



References on Bilateral CNS Infusion Using ALZET® Osmotic Pumps

Q6948: Y. Zhang, *et al.* Hyperbaric oxygen produces a nitric oxide synthase-regulated anti-allodynic effect in rats with paclitaxel-induced neuropathic pain. *Brain Res* 2019;

ALZET Comments: S-Methyl-L-thiocitrulline; Saline; SC; Rat; 1007D; 7 days; Dose ($0.5 \pm 0.1 \mu\text{L/hr/day}$); 0.9% saline used; animal info (male Sprague Dawley); post op. care (Ampicillin, meloxicam); enzyme inhibitor (S-Methyl-L-thiocitrulline is a neuronal nitric oxide synthase (nNOS) inhibitor); Brain coordinates (AP-1.0 mm, ML -2.0 mm, DV -3.5mm from bregma); bilateral cannula used; dependence;

Q6949: T. Zera, *et al.* Microglia and brain angiotensin type 1 receptors are involved in desensitising baroreflex by intracerebroventricular hypertonic saline in male Sprague-Dawley rats. *Auton Neurosci* 2019;217(49-57

ALZET Comments: Minocycline, Losartan; Saline, iso-osmotic, Saline, hyperosmotic; CSF/CNS; Rat; 2ML2; 2 weeks; Dose (Minocycline-5 $\mu\text{g/h}$; Losartan- 12.5 $\mu\text{g/h}$); 0.9% isosmotic saline with minocycline, 5% Hyperosmotic saline with Losartan used; animal info (Normotensive adult male Sprague-Dawley rats); enzyme inhibitor (microglia); ALZET brain infusion kit 2 used; Brain coordinates (1.2mm posterior to bregma, -1.8mm laterolateral from sagittal suture, diameter 0.5 mm) bilateral cannula used; cyanoacrylate adhesive; cardiovascular;

Q6799: H. Tian, *et al.* Chronic infusion of berberine into the hypothalamic paraventricular nucleus attenuates hypertension and sympathoexcitation via the ROS/Erk1/2/iNOS pathway. *Phytomedicine* 2019;52(216-224

ALZET Comments: Berberine; CSF, artificial; CSF/CNS (Paraventricular nucleus); Rat; 2006; 28 days; Dose (2 $\mu\text{g/h}$); Controls received mp w/ vehicle; animal info (adult male Sprague-Dawley rats (240-280 g.)); bilateral cannula used;

Q6955: A. Ortiz-Matamoros, *et al.* Differential Changes in the Number and Morphology of the New Neurons after Chronic Infusion of Wnt7a, Wnt5a, and Dkk-1 in the Adult Hippocampus In Vivo. *Anat Rec (Hoboken)* 2019;

ALZET Comments: Wnt7a, Wnt5a, Dkk-1; PBS; CSF/CNS; Rat; 2004; 11 days; Dose (0.25 $\mu\text{L/hr}$); animal info (Male Wistar rats; 250-300 g, 3-months-old); Wnt7a and Wnt5a are Wnt agonists, and Dkk-1 is a Wnt antagonist; Brain coordinates (AP -3.6, L -3.1, and V + 2.0.); bilateral cannula used(3.5 mm long bilateral cannula made with silicate capillaries); neurodegenerative ();

Q7009: N. R. Laferriere, *et al.* Inhibition of microRNA-124-3p as a novel therapeutic strategy for the treatment of Gulf War Illness: Evaluation in a rat model. *Neurotoxicology* 2019;71(16-30

ALZET Comments: rno-miR-124-3p; CSF, artificial; CSF/CNS (lateral ventricle); Rat; 2004; 28 days; Dose (concentrations of 0, 0.05, 0.1 or 0.5 nmol/day); post op. care (carprofen); ALZET brain infusion kit 2 used; Brain coordinates (1.00mm caudal and 1.40mm lateral to bregma, with no height adjustment spacers); bilateral cannula used; dependence; Therapeutic indication (Gulf War Illness);

Q7243: N. Tanabe, *et al.* Matrine Directly Activates Extracellular Heat Shock Protein 90, Resulting in Axonal Growth and Functional Recovery in Spinal Cord Injured-Mice. *Front Pharmacol* 2018;9(446

ALZET Comments: Anti-HSP90a/b monoclonal antibody, mouse IgG; CSF, artificial; CSF/CNS (right lateral ventricle); Mice; 1004; 14 days; Dose (164 ng/mL-HSP90, IgG); aCSF: 148.3mM NaCl, 3mM KCl, 1.4mM CaCl₂, 0.8mM MgCl₂, 0.75mMNa₂HPO₄, and 0.195mMNaH₂PO₄ used; animal info (8 wanimal info (8 weeks old, 28-33 g, female, ddY); eeks old, 28-33 g, female, ddY); ALZET brain infusion kit 3 used; Brain coordinates (anteroposterior: -0.22mm, mediolateral: +1mm, dorsoventricular:-2.5mm); bilateral cannula used; cyanoacrylate adhesive; spinal cord injury; .

Q7218: T. T. Liu. EphrinB3 modulates hippocampal neurogenesis and the reelin signaling pathway in a pilocarpineinduced model of epilepsy. *INTERNATIONAL JOURNAL OF MOLECULAR MEDICINE* 2018;41(3457-3467

ALZET Comments: Eph B3Fc chimera, mouse recomb.; CSF/CNS (hippocampus); Rat; 7 days; Dose (50 $\mu\text{g/ml}$); animal info (young male SpragueD awley rats, aged 68 weeks, 200250 g); ALZET brain infusion kit XX used; Brain coordinates (2.8 mm under the dura); bilateral cannula used; The cannula was cemented onto the skull with dental acrylic.; neurodegenerative (Epilepsy);



Q7104: E. S. Calipari, *et al.* Granulocyte-colony stimulating factor controls neural and behavioral plasticity in response to cocaine. *Nat Commun* 2018;9(1):9

ALZET Comments: Antibody, anti-GCSF neutralizing antibody, Immunoglobulin G, pre-immune; Saline; CSF/CNS (nucleus accumbens); Mice; 1007D; 7 days; Dose (1 ug/day); animal info (Male, C57BL/6 J, 7 weeks old, 20–25 g); Multiple pumps per animal (2); Brain coordinates (From bregma: anteroposterior, +1.5; mediolateral, + 1.0; dorsoventral, –4.5); bilateral cannula used; The cannulae were permanently fixed to the skull with Loctite adhesive; dependence;

Q6538: J. J. White, *et al.* Genetic silencing of olivocerebellar synapses causes dystonia-like behaviour in mice. *Nat Commun* 2017;8(14912)

ALZET Comments: Lidocaine; Saline; Methylene blue; CSF/CNS (cerebellum); Mice; 7 days; Dose (4% lidocaine); 0.9% saline; 0.01% methylene blue; Controls received mp w/ vehicle; animal info (adult dystonic Ptf1aCre;Vglut2fx/fx mice.); bilateral cannula used;

Q6711: S. Park, *et al.* Agrimonia pilosa Ledeb., Cinnamomum cassia Blume, and Lonicera japonica Thunb. protect against cognitive dysfunction and energy and glucose dysregulation by reducing neuroinflammation and hippocampal insulin resistance in beta-amyloid-infused rats. *Nutr Neurosci* 2017;20(2):77-88

ALZET Comments: Amyloid-β; Saline; CSF/CNS (bilateral CA1 subregions); Rat; 14 days; Dose (3.6 nmol/day); animal info (Male Sprague Dawley rats, weighing 232±16 g.); Brain coordinates (lateral, –3.3 mm from the bregma; posterior, 2.0 mm from the midline; ventral, –2.5 mm from dura); bilateral cannula used; cyanoacrylate adhesive;

Q6712: B. M. Park, *et al.* Fermented garlic extract ameliorates monocrotaline-induced pulmonary hypertension in rats. *Journal of Functional Foods* 2017;30(247-253)

ALZET Comments: Oxadiazolo quinoxalin-1-one, 1H-[1,2,4], [4,3-a]; Saline; CSF/CNS; Rat; 2002; 21 days; Dose (2 mg/kg/day); animal info (Eight-week-old male Sprague-Dawley); 1H-[1,2,4] oxadiazolo [4,3,- a] quinoxalin-1-one aka ODO; Brain coordinates (lateral, –3.3 mm from the bregma; posterior, 2.0 mm from the midline; ventral, –2.5 mm from dura); bilateral cannula used; cardiovascular;

Q6355: N. Mittal, *et al.* Beta-arrestin 1 regulation of reward-motivated behaviors and glutamatergic function. *PLoS One* 2017;12(10):e0185796

ALZET Comments: Ifenprodil tartrate; Tartaric acid; CSF/CNS; Mice; 1002; 14 days; Dose (18ng/h); 0.1% tartaric acid used; animal info (two to three months old, male and female mice from heterozygous matings); Brain coordinates (A/P: +1.1mm, M/L: +/-0.05mm, D/V: 4.5mm); bilateral cannula used; cyanoacrylate adhesive;

Q6173: J. S. Medel-Matus, *et al.* Galanin contributes to monoaminergic dysfunction and to dependent neurobehavioral comorbidities of epilepsy. *Exp Neurol* 2017;289(64-72)

ALZET Comments: M40, M871, Galanin receptor antagonists; Saline; CSF/CNS (raphe nucleus); CSF/CNS (locus coeruleus); Rat; 1007D; 3 days; Dose (10 nM solution of M40, 30 nM solution of M871); Controls received mp w/ vehicle; animal info (50 day old male Wistar rats); Multiple pumps per animal (2); M40 is a Galanin receptor type 1/2 antagonist; M871 is a preferential GalR2 antagonist; PlasticsOne cannula used (28 GA; length 6.5 mm for RN, 8.0 mm for LC); bilateral cannula used for LC infusion with 2 pumps; Therapeutic indication (Epilepsy);

Q5829: N. Martinez-Sanchez, *et al.* Thyroid hormones induce browning of white fat. *J Endocrinol* 2017;232(2):351-362

ALZET Comments: Thyroxin, L-, Adenovirus vector; Gene, green fluorescent protein; Gene, AMP-activated protein kinase; Saline; CSF/CNS (hypothalamus); Rat; 1007D; 7, 21 days; bilateral cannula used; animal info (200-250g); gene therapy; Therapeutic indication (Browning, thyroid hormones);

Q6477: Y. F. Liang, *et al.* Hydrogen sulfide in paraventricular nucleus attenuates blood pressure by regulating oxidative stress and inflammatory cytokines in high salt-induced hypertension. *Toxicol Lett* 2017;270(62-71)

ALZET Comments: GYY4137, hydroxylamine hydrochloride; CSF, artificial; CSF/CNS; Rat; 2006; 6 weeks; Controls received mp w/ vehicle; animal info (male Dahl rats,); post op. care (buprenorphine); hydroxylamine hydrochloride aka HA; Brain



coordinates (1.8 mm posterior to the bregma, 0.4 mm lateral to the central line, and 7.9 mm ventral to the zero level); bilateral cannula used; Cannula placement verified via histological confirmation;.

Q6029: A. Dey, *et al.* Glucocorticoid-mediated activation of GSK3beta promotes tau phosphorylation and impairs memory in type 2 diabetes. *Neurobiol Aging* 2017;57(75-83

ALZET Comments: Corticosterone; 2-hydroxypropyl-β-cyclodextrin; TDZD-8; Saline; CSF/CNS (hippocampus); Mice; 2 weeks; animal info (5 weeks); functionality of mp verified by ELISA; bilateral cannula; behavioral testing (Y-maze, novel object preference task); TDZD-8 is a non-ATP-competitive selective inhibitor of GSK3β; Dose (2 μM/day);.

Q6016: J. Clasadonte, *et al.* Connexin 43-Mediated Astroglial Metabolic Networks Contribute to the Regulation of the Sleep-Wake Cycle. *Neuron* 2017;95(6):1365-1380 e5

ALZET Comments: L-lactate, Sodium; CSF, artificial; CSF/CNS; Mice; 1002; 2 weeks; Controls received mp w/ vehicle; animal info (8 weeks old); bilateral cannula; Therapeutic indication (Sleep); Dose (5 mM);.

Q6415: P. Bonaventure, *et al.* Evaluation of JNJ-54717793 a Novel Brain Penetrant Selective Orexin 1 Receptor Antagonist in Two Rat Models of Panic Attack Provocation. *Front Pharmacol* 2017;8(357

ALZET Comments: 1-allylglycine; CSF/CNS (hypothalamus); Rat; 2002; animal info (male Sprague-Dawley rats weighing 300–350 g); Brain coordinates (1.2 mm posterior, +2.1 mm lateral, +9.1 mm ventral); bilateral cannula used;.

Q5581: J. Bai, *et al.* Central administration of tert-butylhydroquinone attenuates hypertension via regulating Nrf2 signaling in the hypothalamic paraventricular nucleus of hypertensive rats. *Toxicol Appl Pharmacol* 2017;333(100-109

ALZET Comments: Butylhydroquinone, tert-; Tempol; CSF, artificial; DMSO; CSF/CNS (hypothalamic paraventricular nucleus); Rat; 1004; 2 weeks; Dose; tBHQ (0.8 μg/day), or tempol (20 μg/h); 1% DMSO used; Controls received mp w/ vehicle; animal info (250 g–270 g spontaneously hypertensive rats and Wistar-Kyoto rats); antihypertensive; bilateral cannula used;.

Q5869: D. A. Adekunbi, *et al.* Role of amygdala kisspeptin in pubertal timing in female rats. *PLoS One* 2017;12(8):e0183596

ALZET Comments: Peptide 234; CSF, artificial; CSF/CNS; Rat; 2002; 14 days, 2 weeks; animal info (21 and 100 day old rats); Peptide 234 is a kisspeptin receptor antagonist; Bilateral cannulae used; Correct cannula placement in the MePD was confirmed by microscopic inspection of 30 μm brain sections; Therapeutic indication (Obesity); Dose (2 nmol in 6 μl/d); Brain coordinates; 2.5 mm posterior to bregma (AP), 3.2 mm lateral (ML), and 7.8 mm below the surface of the dura (DV).

Q5104: Q. Y. Yi, *et al.* Paraventricular Nucleus Infusion of Epigallocatechin-3-O-Gallate Improves Renovascular Hypertension. *Cardiovasc Toxicol* 2016;16(3):276-85

ALZET Comments: gallate, Epigallocatechin-3-O; CSF, artificial; CSF/CNS (paraventricular nucleus); Rat; 1004; 4 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-275g); bilateral cannula used; post op. care (buprenorphine 0.01 mg/kg SC 12 hours post); tissue perfusion (paraventricular nucleus); tissue perfusion (paraventricular nucleus); tissue perfusion (paraventricular nucleus); Dose (20 μg/h); Brain coordinates “1.8 mm posterior, 0.4 mm lateral to the bregma and 7.9 mm ventral to the zero level” pg 277;.

Q5503: Q. Y. Yi, *et al.* Chronic infusion of epigallocatechin-3-O-gallate into the hypothalamic paraventricular nucleus attenuates hypertension and sympathoexcitation by restoring neurotransmitters and cytokines. *Toxicol Lett* 2016;262(105-113

ALZET Comments: Epigallocatechin-3-O-gallate; CSF; artificial; CSF/CNS (paraventricular nucleus); Rat; 1004; 4 Weeks; Controls received mp w/ vehicle; animal info (male, Wistar Kyoto, Spontaneously Hypertensive Rat, 14 weeks old, 275-300g); bilateral cannula used; post op. care (buprenorphine 0.01 mg/kg SC Q12H); cardiovascular; Cannula placement verified; bilateral infusion; used dental acrylic and stainless steel screws; Dose (20 μg/hr); Brain coordinates (pg 106);.

Q4900: P. Q. H. Renjun Wang, MD; Rui Zhou, BSc; Zengxiang Dong, PhD; *et al.* Sympathoexcitation in Rats With Chronic Heart Failure

Depends on Homeobox D10 and MicroRNA-7b Inhibiting



GABBR1 Translation in Paraventricular Nucleus. *Circ Heart Fail.* 2016;9(1-10)

ALZET Comments: AntagomiR-7b; RNA, small interfering GABBR1; angiotensin II; CSF/CNS (paraventricular nucleus); Rat; 1004; 1002; 4 weeks; 2 weeks; animal info (male, Wistar, 180-200g); pumps replaced after 4 weeks; bilateral cannula used; tissue perfusion (paraventricular nucleus); cardiovascular; peptides; bilateral infusion; Dose (AntagomiR-7b or Ad-siGABBR1 40 ng/h; antiotensin II 1 ng/kg/min);.

Q6617: J. Qi, *et al.* NF-kappaB Blockade in Hypothalamic Paraventricular Nucleus Inhibits High-Salt-Induced Hypertension Through NLRP3 and Caspase-1. *Cardiovasc Toxicol* 2016;16(4):345-54

ALZET Comments: Pyrrolidine dithiocarbamate; CSF, artificial; CSF/CNS (Paraventricular Nucleus); Rat; 2006; 6 weeks; Dose (5 ug/h); Controls received mp w/ vehicle; animal info (Eight-week-old male Dahl salt-sensitive (S) rats); pyrrolidine dithiocarbamate aka PDTC; enzyme inhibitor (NF-kB); Brain coordinates (1.5 mm caudal to the bregma, 0.4 mm lateral to central line, and 7.8 mm below the skull surface); bilateral cannula used;.

Q5390: H. B. Li, *et al.* TLR4/MyD88/NF-kappaB signaling and PPAR-gamma within the paraventricular nucleus are involved in the effects of telmisartan in hypertension. *Toxicol Appl Pharmacol* 2016;305(93-102)

ALZET Comments: Telmisartan; Losartan; GW9662; CSF, artificial; CSF/CNS (Hypothalamic paraventricular nucleus); Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (12-week-old male normotensive Wistar-Kyoto); functionality of mp verified by blood pressure; bilateral cannula used; dose-response (pg. 94); post op. care (buprenorphine 0.04 mg/kg, sc); tissue perfusion (hypothalamic paraventricular nucleus); cardiovascular; antihypertensive; Dose (10 ug/hr TEL, 20 ug/hr LOS, 100 ug/hr GW); Brain coordinates (1.8mm posterior to bregma, 0.4mm from midline, and 7.9mm ventral to dura);.

Q6049: H. D. Kim, *et al.* SIRT1 Mediates Depression-Like Behaviors in the Nucleus Accumbens. *J Neurosci* 2016;36(32):8441-52

ALZET Comments: Resveratrol; EX-527; DMSO; SC; Mice; 1002; 14 days; Controls received mp w/ vehicle; animal info (7-9 weeks; C57BL/6J); Multiple pumps per animal (2); behavioral testing (open field, elevated-plus maze, forced swim test, sucrose preference test); Plastics One guide cannula used; bilateral cannulae (one pump for each pedestal); Loctite adhesive used; EX-527 is a SIRT1 antagonist; Therapeutic indication (Depression); Dose (0.1 or 0.2 ug/day, EX-527: 0.5 or 1.0 ug/day);.

Q4199: H. J. Yang, *et al.* Fermenting soybeans with *Bacillus licheniformis* potentiates their capacity to improve cognitive function and glucose homeostasis in diabetic rats with experimental Alzheimer's type dementia. *EUROPEAN JOURNAL OF NUTRITION* 2015;54(77-88)

ALZET Comments: Amyloid protein, beta (35-25); amyloid protein, beta (25-35); Saline; CSF/CNS (hippocampus); Rat; 14 days; Controls received mp w/ control B-amyloid protein (25-35); animal info (male, Sprague Dawley, 223g); bilateral cannula used; neurodegenerative (alzheimer's); behavioral testing (locomotor activity, passive avoidance test, morris water maze); diabetes;.

Q3792: J. Y. Vargas, *et al.* WASP-1, a canonical Wnt signaling potentiator, rescues hippocampal synaptic impairments induced by A β oligomers. *Experimental Neurology* 2015;264(14-25)

ALZET Comments: WASP-1; CSF/CNS (hippocampus); Mice; 1004; 21 days; Control animals received aCSF; animal info (double tg APP^{swe}/PS1^{dE9}, male, 7 mo old); Plastics One bilateral cannula used; WASP-1 also known as Wnt-activating small molecule potentiator-1; neurodegenerative (Alzheimer's disease).

Q4048: J. Planaguma, *et al.* Human N-methyl D-aspartate receptor antibodies alter memory and behaviour in mice. *Brain* 2015;138(94-109)

ALZET Comments: Cerebrospinal fluid, human; PBS; CSF/CNS; Mice; 1002; 14 days; Controls received mp w/ control CSF; animal info (C57BL6J); bilateral cannula used; behavioral testing (novel object recognition; open field; V-maze, sucrose preference test, tail suspension, forced swimming test, black and white test, elevated plus maze, resident-intruder test, locomotor activity); pumps primed overnight in 37C sterile PBS; used PlasticsOne PE tubing; bilateral infusion; Anti-N-methyl D-aspartate receptor (NMDAR) encephalitis;.



Q4990: T. A. Paine, *et al.* Effects of chronic inhibition of GABA synthesis on attention and impulse control. *Pharmacol Biochem Behav* 2015;135(97-104

ALZET Comments: Allylglycine, L-; CSF, artificial; CSF/CNS (prefrontal cortex); Rat; 2002; 14 days; Controls received mp w/ vehicle; animal info (male, Sprague Dalwey); bilateral cannula used; Multiple pumps per animal (2); behavioral testing (standard time reaction test; locomotor activity); tissue perfusion (prefrontal cortex); enzyme inhibitor (glutamic acid decarboxylase); Dose (3.5 ug/0.5ul/h);.

Q4996: X. F. Li, *et al.* The Posterodorsal Medial Amygdala Regulates the Timing of Puberty Onset in Female Rats. *Endocrinology* 2015;156(10):3725-36

ALZET Comments: Bicuculline; AP5, D-; CSF/CNS (posterodorsal subnucleus); Rat; 1002; 14 days; Controls received mp w/ vehicle; animal info (female, Sprague Dalwey, late pregnant); bilateral cannula used; behavioral testing (social interaction; play fighting behavior); Cannula placement verified via histological analysis; bilateral infusion with Plastics One cannula;.

Q4995: H. B. Li, *et al.* Central blockade of salusin beta attenuates hypertension and hypothalamic inflammation in spontaneously hypertensive rats. *Sci Rep* 2015;5(11162

ALZET Comments: Immunoglobulin G, antisalusin b; CSF/CNS (paraventricular nucleus); Rat; 1004; 2 weeks; Controls received mp w/ vehicle and control antibody; animal info (male, Wistar Kyoto, SHR, 10 weeks old); bilateral cannula used; post op. care (buprenorphine SC); tissue perfusion (paraventricular nucleus); cardiovascular; Cannula placement verified via histological analysis; bilateral infusion; bp measured using tail cuff; Dose (50, 100, 150 ng/kg/day);.

Q3779: G. T. Dodd, *et al.* Leptin and Insulin Act on POMC Neurons to Promote the Browning of White Fat. *Cell* 2015;160(88-104

ALZET Comments: Leptin; insulin, human; CSF/CNS; CSF/CNS (intra-arcuate nucleus of the hypothalamus); Mice; 1002; 6 days; Control animals received mp w/ vehicle; animal info (8 wks old, C57BL/6); ALZET brain infusion kit (3) used; Plastics One bilateral cannula used with PEG tubing and a Y connector.

Q3778: R. B. Dange, *et al.* Toll-like receptor 4 inhibition within the paraventricular nucleus attenuates blood pressure and inflammatory response in a genetic model of hypertension. *Journal of Neuroinflammation* 2015;12(U2-U15

ALZET Comments: VIPER; CSF, artificial; CSF/CNS (paraventricular nucleus); Rat; 1004; 14 days; Control animals received mp w/ control peptide; animal info (male, SHR, WKY, 10-12 wks old, 230-340 g); Plastics One bilateral cannula used; VIPER is a viral inhibitory peptide of TLR4.

Q4383: H. I. Covington, *et al.* ANTIDEPRESSANT ACTION OF HDAC INHIBITION IN THE PREFRONTAL CORTEX. *NEUROSCIENCE* 2015;298(329-335

ALZET Comments: MS-2758; Cyclodextrin, hydroxypropyl-β-; CSF/CNS (prefrontal cortex); Mice; 1002; 5 days; Controls received mp w/ vehicle; animal info (male, C57BL6J); 5% cyclodextrin used; Plastics One bilateral cannula used; behavioral testing (locomotor activity; social interaction, sucrose preference, forced swim test); Cannula placement verified; bilateral infusion;.

Q4347: N. Carrier, *et al.* The Anxiolytic and Antidepressant-like Effects of Testosterone and Estrogen in Gonadectomized Male Rats. *BIOLOGICAL PSYCHIATRY* 2015;78(259-269

ALZET Comments: Fadrozole; Saline, sterile; CSF/CNS (dentate gyrus); Rat; 2004; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-270g, adult, orchidectomized); bilateral cannula used; behavioral testing (sucrose preference test, open field test); tissue perfusion (dentate gyrus); Cannula placement verified via a posteriori by sectioning on cryostat; bilateral infusion; coordinates; pumps primed for 48 hours in 37C sterile saline; used Plastics One cannula;.

Q3794: L. Adzovic, *et al.* Insulin improves memory and reduces chronic neuroinflammation in the hippocampus of young but not aged brains. *Journal of Neuroinflammation* 2015;12(U1-U10

ALZET Comments: Insulin, recombinant cat; endotoxin, LPS; CSF, artificial; CSF/CNS (fourth ventricle); Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (male, F-344, 3 months old, 21 months old); bilateral cannula used; behavioral testing (morris water maze); tissue perfusion (fourth ventricle); bilateral infusion; used tygon tubing to attach cannula to pump;.



Q3696: M. Wosiski-Kuhn, *et al.* Glucocorticoid receptor activation impairs hippocampal plasticity by suppressing BDNF expression in obese mice. *Psychoneuroendocrinology* 2014;42(165-177

ALZET Comments: Corticosterone; Cyclodextrin, 2-hydroxypropyl- β -; CSF/CNS (hippocampus); Mice; 2 weeks; Controls received mp w/ vehicle and aCSF; animal info (male, C57BL6J or db/db, 5 weeks old); functionality of mp verified by hippocampal corticosterone levels; Multiple pumps per animal (2); behavioral testing (y-maze apparatus); tissue perfusion (bilateral hippocampi); immunology; Cannula placement verified via histology; used Plastics One bilateral cannula; bilateral infusion;.

Q4743: K. Shinohara, *et al.* Post-acquisition hippocampal NMDA receptor blockade sustains retention of spatial reference memory in Morris water maze. *BEHAVIOURAL BRAIN RESEARCH* 2014;259(2):261-267

ALZET Comments: AP5, D-; CSF, artificial; CSF/CNS (hippocampus); Rat; 1007D; 7 days; 14 days; Animal info (male, albino Wistar); pumps replaced every 7 days; Plastics One bilateral cannula used; Multiple pumps per animal (2); behavioral testing (Morris water maze, probe test); tissue perfusion (hippocampus); Cannula placement verified via histological analysis; pumps primed for 24 hours in 37C saline; bilateral infusion;.

Q3730: M. D. Opal, *et al.* Serotonin 2C receptor antagonists induce fast-onset antidepressant effects. *Molecular Psychiatry* 2014;19(1106-1114

ALZET Comments: SB 242084; DMSO; saline; CSF/CNS (ventral tegmental area); Mice; 5 days; Control animals received mp w/ vehicle; animal info (6-10 wks old, female, BALB/cJ); Plastics One bilateral cannula used; 5% DMSO used.

Q3211: A. R. Nelson, *et al.* Noradrenergic Sympathetic Sprouting and Cholinergic Reinnervation Maintains Non-Amyloidogenic Processing of A β . *JOURNAL OF ALZHEIMERS DISEASE* 2014;38(4):867-879

ALZET Comments: Amyloid, protein β ; CSF/CNS (hippocampus); Rat; 14, 28 days; Animal info (Sprague-Dawley, 2-5 mo old, adult, male); Plastics One bilateral cannula used; neurodegenerative (Alzheimer's disease); bilateral infusion;.

Q4611: Q. Liu, *et al.* Interaction between interleukin-1 beta and angiotensin II receptor 1 in hypothalamic paraventricular nucleus contributes to progression of heart failure. *J Interferon Cytokine Res* 2014;34(11):870-5

ALZET Comments: Losartan; interleukin-1, β ; CSF, artificial; CSF, artificial; CSF/CNS; rats; 2004; 4 weeks; Controls: sham rats w/ no treatment; rats given artificial CSF; animal info (Male Sprague-Dawley rats, 200-250 g); functionality of mp verified by echocardiography and plasma levels; bilateral cannula used; Plastics One double cannula; cardiovascular; heart failure; brain tissue distribution; Cannula placement verified via brain coordinates; LOS aka losartan; IL-1 β aka interleukin-1 β ; Dose: LOS 200ug/day, IL-1 β 1ug/day; Resultant plasma level (pg 872-874); Brain coordinates; pg. 871 (2.0mm posterior to the bregma and 8.5mm ventral from the skull surface).

Q3966: H. B. Li, *et al.* Chronic infusion of lisinopril into hypothalamic paraventricular nucleus modulates cytokines and attenuates oxidative stress in rostral ventrolateral medulla in hypertension. *TOXICOLOGY AND APPLIED PHARMACOLOGY* 2014;279(141-149

ALZET Comments: Lisinopril; CSF, artificial; CSF/CNS (paraventricular nucleus); Rat; 1004; 4 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 7 weeks old, 275-300g); functionality of mp verified by ACE expression in PVN; bilateral cannula used; post op. care (buprenorphine); Cannula placement verified via histological identification; bilateral infusion; cannula fixed to skull using dental acrylic and two stainless steel screws; bp measured using tail-cuff;.