Purpose:

This SOP outlines how to dilute injectable Carprofen for treatment of mice and rats.

Materials

- Carprofen injectable (50mg/ml)
- 0.9% sterile NaCl or Sterile Water
- Label for after dilution.
- Sterile vial or sterile rubber top container

Background:

- Recommended dose for mice Carprofen injectable is *5-20 mg/kg SQ every 24 hours for 1-3 days.
- Recommended dose for rat Carprofen injectable is 5 mg/kg SQ every 24 hours for 1-3 days.
- This product must be diluted before use in mice to1:50 dilution for a final concentration of 1 mg/ml.
- This product should be diluted before use in rats to 1:5 dilution for final concentration of 10 mg/ml.

**Lower dose range for multimodal, higher dose for single modality analgesic or more invasive procedures*

Procedures for 1:50 dilution for Mice:

- Add 0.2mls of carprofen concentrate to 9.8 mls of sterile saline in a sterile vial or sterile rubber top container for a total volume of 10.0mls.
- The new concentration of carprofen in the saline bottle will be 1.0 mg/ml
- Recommended needle size 23-25-gauge 5/8-inch needle.
- Expiration is 60 days from mixture date

Procedure for 1:5 dilution for Rats*:

- Add 0.5mls of carprofen concentrate to 2.0 mls of sterile saline in a sterile vial or sterile rubber top container for a total volume of 2.5mls.
- The new concentration of carprofen in the saline bottle will be 10 mg/ml
- Recommended needle size is 25-27g 5/8-inch needle
- Expiration is 60 days from mixture date.

** Or increase volumes to 2.0mls of concentrate to 8.0mls of saline to equal total of 10.0mls of 10mg/ml*

Dosing charts

Rat Chart (mls using 10 mg/ml Diluted Solution)

Dose (mls SQ)			Dose (mls SQ)		Dose (mls SQ)			Dose (mls SQ)	
Wt. (g)	5 mg/kg		Wt. (g)	5 mg/kg	Wt. (g)	5 mg/kg		Wt. (g)	5 mg/kg
200-205	0.10		250-255	0.13	300-305	0.15		350-355	0.18
210-215	0.11		260-265	0.13	310-315	0.16		360-365	0.18
220-225	0.11		270-275	0.14	320-325	0.16		370-375	0.19
230-235	0.12		280-285	0.14	330-335	0.17		380-385	0.19
240-245	0.12		290-295	0.15	340-345	0.17		390-400	0.20

Mouse Chart (mls using 1.0 mg/ml Diluted Solution)

	Dose (mls SQ)					Dose (mls SQ)			
Wt. (g)	5 mg/kg	10 mg/kg	15 mg/kg	20 mg/kg	Wt. (g)	5 mg/kg	10 mg/kg	15 mg/kg	20 mg/kg
12	0.06	0.12	0.18	0.24	**31**	0.16	0.31	0.47	0.62
13	0.07	0.13	0.20	0.26	**32**	0.16	0.32	0.48	0.64
14	0.07	0.14	0.21	0.28	**33**	0.17	0.33	0.50	0.66
15	0.08	0.15	0.23	0.30	**34**	0.17	0.34	0.51	0.68
16	0.08	0.16	0.24	0.32	**35**	0.18	0.35	0.53	0.70
17	0.09	0.17	0.26	0.34	**36**	0.18	0.36	0.54	0.72
18	0.09	0.18	0.27	0.36	**37**	0.19	0.37	0.56	0.74
19	0.10	0.19	0.29	0.38	**38**	0.19	0.38	0.57	0.76
20	0.10	0.20	0.30	0.40	**39**	0.20	0.39	0.59	0.78
21	0.11	0.21	0.32	0.42	**40**	0.20	0.40	0.60	0.80
22	0.11	0.22	0.33	0.44	**41**	0.21	0.41	0.62	0.82
23	0.12	0.23	0.35	0.46	**42**	0.21	0.42	0.63	0.84
24	0.12	0.24	0.36	0.48	**43**	0.22	0.43	0.65	0.86
25	0.13	0.25	0.38	0.50	**44**	0.22	0.44	0.66	0.88
26	0.13	0.26	0.39	0.52	**45**	0.23	0.45	0.68	0.90
27	0.14	0.27	0.41	0.54	**46**	0.23	0.46	0.69	0.92
28	0.14	0.28	0.42	0.56	**47**	0.24	0.47	0.71	0.94
29	0.15	0.29	0.44	0.58	**48**	0.24	0.48	0.72	0.96
30	0.15	0.30	0.45	0.60	**49**	0.25	0.49	0.74	0.98

Revision History:

Revision	Author	Revisions Made	Replaces Version
1	GC	Added dilution for Rats	11/30/18
2	GC	Instructions for reduced volume primary	5/19/20
3	GC	Changed Expiration date from 90-30 days, removal of refrig req.	10/10/20
4	JM	Instructions for diluting in sterile vial	6/10/21
5	GC	Addition of Dosing Charts and expansion of mouse dose	4/22/21
6	GC	Formatting	10/27/21
7	GC	Change 30-60 day expiration	11/18/21

References

https://www.colorado.edu/researchinnovation/sites/default/files/attached-files/cu_boulder_veterinary_formulary_9_16_2016-0823.jr2_.pdf#:~:text=Dilute%200.1%20mL%20of%20the,body%20weight%20of%20each%20mouse. 30 days

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5438923/ 28 day

https://www.ingentaconnect.com/content/aalas/jaalas/2021/00000060/00000004/art00010?crawler=true&mimetypeapplication/pdf 60 day