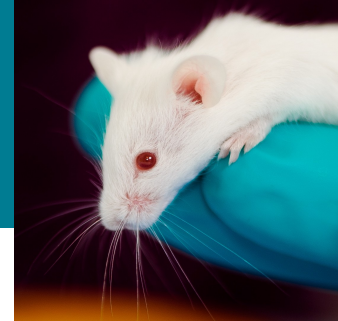


ALZET RESEARCH SUMMARY — CNS (Rat)



ALZET® Osmotic Pumps are a reliable, convenient and cost effective method for continuous dosing of unrestrained laboratory animals, including mice and young rats. These small, implantable pumps are an effective tool for continuous administration to CNS targets. In fact, the ALZET bibliography contains over **2600 publications** on this research application. The table below summarizes examples of recent research using ALZET pumps for CNS infusion to rats. For additional references, please contact ALZET Technical Services.

Agent	Vehicle	Duration	Pump Model	Target	Citation
Wnt-7a; Wnt-5a; Dkk1, Recombinant Human	PBS	11 days	2004	Hippocampus	A. Ortiz-Matamoros & C. Arias. <i>Anat Rec (Hoboken)</i> 2019;302(9):1647-1657
Carbon monoxide-releasing molecule 2; Zinc Protoporphyrin IX	Artificial CSF Buffered DMSO	6 weeks	2006	Paraventricular Nucleus	D.D. Zhang, <i>et al. Cardiovasc Toxicol</i> 2019;19(5):451-464
DMT-DALDA (μ Opioid Agonist); Morphine sulfate	Saline	7 days; 13 days	2001; 2002	Intrathecal	P. Yan, <i>et al. J Mol Neurosci</i> 2019;68(2):181-190
Berberine	Artificial CSF	28 days	2006	Paraventricular Nucleus	H. Tian, <i>et al. Phytomedicine</i> 2019;52:216-224
Exosomes, Human Umbilical Cord Mesenchymal Stem Cell	Saline	7 days	2001	Intrathecal	S.J. Shiue, <i>et al. Pain</i> 2019;160(1):210-223
Serotonin	PBS	7 days	2001	Neocortex	S.E. Fanibunda, <i>et al. Proc Natl Acad Sci USA</i> 2019;116(22):11028-11037
ANA-12; U0126; LY294002	DMSO	14 days	2002	Visual Cortex	G. Sansevero, <i>et al. Neuropharmacology</i> 2019;145(Pt A):114-122
Corticotropin-Releasing Factor	Artificial CSF	14 days	1002	Posterodorsal Medial Amygdala	X.F. Li, <i>et al. J Neuroendocrinol</i> 2019;31(6):e12719
Fluorocitrate	Not Stated	7 days	1007D	Substantia Nigra Pars Compacta	K. Kuter, <i>et al. J Neurochem</i> 2019;148(1):63-79
Pteroyl-closo-dodecaborate Conjugate	Not Stated	24 hours	2001D	Surface of the Brain	T. Kanemitsu, <i>et al. Radiat Environ Biophys</i> 2019;58(1):59-67

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