORY****Species category level 1**

<b>Species category</b> ↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Cold-blooded vertebrates	17992	14764	18183	28146	22276	33167	21969	14336
Warm-blooded vertebrates	68686	86129	79318	77380	70616	79809	70800	67920
<b>Total</b>	<b>86678</b>	<b>100893</b>	<b>97501</b>	<b>105526</b>	<b>92892</b>	<b>112976</b>	<b>92769</b>	<b>82256</b>

**Proportions of species category level 1**

<b>Species category</b> ↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Cold-blooded vertebrates	20.76%	14.63%	18.65%	26.67%	23.98%	29.36%	23.68%	17.43%
Warm-blooded vertebrates	79.24%	85.37%	81.35%	73.33%	76.02%	70.64%	76.32%	82.57%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## Species category level 2

Species category <sup>↑↓</sup>	2015 <sup>↑↓</sup>	2016 <sup>↑↓</sup>	2017 <sup>↑↓</sup>	2018 <sup>↑↓</sup>	2019 <sup>↑↓</sup>	2020 <sup>↑↓</sup>	2021 <sup>↑↓</sup>	2022 <sup>↑↓</sup>
Amphibians	10	2	0	77	0	5	250	157
Birds	4363	8912	8889	6531	4081	6121	1222	2879
Fish	17982	14762	18183	28039	22276	33162	21719	14179
Mammals	64323	77217	70429	70849	66535	73688	69578	65041
Reptiles	0	0	0	30	0	0	0	0
<b>Total</b>	<b>86678</b>	<b>100893</b>	<b>97501</b>	<b>105526</b>	<b>92892</b>	<b>112976</b>	<b>92769</b>	<b>82256</b>

## Proportions of species category level 2

Species category <sup>↑↓</sup>	2015 <sup>↑↓</sup>	2016 <sup>↑↓</sup>	2017 <sup>↑↓</sup>	2018 <sup>↑↓</sup>	2019 <sup>↑↓</sup>	2020 <sup>↑↓</sup>	2021 <sup>↑↓</sup>	2022 <sup>↑↓</sup>
Amphibians	0.01%	0%	0%	0.07%	0%	0%	0.27%	0.19%
Birds	5.03%	8.83%	9.12%	6.19%	4.39%	5.42%	1.32%	3.5%
Fish	20.75%	14.63%	18.65%	26.57%	23.98%	29.35%	23.41%	17.24%
Mammals	74.21%	76.53%	72.23%	67.14%	71.63%	65.22%	75%	79.07%
Reptiles	0%	0%	0%	0.03%	0%	0%	0%	0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## Uses of mammals

Species	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Mice		40580	53378	48631	47499	48855	54809	52874	50238
Rats		15672	15036	13467	10951	9960	10458	9845	8966
Guinea-Pigs		50	10	9	1	2	8	4	0
Hamsters (Syrian)		197	273	149	72	180	64	415	274
Other rodents		0	1364	690	2539	2315	4745	2018	1972
Rabbits		213	237	227	186	160	92	44	89
Cats		100	259	311	218	178	138	142	182
Dogs		2619	3961	3061	6297	2196	1283	1918	1209
Other carnivores		270	18	107	35	91	160	413	493
Horses, donkeys and cross-breeds		48	76	77	236	45	114	74	101
Pigs		479	611	632	958	919	772	448	385
Sheep		1128	1350	1319	1348	1243	692	625	564
Cattle		87	541	216	190	272	219	608	399
Other mammals		2880	103	1533	319	119	134	150	169
<b>Total</b>		<b>64323</b>	<b>77217</b>	<b>70429</b>	<b>70849</b>	<b>66535</b>	<b>73688</b>	<b>69578</b>	<b>65041</b>

## Proportions of uses of mammals

Species	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Mice		63.09%	69.13%	69.05%	67.04%	73.43%	74.38%	75.99%	77.24%
Rats		24.36%	19.47%	19.12%	15.46%	14.97%	14.19%	14.15%	13.79%
Guinea-Pigs		0.08%	0.01%	0.01%	0%	0%	0.01%	0.01%	0%
Hamsters (Syrian)		0.31%	0.35%	0.21%	0.1%	0.27%	0.09%	0.6%	0.42%
Other rodents		0%	1.77%	0.98%	3.58%	3.48%	6.44%	2.9%	3.03%
Rabbits		0.33%	0.31%	0.32%	0.26%	0.24%	0.12%	0.06%	0.14%
Cats		0.16%	0.34%	0.44%	0.31%	0.27%	0.19%	0.2%	0.28%
Dogs		4.07%	5.13%	4.35%	8.89%	3.3%	1.74%	2.76%	1.86%
Other carnivores		0.42%	0.02%	0.15%	0.05%	0.14%	0.22%	0.59%	0.76%
Horses, donkeys and cross-breeds		0.07%	0.1%	0.11%	0.33%	0.07%	0.15%	0.11%	0.16%
Pigs		0.74%	0.79%	0.9%	1.35%	1.38%	1.05%	0.64%	0.59%
Sheep		1.75%	1.75%	1.87%	1.9%	1.87%	0.94%	0.9%	0.87%
Cattle		0.14%	0.7%	0.31%	0.27%	0.41%	0.3%	0.87%	0.61%
Other mammals		4.48%	0.13%	2.18%	0.45%	0.18%	0.18%	0.22%	0.26%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

### Uses of non-human primates

Species	↑↓
No data available in table	

### Proportions of uses of non-human primates

Species	↑↓
No data available in table	



## 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		53378	52105	54625	58571	54268	63641	52247	39636
Translational and applied research		25270	39974	33315	37275	32823	44065	34578	35247
Regulatory use and Routine production		5364	7026	7895	7481	3754	4210	2474	1933
Protection of the natural environment in the interests of the health or welfare of human beings or animals		1455	0	0	0	0	0	0	300
Preservation of species		41	35	60	46	76	0	20	52
Higher education or training for the acquisition, maintenance or improvement of vocational skills		1170	1753	1606	2153	1971	1060	0	0
Higher education		0	0	0	0	0	0	334	942
Training for the acquisition, maintenance or improvement of vocational skills		0	0	0	0	0	0	3116	4146
<b>Total</b>		<b>86678</b>	<b>100893</b>	<b>97501</b>	<b>105526</b>	<b>92892</b>	<b>112976</b>	<b>92769</b>	<b>82256</b>

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

<b>Purpose</b>	↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Oncology		3983	3677	6529	3499	5932	6369	6461	5757
Cardiovascular Blood and Lymphatic System		5000	4831	5098	3453	2896	7794	7343	5590
Nervous System		13921	13692	10383	8598	9768	9087	7459	6900
Respiratory System		0	258	80	150	872	314	271	1330
Gastrointestinal System including Liver		363	501	545	419	1632	1219	1176	956
Musculoskeletal System		701	562	337	557	54	187	79	226
Immune System		10074	8772	10325	11553	5120	2639	4497	5078
Urogenital/Reproductive System		328	524	181	4985	6815	14525	1193	752
Sensory Organs (skin, eyes and ears)		1223	310	268	481	1497	944	763	993
Endocrine System/Metabolism		1283	1383	900	2268	2588	3887	1900	1951
Developmental Biology		0	0	0	0	0	0	21	10
Multisystemic		6836	9673	6005	8641	7701	4667	3901	3641
Ethology / Animal Behaviour /Animal Biology		9425	7376	7546	12417	8948	11731	8243	3637
Other basic research		241	546	6428	1550	445	278	8940	2815
<b>Total</b>		<b>53378</b>	<b>52105</b>	<b>54625</b>	<b>58571</b>	<b>54268</b>	<b>63641</b>	<b>52247</b>	<b>39636</b>

**TRANSLATIONAL AND APPLIED RESEARCH RELATED USES****Translational and applied research related uses**

<b>Purpose</b>	↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Human Cancer		2375	3325	5016	4177	3243	3564	3707	3906
Human Infectious Disorders		0	995	860	2481	907	854	1769	2430
Human Cardiovascular Disorders		603	676	662	671	648	462	465	504
Human Nervous and Mental Disorders		15878	20831	19579	17395	17893	19968	16926	13714
Human Respiratory Disorders		62	0	0	0	0	0	12	84
Human Gastrointestinal Disorders including Liver		24	74	117	74	59	182	61	1118
Human Musculoskeletal Disorders		16	1204	605	346	876	522	254	734
Human Immune Disorders		24	0	71	264	390	275	439	173
Human Urogenital/Reproductive Disorders		0	0	8	42	2	18	170	111
Human Sensory Organ Disorders (skin, eyes and ears)		893	1552	470	2462	2243	2524	2433	3501
Human Endocrine/Metabolism Disorders		66	386	371	1066	621	697	1658	1587
Other Human Disorders		23	586	755	198	1226	1648	2688	2917
Animal Diseases and Disorders		4593	9869	4384	6946	3818	10473	3144	2800
Animal Nutrition		0	0	0	0	0	0	335	1459
Animal Welfare		444	199	226	133	302	234	118	56
Diagnosis of diseases		127	89	123	459	318	439	253	120
Non-regulatory toxicology and ecotoxicology		142	188	68	561	277	2205	146	33
<b>Total</b>		<b>25270</b>	<b>39974</b>	<b>33315</b>	<b>37275</b>	<b>32823</b>	<b>44065</b>	<b>34578</b>	<b>35247</b>

## ROUTINE PRODUCTION USES

### Routine production uses

Purpose	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Blood based products		0	317	296	1476	1196	866	311	241
Monoclonal and polyclonal antibodies (excluding ascites method)		0	0	0	0	0	0	465	446
Other product types		1250	1140	1180	0	0	6	0	0
<b>Total</b>		<b>1250</b>	<b>1457</b>	<b>1476</b>	<b>1476</b>	<b>1196</b>	<b>872</b>	<b>776</b>	<b>687</b>

**REGULATORY USES****Regulatory uses**

<b>Purpose</b>	↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Quality control (incl batch safety and potency testing)		1576	2645	3395	4478	1425	1276	171	150
Other efficacy and tolerance testing		0	8	156	218	70	12	0	0
Toxicity and other safety testing including pharmacology		2538	2916	2868	1309	1063	2050	1527	1096
<b>Total</b>		<b>4114</b>	<b>5569</b>	<b>6419</b>	<b>6005</b>	<b>2558</b>	<b>3338</b>	<b>1698</b>	<b>1246</b>

## Regulatory uses by type of legislation

Type of legislation	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Feed legislation including legislation for the safety of target animals, workers and environment		0	0	32	47	0	0	0	0
Legislation on medicinal products for human use		2458	2875	2992	1349	2542	3312	1641	1232
Legislation on medicinal products for veterinary use and their residues		1656	2694	3395	4609	16	26	57	14
<b>Total</b>		<b>4114</b>	<b>5569</b>	<b>6419</b>	<b>6005</b>	<b>2558</b>	<b>3338</b>	<b>1698</b>	<b>1246</b>

## Proportions of regulatory uses by type of legislation

Type of legislation	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Feed legislation including legislation for the safety of target animals, workers and environment		0%	0%	0.5%	0.78%	0%	0%	0%	0%
Legislation on medicinal products for human use		59.75%	51.63%	46.61%	22.46%	99.37%	99.22%	96.64%	98.88%
Legislation on medicinal products for veterinary use and their residues		40.25%	48.37%	52.89%	76.75%	0.63%	0.78%	3.36%	1.12%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Regulatory uses by regulatory requirement**

Type of requirement	↑↓	2015 ↑↓	2016 ↑↓	2017 ↑↓	2018 ↑↓	2019 ↑↓	2020 ↑↓	2021 ↑↓	2022 ↑↓
Legislation satisfying EU requirements		4114	5569	6419	6005	2558	3338	1698	1246
<b>Total</b>		<b>4114</b>	<b>5569</b>	<b>6419</b>	<b>6005</b>	<b>2558</b>	<b>3338</b>	<b>1698</b>	<b>1246</b>



**Proportions of regulatory uses by regulatory requirement**

<b>Type of requirement</b>	↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Legislation satisfying EU requirements		100%	100%	100%	100%	100%	100%	100%	100%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

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

<b>Purpose</b> ↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Batch safety testing	0	0	0	4478	1425	1276	171	150
Batch potency testing	1576	2645	3395	0	0	0	0	0
<b>Total</b>	<b>1576</b>	<b>2645</b>	<b>3395</b>	<b>4478</b>	<b>1425</b>	<b>1276</b>	<b>171</b>	<b>150</b>

**REGULATORY USES: TOXICITY AND OTHER SAFETY TESTING INCLUDING PHARMACOLOGY****Regulatory uses: Toxicity**

<b>Purpose</b>	↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
Acute and sub-acute		50	49	0	15	10	0	0	0
Skin irritation/corrosion		10	0	0	0	0	0	0	0
Skin sensitisation		40	0	0	0	0	0	0	0
Repeated dose toxicity		94	196	134	102	26	220	195	143
Kinetics		590	850	1171	259	396	1709	1201	920
Pharmaco-dynamics (incl safety pharmacology)		1754	1821	1556	933	631	121	131	33
Other toxicity/safety testing		0	0	7	0	0	0	0	0
<b>Total</b>		<b>2538</b>	<b>2916</b>	<b>2868</b>	<b>1309</b>	<b>1063</b>	<b>2050</b>	<b>1527</b>	<b>1096</b>

**REGULATORY USES : TOXICITY AND OTHER SAFETY TESTING INCLUDING PHARMACOLOGY: ACUTE AND SUB-ACUTE TOXICITY TESTING METHODS****Regulatory uses: Toxicity: Acute and sub-acute**

<b>Purpose</b>	↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓
LD50, LC50		0	9	0	0
Other lethal methods		0	0	0	10
Non lethal methods		50	40	15	0
<b>Total</b>		<b>50</b>	<b>49</b>	<b>15</b>	<b>10</b>

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

<b>Purpose</b> ↑↓	<b>2015</b> ↑↓	<b>2016</b> ↑↓	<b>2017</b> ↑↓	<b>2018</b> ↑↓	<b>2019</b> ↑↓	<b>2020</b> ↑↓	<b>2021</b> ↑↓	<b>2022</b> ↑↓
up to 28 days	94	100	134	0	26	220	195	143
29 - 90 days	0	0	0	6	0	0	0	0
> 90 days	0	96	0	96	0	0	0	0
<b>Total</b>	<b>94</b>	<b>196</b>	<b>134</b>	<b>102</b>	<b>26</b>	<b>220</b>	<b>195</b>	<b>143</b>

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

### Regulatory uses: Toxicity: Ecotoxicity

Purpose	↑↓
No data available in table	