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Editorial

The AALAS Journals: 2022 in Review

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The November 2022 issue of the *Journal of the American Association for Laboratory Animal Science (JAALAS)* volume 61 and the December 2022 issue of *Comparative Medicine* (*CM*) volume 72 mark the end of another year for the AALAS journals. As always, we thank our talented and conscientious support team: graphic artists Brenda Johnson and Zara Garza, scientific editors Amy Frazier and Ashley Vaughn, and editorial production coordinator, Alison Brown. This team continues to sustain a timely flow of professionally presented information through the entire process from manuscript submission to publication. We also thank members of the Editorial Review Board (ERB) for their support in providing timely thorough reviews and solid feedback and suggestions to improve the journals.

Publication statistics for the journals remain relatively steady (Tables 1 and 2). Acceptance rates in 2022 were 40% for *CM* and 67% for *JAALAS*, similar to those of previous years. The intervals between submission and the first and final decisions on manuscripts were 4 and 6 wk, respectively, for *CM* and 5 and 10 wk, respectively, for *JAALAS*. These represent a considerable reduction in review time for both journals as compared with 2021, perhaps because of less interference from COVID-related factors for both authors and reviewers. The processing times from acceptance and submission to online publication were approximately 13 and 19 wk for *CM* and 13 and 22 wk for *JAALAS*. These durations are considerably shorter than they were in 2021, probably due at least in part to our new workflow in which articles undergo tooling, editing, and online publication as soon as possible after acceptance, rather than our previous practice of delaying that process until preparation of the issue to which the article was assigned. Articles are now assigned to issues in order of completed preparation.

Although we are trying to further reduce the submission-to-online interval in 2023, some delays are in the hands of authors, who may take considerable time to make corrections or require a second round of editing due to unanswered queries. We therefore ask for and indeed depend on timely responses from editors, reviewers and authors to speed the review and publication processes. However, our calculated average intervals for all 4 measures (submission to first decision, submission to second decision, acceptance to online, and submission to online) are undoubtedly skewed upward due outliers (authors and reviewers who do not respond in a timely manner). The data

Table 1: Annual statistics for *Comparative Medicine*

	Year of Publication									
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2202**
Total submissions	167	136	155	140	129	142	119	117	112	128
International submissions	88	67	85	59	73	71	58	71	64	79
Rejected	72	75	71	54	62	65	61	77	62	71
Withdrawn	6	1	1	3	3	1	0	1	1	0
Transferred to *JAALAS*	23	13	14	12	15	14	9	6	4	5
Total R-W-T	101	89	88	69	80	80	70	84	65	76
Accepted manuscripts	64	45	72	53	58	52	59	27	46	48
Total accepted and rejected	136	120	143	107	120	117	120	104	108	119
Acceptance rate	47%	38%	50%	50%	48%	44%	49%	26%	43%	40%
Manuscripts printed	60	58	59	62	60	57	54	55	45	41
Total pages printed	548	516	552	512	540	502	578	550	520	420
Manuscript pages printed	542	506	545	502	447	435	521	487	482	388
Submission to 1st decision (wk)	3	4	4	4	4	4	4	4	4	4
Submission to final decision (wk)	6	7	7	8	8	7	7	6	8	6
Acceptance to online (wk)	NA	NA	NA	NA	NA	NA	23	24	10	13
Submission to online (wk)	NA	NA	NA	NA	NA	NA	29	30	18	19
Impact factor (2 y)	NA	0.74	1.00	0.83	0.59	0.70	1.07	0.98	1.57	NA
Impact factor (5 y)	NA	NA	NA	NA	NA	NA	NA	1.35	1.59	NA

Table 2: Annual statistics for *JAALAS*

	Year of Publication									
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2202**
Total submissions	179	186	187	162	163	44	170	160	135	120
International submissions	74	74	81	60	64	62	70	55	59	49
Rejected	80	62	62	60	50	43	60	54	36	27
Withdrawn	3	4	5	0	3	1	2	2	3	3
Transferred to *CM*	17	25	31	6	19	23	17	25	25	25
Total R-W-T	100	91	98	96	72	67	79	81	64	56
Accepted manuscripts	80	92	75	75	77	84	74	90	67	54
Total accepted and rejected	160	154	137	135	127	127	134	144	103	81
Acceptance rate	50%	60%	55%	56%	61%	66%	55%	62%	65%	67%
Manuscripts printed	70	75	82	90	82	68	76	78	81	66
Total pages printed	816	742	820	844	807	737	828	749	708	601
Manuscript pages printed	465	512	581	590	581	517	559	618	650	544
Submission to 1st decision (wk)	4	5	5	5	5	5	4	6	6	5
Submission to final decision (wk)	8	11	8	9	10	9	8	13	14	10
Acceptance to online (wk)	NA	NA	NA	NA	NA	NA	24	20	20	13
Submission to online (wk)	NA	NA	NA	NA	NA	NA	32	33	34	23
Impact factor (2 yr)	NA	1.12	0.91	1/20	1.22	1.02	1.24	1.23	1.71	NA
Impact factor (5 yr)	NA	NA	NA	NA	NA	NA	NA	2.07	1.81	NA

needed to confirm this possibility is not readily available in our databases and would be difficult for us to obtain.

This year is the first in which both journals had both 2- and 5-y impact factors (IF) that were greater than 1. The 2021 2- and 5-y impact factors were, respectively, 1.57 and 1.59 for *CM* and 1.71 and 1.81 for *JAALAS*. The 2022 IF are not yet available, but now we can look toward 2 as a goal. IF is calculated as the ratio of the total number of citations a journal receives in a given year, divided by the total number of citable items published in the 2 previous years, or, for the 5-y IF, divided by the total number of citable items published in the previous 5 y. So, for example, if a journal has 1,000 citations in 2000 and published a total of 50 articles per year in each of the preceding 5 years, the 2-y IF would be 1,000÷100 (10) and the 5-y IF would be 1,000÷250, or 4. In general, the 2-y IF indicates immediacy of interest, and the 5-y IF indicates duration of interest. Beginning in 2022, citable items will include online content, even if that content has not yet been formally published. This change will probably reduce future impact factors by increasing the denominator of the calculation (number of citable articles) to a greater degree than numerator (number of citations) due to the interval between online publication and preparation of articles citing that work.

Important items in the journals each year are guidelines, position statements, and recommendations developed by AALAS-member professional organizations. Publication of these documents in the journals supports their distribution to a large number of individuals and offers the additional advantage of easy downloading through Ingenta. The Overview articles and issues are also highlights every year (Table 3). In 2022 we published 4 overviews in *JAALAS* and 2 in *CM*. Overviews are valued highly and often cited by readers. We urge readers to consider writing and submitting these important articles, as they perform the valuable function of summarizing what is known about a topic in a concise and critical manner. We suggest that those of you who have presented oral overviews of various topics at AALAS national meetings consider converting your presentation into a published overview, as Associate Editor Sue Compton did for her AALAS presentation on PCR and RT-PCR in diagnosis and health monitoring. Doing this rewards speakers for the time invested in preparing the presentation and preserves the information for individuals who were unable to attend or who would like to refer back to the information and perhaps cite it.

We encourage readers to volunteer as guest editors for special topic issues. This responsibility primarily involves soliciting contributors and involvement in the review process to the extent desired, with Alison Brown and the Associate Editors participation. Alison also manages the flow of submissions through the publication process.

Important additions to the literature would be meta-analyses of similar studies on debated or unresolved topics. *JAALAS* and *CM* would welcome submission of Cochrane-type structured reviews of key areas of interest to our readers. Topics could include bedding evaluation, treatment for mouse dermatitis, alopecia in nonhuman primates, use of CO_2 for euthanasia, trio and pair breeding success, analgesic dosage regimens, cage size, effects of housing density on rodent well-being, effective enrichment devices and other similar topics.

In 2022 *CM* had 314,812 retrievals (HTML full text views/article PDF downloads) from PMC, and *JAALAS* had 807,250 (Figure 1). Articles with the highest numbers of downloads are shown in Tables 4 and 5. The high number of downloaded

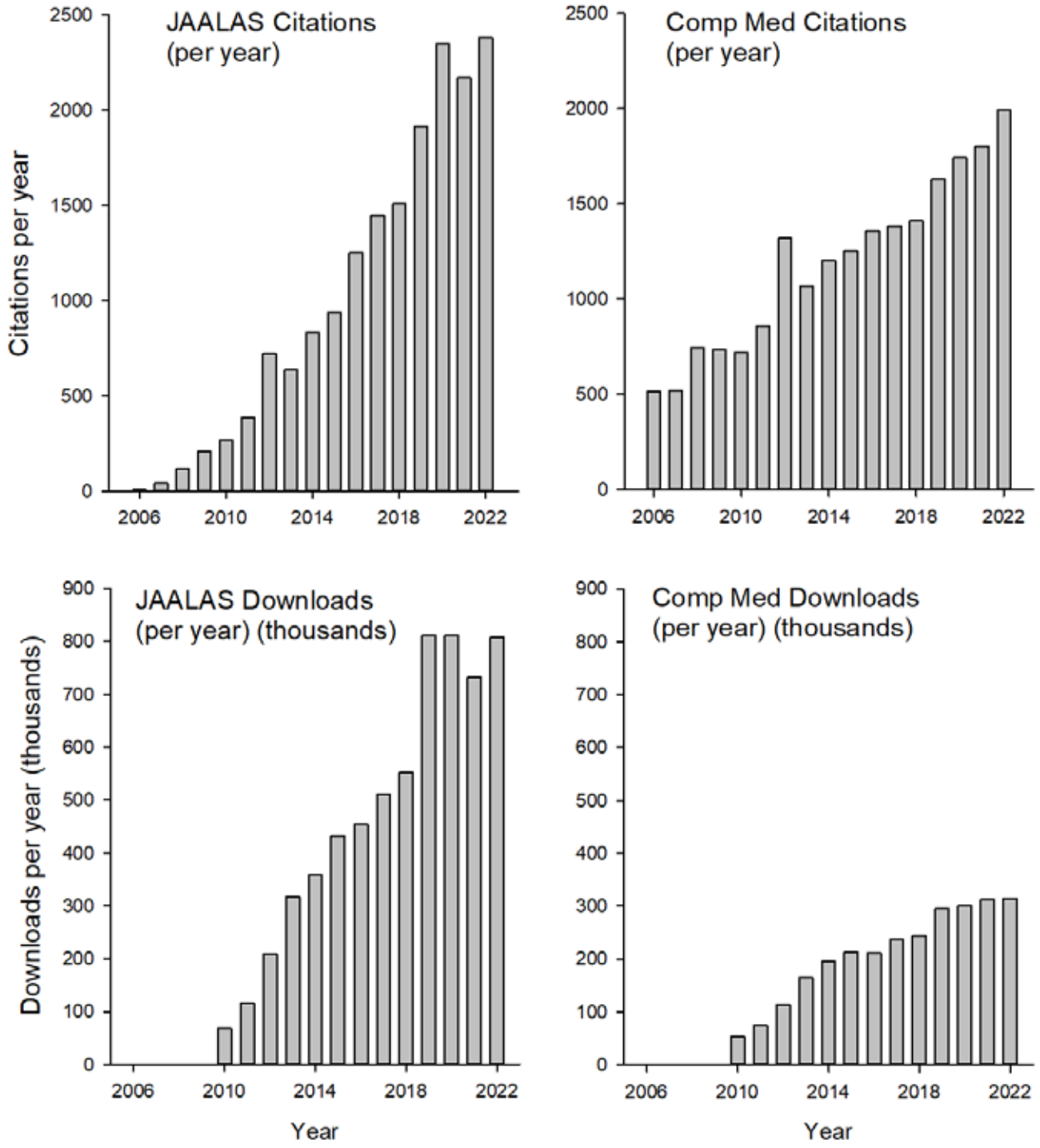

Figure 1. Cite and download figures.

Table 3: Overviews published in 2022

JAALAS, volume 62	Authors	Pages
Social buffering as a tool for improving rodent welfare	Denomme, Mason	5–14
Toward global harmonization of training and certification of specialists in laboratory animal veterinary medicine	Hedenqvist, Baumans, Hanai, Yano, Yeom, Cheong, Song, Devan, Shakthi, Klein, Bailey	15–20
Rodent thermoregulation: Considerations for tail-cuff blood pressure measurements	Bigiarelli	406–411
A review of long-acting parenteral analgesics for mice and rats	Huss, Pacharinsak	599–602
***Comparative Medicine*, volume 72**		
Mouse models of osteoarthritis: A summary of models and outcomes assessment	Drevet, Favier, Brun, Gavazzi, Lardy	3–13
An update on the biologic effects of fenbendazole	Cray, Altman	215–219

articles for the 2 journals truly underscores the value of AALAS publications. Articles from both journals are downloaded hundreds of thousands of times each year, and many articles have been downloaded thousands of times a year for many years after the publication date. These data show that even though the journal impact factors are modest, the articles are used by the community we serve and are durable in terms of content. Readers might note that some of the publications that are still widely cited and downloaded were published as long ago as 2001. Although some of these are original research, others are overviews. The long interval since some of these were published suggests that updated reviews would be valuable, should any readers be inclined to take on this task.

The number of citations from both journals also remains relatively consistent from year to year (Figure 1). The top 10 lists of cited and downloaded articles have several new additions this year (Tables 6 through 10). The general lack of overlap between the top-10 cited and downloaded lists suggests that

Table 4. *JAALAS* Articles with highest number of downloads in 2022

Article	Live in PMC	Total downloads each year			
		2019	2020	2021	2022
Gao, Dang & Watson. 2008. Unexpected antitumorigenic effect of fenbendazole when combined with supplementary vitamins. **47:**37–40.	6/12/2009	137,397	101,538	88,309	71,126
Turner, Brabb, Pekow & Vasbinder. 2011. Administration of substances to laboratory animals: routes of administration and factors to consider. **50:**600–613.	3/1/2012	43,891	46,910	5,7243	63,526
Shomer, Allen-Worthington, Hickman, Jonnalagadda, Newsome, Slate, Valentine, Williams & Wilkinson. 2020. Review of rodent euthanasia methods. **59:**242–253.	11/1/2020	**	**	**	8,306
Tannenbaum & Bennett. 2015 Russell and Burch's 3Rs Then and now: The need for clarity in definition and purpose. **54:**120–132,	9/1/2015	**	**	**	8,207
Laferriere & Pang. 2020. Review of intraperitoneal injection of sodium pentobarbital as a method of euthanasia in laboratory rodents. **59:**254–263	11/1/2020	**	**	**	7,816
Turner, Pekow, Vasbinder & Brabb. 2011. Administration of substances to laboratory animals: equipment considerations, vehicle selection, and solute preparation. **50:**614–627.	3/1/2012	8,721	9,782	8,487	7,567
Lelovas, Kostomitsopoulos & Xanthos. 2014. A comparative anatomic and physiologic overview of the porcine heart. **53:**432–438	3/1/2015	**	**	4,924	7,377
Redelsperger, Taldone, Riedel, Lepherd, Lipman & Wolf. 2014. Stability of doxycycline in feed and water and minimal effective doses in tetracycline-inducible systems. **55:**467–474	1/1/2016	**	**	4,914	5,725
Ray, Johnston, Verhulst, Trammell & Toth. 2010. Identification of markers for imminent death in mice used in longevity and aging research. **49:**282–288.	11/1/2010	**	11,859	8,042	5,253
Duran-Struuck & Dysko. 2009. Principles of bone marrow transplantation (BMT): Providing optimal veterinary and husbandry care to irradiated mice in BMT studies. **48:**11–22.	7/1/2009	8,758	7,655	6,294	5,159

*Data collected from PubMed Central
**Not on top 10 downloaded list for indicated year

Table 5. *Comparative Medicine* Articles with highest number of downloads in 2022

Article	Live in PMC	Total downloads each year			
		2019	2020	2021	2022
Novak & Meyer. 2009. Alopecia: possible causes and treatments, particularly in captive nonhuman primates. **59:**18–26.	8/1/2009	6,724	10,766	14,972	15,919
O'Connell, Mikkola, Stepanek, Vernet, Hall, Sun, Yildirim, Staropoli, Lee & Brown. 2015. Practical murine hematopathology: a comparative review and implications for research. **65:**96–113.	10/1/2015	8,472	13,109	13,465	14,478
Wafer, Whitney & Jensen. 2015. Fish lice (Argulus japonicus) in goldfish (Carassius auratus). **65:**93–95.	10/1/2015	5,675	7,444	13,263	7,929
Graham, Janecek, Kittredge, Hering & Schuurman. 2011. The streptozotocin-induced diabetic nude mouse model: differences between animals from different sources. **61:**356–360.	2/1/2012	10,941	11,035	10,308	7,710
Foley, Kendall & Turner. 2019. Clinical management of pain in rodents. **69:**468–489	12/10/2019	**	**	**	5,418
Lynch, Nicholson, Dance, Morgan & Foley. 2010. Animal models of substance abuse and addiction: implications for science, animal welfare, and society. **60:**177–188.	12/1/2010	7,544	8,052	8,670	5,148
Toth & Bhargava. 2013. Animal models of sleep disorders. **63:**91–104.	10/1/2013	3,939	4,336	4,768	4,734
Hankenson, Marx, Gordon & David. 2018. Effects of rodent thermoregulation on animal models in the research environment. **61:**339–345	6/1/2019	5,332	7,410	5,618	4,445
Tatarov, Panda, Petkov, Kolappaswamy, Thompson, Kavirayani, Lipsky, Elson, Davis, Martin & DeTolla. 2011. Effect of magnetic fields on tumor growth and viability. **61:**339–345	2/1/2012	**	**	**	4,400
Collins, Reuter, Rush & Villano. 2017. Viral vector biosafety in laboratory animal research. **67:**215–221.	12/1/2017	**	**	4,471	3,975

*Data collected from PubMed Central
**Not on top 10 downloaded list for indicated year

different audiences are using these publications, some with focus on publishing new research (the cited articles) and others on information (the downloaded articles).

Table 6. *JAALAS* Articles with highest cumulative number of citations since publication

Article	Publication year	Total cumulative number of citations as of			
		January, 2020	February, 2021	January, 2022	January, 2023
Turner, Brabb, Pekow, Vasbinder. Administration of substances to laboratory animals: Routes of administration and factors to consider. **50:**600–613.	2011	264	366	479	547
Portfors. Types and functions of ultrasonic vocalizations in laboratory rats and mice. **46:**28–34.	2007	311	349	387	418
Tannenbaum, Bennett. Russell and Burch's 3Rs then and now: the need for clarity in definition and purpose. **54:**120–132.	2015	98	141	206	250
Matsumiya, Sorge, Sotocinal, Tabaka, Wieskopf, Zaloum, King, Mogil. Using the mouse grimace scale to reevaluate the efficacy of postoperative analgesics in laboratory mice. **51:**42–49.	2012	96	118	138	154
Lelovas, Kostomitsopoulos, Xanthos. A comparative anatomic and physiologic overview of the porcine heart. **52:**432–438.	2014	**	**	**	151
Hess, Rohr, Dufour, Gaskill, Pajor, Garner. C57BL/6J mice given more naturalistic nesting materials build better nests. **47:**25–31.	2008	88	105	126	141
Heffner, Heffner. Hearing ranges of laboratory animals. **46:**20–22.	2007	83	105	125	141
Duran-Struuck, Dysko. Principles of bone marrow transplantation (BMT): Providing optimal veterinary and husbandry care to irradiated mice in BMT studies. **48:**11–22	2009	85	95	117	120
Guillen. FELASA Guidelines and Recommendations. **51:**311–321.	2012	**	**	92	113

*Data collected from Web of Science
**Not on top 10 downloaded list for indicated year

Table 7. *Comparative Medicine* Articles with highest cumulative number of citations since publication

Article	Publication year	Total cumulative number of citations as of			
		January, 2020	February, 2021	January, 2022	January, 2023
Cray, Zaias, Altman. Acute phase response in animals: A review. **59:**517–526.	2009	401	461	520	582
Lelovas, Xanthos, Thomas, Lyritis, Dontas. The laboratory rat as an animal model for osteoporosis research. **58:**424–430.	2008	282	313	347	366
Mansfield. Marmoset models commonly used in biomedical research. **53:**383–392.	2003	209	229	245	259
Abbott, Barnett, Colman, Yamamoto, Schultz-Darken. Aspects of common marmoset basic biology and life history important for biomedical research. **53:**339–350.	2003	166	191	209	224
Martini, Fini, Giavaresi, Giardino. Sheep model in orthopedic research: A literature review. **51:**292–299.	2001	123	135	153	172
Callicott, Womack. Real-time PCR for measurement of mouse telomeres. **56:**17–22.	2006	131	143	157	169
Yang, Deng, Tong, Liu, Zhang, Zhu, Gao, Huang, Liu, Ma, Xu, Ding, Deng, Qin. Mice transgenic for human angiotensin-converting enzyme 2 provide a model for SARS coronavirus infection. **57:**450–459	2007	**	**	143	165
Nemzek, Hugunin, Opp. Modeling sepsis in the laboratory: Merging sound science with animal well-being. **58:**120–128.	2008	115	128	147	164
Dyson, Alloosh, Vuchetich, Mokelke, Sturek. Components of metabolic syndrome and coronary artery disease in female Ossabaw swine fed excess atherogenic diet. **56:**35–45.	2006	139	152	209	157
Hufeldt, Nielsen, Vogensen, Midtvedt, Hansen. Variation in the gut microbiota of laboratory mice Is related to both genetic and environmental factors. **60:**336–347.	2010	**	123	143	152

*Data collected from Web of Science
**Not on top 10 downloaded list for indicated year

Table 8. *JAALAS* Articles with highest number of citations in 2022

Article	Publication year	Number of citations in			
		2019	2020	2021	2022
Turner, Brabb, Pekow, Vasbinder. Administration of substances to laboratory animals: Routes of administration and factors to consider. **50:**600–613.	2011	78	105	96	76
Tannenbaum, Bennett. Russell and Burch's 3Rs then and now: The need for clarity in definition and purpose. **54:**120–132.	2015	35	43	61	44
Lelovas, Kostomitsopoulos, Xanthos. A comparative anatomic and physiologic overview of the porcine heart. **53:**432–438	2014	21	**	24	34
Wilson, Bunte, Carty. Evaluation of rapid cooling and tricainemethanesulfonate (MS222) as methods of euthanasia in zebrafish (*Danio rerio*). **48:**785–789.	2009	28	23	23	32
Portfors. Types and functions of ultrasonic vocalizations in laboratory rats and mice. **46:**28–34.	2007	49	33	37	31
Guillen. FELASA guidelines and recommendations. **51:**311–321.	2012	19	18	18	20
Heffner, Heffner. Hearing ranges of laboratory animals. **46:**20–22.	2007	25	19	17	19
Collymore, Tolwani, Lieggi, Rasmussen. Efficacy and safety of 5 anesthetics in adult zebrafish (*Danio rerio*). **53:**198–203.	2014	**	**	**	18
Hess, Rohr, Dufour, Gaskill, Pajor, Garner. C57BL/6J mice given more naturalistic nesting materials build better nests. **47:**25–31.	2008	17	16	17	17
Conroy, Papenfuss, Parker, Hahn. Use of tricaine methanesulfonate (MS222) for euthanasia of reptiles. **48:** 28–32.	2009	**	**	**	17

*Data collected from Scopus
**Not on top 10 list for indicated year

Table 9. *Comparative Medicine* Articles with highest number of citations in 2022*

Article	Publication year	Number of citations in			
		2019	2020	2021	2022
Cray, Zaias, Altman. Acute phase response in animals: A review. **59:**517–526.	2009	59	62	61	67
O'Connell, Mikkola, Stepanek, Vernet, Hall, Sun, Yildirim, Staropoli, Lee, Brown. Practical murine hematopathology: A comparative review and implications for research. **65:**96–113.	2015	18	26	34	44
Yang, Deng, Tong, Liu, Zhang, Zhu, Gao, Huang, Liu, Ma, Xu, Ding, Deng, Qin. Mice transgenic for human angiotensin-converting enzyme 2 provide a model for SARS coronavirus infection. **5:**450–459	2007	**	76	51	27
Lelovas, Xanthos, Thoma, Lyritis, Dontas. The laboratory rat as an animal model for osteoporosis research. **58:**424–430.	2008	29	22	23	21
Hankenson, Marx, Gordon, David. Effects of rodent thermoregulation on animal models in the research environment. **68:**425–438	2018	**	**	**	21
Turner, Pang, Lofgren. A review of pain assessment methods in laboratory rodents. **69:**451–467.	2019	**	**	**	21
Martini, Fini, Giavaresi, Giardino. Sheep models in orthopedic research: a literature review. **51:**292–299.	2001	**	**	18	19
Graham, Janecek, Kittredge, Hering, Schuurman. The streptozotocin-induced diabetic nude mouse model: Differences between animals from different sources.**51:**292–299.	2000	17	19	20	19
Toth, Bhargava. Animal models of sleep disorders.**63:**91–104.	2013	**	**	**	17
Abbott, Barnett, Colman, Yamamoto, Schultz-Darken. Aspects of common marmoset basic biology and life history important for biomedical research. **53:**339–350.	2003	25	16	16	16

*Data collected from Scopus
**Not on top 10 list for indicated year