



**Recent References (2019 – Present) on Bilateral CNS Infusion
Using ALZET® Osmotic Pumps**

Q10868: T. Zhang, *et al.* Mitigation of Memory Impairment with Fermented Fucoidan and lambda-Carrageenan Supplementation through Modulating the Gut Microbiota and Their Metagenome Function in Hippocampal Amyloid-beta Infused Rats. *Cells* 2022;11(15):

Agents: Amyloid-Beta (25-35) **Vehicle:** Water, distilled; **Route:** CSF/CNS (hippocampus); **Species:** Rat; **Pump:** Not Stated; **Duration:** 3 weeks;

ALZET Comments: Dose (0.005 mg in 300 ul); Controls received mp w/ vehicle; animal info (Sprague-Dawley Male; Weighed about 267 g); peptides; Brain coordinates (lateral -3.3 mm from bregma; posterior 2 mm from midline; ventral -2.5 mm from dura); bilateral cannula used; neurodegenerative ;

Q10284: H. Tran, *et al.* Suppression of mutant C9orf72 expression by a potent mixed backbone antisense oligonucleotide. *Nature Medicine* 2022;28(1):117-124

Agents: Oligonucleotide, antisense **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Pump:** 1007D; **Duration:** 10 days;

ALZET Comments: Dose (2.5-20 nmol/day); dose-response (dose-dependent reduction in V1 and V3 repeat-containing transcripts in both the cortex and spinal cord regions after being treated with ASO3 and ASO5); animal info (C9BAC transgenic mice); antisense oligonucleotides aka ASO; antisense (oligonucleotide); ALZET brain infusion kit 3 used; bilateral cannula used; 2.5-20 nmol/day of each ASO were continuously infused over 10 d into the right lateral ventricle of age-matched heterozygous C9BAC mice through a cannula using an implanted Alzet osmotic pump tissue perfusion (brain); neurodegenerative (ALS);(FTD) Therapeutic indication (ALS, FTD); "In our C9BAC mice, we were not able to safely perform ICV bolus injections with more than 10 nmol of LNA-modified ASO3 due to induction of severe motor phenotypes. To overcome this limitation, we use osmotic pumps to compare the potency of ASO3 and ASO5" pg3; gene therapy

Q10693: W. Q. Tang, *et al.* Virus-Mediated Decrease of LKB1 Activity in the mPFC Diminishes Stress-Induced Depressive-Like Behaviors in Mice. *Biochemical Pharmacology* 2022;197(114885

Agents: Virus, adeno-associated **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (0.2 ul/min); animal info (8 weeks old; Male; Weighed 23-25 g; 50 weeks old CD1 mice male and female); behavioral testing (Forced swim test; Tail suspension test; Sucrose preference test; Social interaction test); bilateral cannula used; dental cement used; gene therapy; Therapeutic indication (Depression);

Q10608: E. Montalban, *et al.* Translational Profiling of Mouse Dopaminoceptive Neurons Reveals Region-Specific Gene Expression, Exon Usage, and Striatal Prostaglandin E2 Modulatory Effects. *Molecular Psychiatry* 2022;27(4):2068-2079

Agents: Misoprostol; Haloperidol **Vehicle:** PBS; Saline; **Route:** IP; CSF/CNS (intracerebral); **Species:** Mice; **Pump:** 1004; 2004; **Duration:** 1004; 2004;

ALZET Comments: animal info (D2-TRAP; C57BL/6 mice Wild-type Male; Female; Transgenic); behavioral testing (rotarod/food-cued Y maze); bilateral cannula used; neurodegenerative (Parkinson's; Addiction; Schizophrenia); Therapeutic indication (Neuromodulators);

Q10227: E. D. Levin, *et al.* Chronic infusions of mecamlamine into the medial habenula: Effects on nicotine self-administration in rats. *Behavioural Brain Research* 2022;416(113574

Agents: Mecamlamine **Vehicle:** CSF, artificial; **Route:** Not Stated; **Species:** Rat; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Dose: (0.27 ul/h); Controls received mp w/ vehicle; animal info: young adult female Sprague-Dawley rats; Brain coordinates (From bregma for anterior-posterior and medial-lateral and from the cortical surface for dorsal-ventral, the stereotaxic coordinates for the medial habenula were ±0.4 mm medial-lateral, ? 2.4 mm anterior-posterior, and ? 4.7 mm dorsal-ventral); bilateral cannula used; dental cement used;



Q10560: B. Joubert, *et al.* Human CASPR2 Antibodies Reversibly Alter Memory and the CASPR2 Protein Complex. *Annals of Neurology* 2022;91(6):801-813

Agents: CSF **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Pump:** 1002; **Duration:** Not Stated;

ALZET Comments: animal info (C57BL6/J; Male; 55 total; 8-10 weeks old; Weighed 25-30 g); behavioral testing (Novel object location; Locomotor activity; Sucrose preference; Open field; Rotarod test); multiple pumps per animal (2); bilateral catheters used; brain coordinates: (0.02 mm anterior and 1.00 mm lateral from bregma, depth 0.22 mm); cannula placement verified via methylene blue; dental cement used

Q10811: C. H. Ji, *et al.* Hippocampal MSK1 Regulates the Behavioral and Biological Responses of Mice to Chronic Social Defeat Stress: Involving of the BDNF-CREB Signaling and Neurogenesis. *Biochemical Pharmacology* 2022;195(114836

Agents: Virus, adeno-associated **Vehicle:** Not Stated; **Route:** CSF/CNS (hippocampus); **Species:** Mice; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (0.2 ul/min); animal info C57BL/6J (Adult; Male; 8 weeks old; Weighed 22-24 g); Brain coordinates: (AP= -2.3mm, ML= +/- 1.6mm, DV = 1.8mm); bilateral cannula used; dental cement used; Therapeutic indication (Depression); gene therapy

Q10760: C. H. Ji, *et al.* Hippocampal MSK1 Regulates the Behavioral and Biological Responses of Mice to Chronic Social Defeat Stress: Involving of the BDNF-CREB Signaling and Neurogenesis. *Biochemical Pharmacology* 2022;195(114836

Agents: Virus, adeno-associated **Vehicle:** Not Stated; **Route:** CSF/CNS (hippocampus); **Species:** Mice; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: animal info (Adult; C57BL/6J CD1; 8 weeks old; Weighed 22-24 g; CD1 male and female mice; 50 weeks old; Weighed 35-38 g); behavioral testing (Forced swim test; Tail suspension test; Sucrose preference test; Social interaction test); AAV aka Adeno-associated virus; bilateral cannula used; Brain coordinates: AP = -2.3 mm, ML = +/- 1.6 mm, DV = 1.8 mm); dental cement used; Therapeutic indication (Depression);

Q10427: Y. M. Chen, *et al.* Hippocampal F3/Contactin plays a role in chronic stress-induced depressive-like effects and the antidepressant actions of vortioxetine in mice. *Biochemical Pharmacology* 2022;202(115097

Agents: Virus, adeno-associated **Vehicle:** Not Stated; **Route:** CSF/CNS (hippocampus); **Species:** Mice; **Pump:** Not Stated; **Duration:** 2 weeks;

ALZET Comments: animal info (Male; 8 weeks old; Weighed 23-25 g; Male and Female; 50 weeks old; Weighed 35--38 g); behavioral testing (Chronic social defeat stress; Chronic restraint stress; Forced swim test; Tail suspension test; Sucrose preference test; Social interaction test); Brain coordinates (Hippocampus -2.3 mm anteroposterior; 1.6 mm medialateral; 1.8 mm dorsoventral); bilateral cannula used; dental cement used; toxicology; Therapeutic indication (Depression);

Q10396: S. Alvente, *et al.* Pilot Study of the Effects of Chronic Intracerebroventricular Infusion of Human Anti-IgLON5 Disease Antibodies in Mice. *Cells* 2022;11(6):1024-1048

Agents: Pt-IgG; Ctrl-IgG **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 10.3390/cells11061024;

ALZET Comments: Dose (0.25 µL/h); animal info (19-22 weeks old; Female); behavioral testing (Water-licking behavior); Pt-IgG aka human anti-IgLON5 IgG, Ctrl-IgG aka IgG from patient without IgLON5 disease; Brain coordinates (0.6 mm posterior and 1 mm lateral to bregma at a depth of 2 mm); bilateral cannula used; dental cement used

Q10784: L. Wang, *et al.* Coupling of GPR30 Mediated Neurogenesis and Protection With Astroglial Aromatase-STAT3 Signaling in Rat Hippocampus After Global Cerebral Ischemia. *Molecular and Cellular Endocrinology* 2021;535(111394

Agents: G1 **Vehicle:** DMSO; Cotton Oil; **Route:** CSF/CNS (ventricle); **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose: (3 ug/day); 0.1% DMSO; 0.9% Saline vehicle used Controls received mp w/ vehicle; animal info: Adult (3-month-old) Sprague-Dawley female rats bilateral OVX; G1- aka G protein-coupled receptor 30 agonist; ALZET brain infusion kit 1 used; Brain coordinates (2.5-4.5 mm posterior from bregma);



Q9846: Y. Zhang, *et al.* WWP2 regulates SIRT1-STAT3 acetylation and phosphorylation involved in hypertensive angiopathy. *Journal of Cellular and Molecular Medicine* 2020;24(16):9041-9054

Agents: miR-155 inhibitor **Vehicle:** CSF, Artificial; **Route:** CSF/CNS; **Species:** Rat; **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, 200-250 g); antisense (5'AAU UAC GAU UAG CAC UAU CCC CA-3'); ALZET brain infusion kit XX used; Brain coordinates (3.7mm posterior to the bregma, 4.1mm lateral to the midline, and 3.5mm under the dura); bilateral cannula used; dental cement used; neurodegenerative (Intracerebral Hemorrhage);

Q9847: W. Zhang, *et al.* A blockade of microRNA-155 signal pathway has a beneficial effect on neural injury after intracerebral haemorrhage via reduction in neuroinflammation and oxidative stress. *Archives of Physiology and Biochemistry* 2020;1-7

Agents: miR-155 inhibitor **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Rat; **Pump:** Not Stated; **Duration:** 1 day;
ALZET Comments: Dose (0.25 ul/hr); Controls received mp w/ vehicle; animal info (Sprague Dawley, 200-250 g, Male); enzyme inhibitor (miR-155 inhibitor); ALZET brain infusion kit XX used; Brain coordinates (3.7 mm posterior to the bregma, 4.1 mm lateral to the midline, and 3.5 mm under the dura); bilateral cannula used; dental cement used; neurodegenerative (Brain Injury);

Q10027: Q. Yang, *et al.* Blockade of c-Src Within the Paraventricular Nucleus Attenuates Inflammatory Cytokines and Oxidative Stress in the Mechanism of the TLR4 Signal Pathway in Salt-Induced Hypertension. *Neuroscience Bulletin* 2020;36(4):385-395

Agents: TAK-242 **Vehicle:** CSF, Artificial; **Route:** CNS/CSF (Hypothalamic paraventricular nucleus); **Species:** Rat; **Pump:** 2004; **Duration:** 14 days;
ALZET Comments: Dose (0.25 uL/h); Controls received mp w/ vehicle; animal info (Male Dahl salt-sensitive rats, 150-200 g); post op. care (buprenorphine); Blood pressure measured via tail cuff method; 103 mmHg - 168 mmHg; TAK-242 aka selective TLR4 blocker; Brain coordinates (1.8 mm posterior to bregma, 0.4 mm from midline, and 7.9 mm below the skull surface); bilateral cannula used; dental cement used; cardiovascular;

Q9907: H. Yang, *et al.* TLR4/MyD88/NF-kappaB Signaling in the Rostral Ventrolateral Medulla Is Involved in the Depressor Effect of Candesartan in Stress-Induced Hypertensive Rats. *ACS Chemical Neuroscience* 2020;11(19):2978-2988

Agents: VIPER or Candesartan **Vehicle:** CSF, artificial; **Route:** CNS/CSF; **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;
ALZET Comments: Dose (VIPER-40 ug/kg/day or Candesartan-4 ug/day); Controls received mp w/ vehicle; animal info (7 weeks old, Male, Sprague Dawley); VIPER aka TLR4 Inhibitor Candesartan aka AT1R antagonist ; enzyme inhibitor (TLR4 Inhibitor); Brain coordinates (0.5 mm caudal to bregma, 1.5 mm lateral to the midline, and 2.7 mm below the skull surface); bilateral cannula used; cardiovascular;

Q9772: N. J. D. Wright. A Novel Preclinical Rat Model of Alzheimer's Disease. *Neuromethods* 2020;

Agents: Amyloid-Beta 1-42 Peptides **Vehicle:** Not Stated; **Route:** CSF/CSN; **Species:** Rat; **Pump:** Not Stated; **Duration:** 14 days;
ALZET Comments: Dose (160 pmol/day); animal info (Male, Wistar,); behavioral testing (Water Maze Test); peptides; Brain coordinates (AP: -0.3, L: 1.2, V: 4.5); bilateral cannula used; dental cement used; neurodegenerative (Alzheimer's Disease);

Q9956: W. H. Walker, 2nd, *et al.* Social enrichment attenuates chemotherapy induced pro-inflammatory cytokine production and affective behavior via oxytocin signaling. *Brain, Behavior, and Immunity* 2020;89(451-464

Agents: Oxytocin, Selective Oxytocin Antagonist **Vehicle:** CSF artificial; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 1004; **Duration:** 14 days;
ALZET Comments: Dose (OT- 40 or 100 ng, OTA- 500 ng); Controls received mp w/ vehicle; animal info (Female, Balb/C, 8 weeks or older); Oxytocin aka OT or Selective Oxytocin Antagonist aka OTA ; ALZET brain infusion kit 3 used; Brain coordinates (+0.02 posterior, -0.95 lateral, -2.75 mm for bregma); bilateral cannula used; cancer (Chemotherapy);

Q9983: Y. Sun, *et al.* Modulation of the Astrocyte-Neuron Lactate Shuttle System contributes to Neuroprotective action of Fibroblast Growth Factor 21. *Theranostics* 2020;10(18):8430-8445

Agents: Fibroblast Growth Factor 21 **Vehicle:** Not Stated; **Route:** CNS/CSF; **Species:** Mice; **Pump:** Duration: 14 days;
ALZET Comments: Dose (0.4 ug/day); Controls received mp w/ vehicle; animal info (6 month old); Fibroblast Growth Factor 21 aka FGF21 ; Brain coordinates (0.1 mm anteroposterior to bregma; 0.9 mm lateral from midline; 2.5 mm below the dura); bilateral cannula used; neurodegenerative (Alzheimer's Disease);



Q8955: J. Sorrell, *et al.* The central melanocortin system mediates the benefits of time-restricted feeding on energy balance. *Physiology & Behavior* 2020;227(113132

Agents: Leptin **Vehicle:** Saline; **Route:** CSF/CSN; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose (1 ug/day); 0.9% Saline used; Controls received mp w/ vehicle; animal info (Male, C57BL/6J); Brain coordinates (0.7 mm posterior, 1.2 mm lateral, and 2.5 mm ventrally from the surface of the brain); bilateral cannula used; dependence;

Q8957: D. K. Singh, *et al.* Testosterone Acts Within the Medial Amygdala of Rats to Reduce Innate Fear to Predator Odor Akin to the Effects of Toxoplasma gondii Infection. *Frontiers in Psychiatry* 2020;11(630

Agents: Testosterone **Vehicle:** CSF, artificial; **Route:** CSF/CSN; **Species:** Rat; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Controls received mp w/ vehicle; animal info (Male, Wistar); Brain coordinates (AP = -3.0, L = ±3.8, v = -7.0); bilateral cannula used; dependence;

Q8813: Y. Qin, *et al.* Estradiol Replacement at the Critical Period Protects Hippocampal Neural Stem Cells to Improve Cognition in APP/PS1 Mice. *Frontiers in Aging Neuroscience* 2020;12(240

Agents: p75 NTR metalloprotease inhibitor **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days;

ALZET Comments: Dose (0.25 ul/hr); Controls received mp w/ vehicle; animal info (APP/PS1, 4-10 months old); p75 NTR metalloprotease inhibitor aka TAPI-2 ; enzyme inhibitor (p75 NTR metalloprotease inhibitor); Brain coordinates (0.3 mm posterior, 1.0 mm lateral, and 2.3 mm ventral to Bregma); bilateral cannula used; neurodegenerative (Alzheimer's Disease);

Q8563: N. Kajitani, *et al.* Prefrontal cortex infusion of beta-hydroxybutyrate, an endogenous NLRP3 inflammasome inhibitor, produces antidepressant-like effects in a rodent model of depression. *Neuropsychopharmacology Reports* 2020;40(2):157-165

Agents: Beta-hydroxybutyrate **Vehicle:** PBS; **Route:** CSF/CNS (frontal cortex); **Species:** Rat; **Pump:** 2006; **Duration:** 21 days;

ALZET Comments: Dose (80 mg/mL); Controls received mp w/ vehicle; animal info (Male Sprague-Dawley rats, 7-8 weeks of age); behavioral testing (forced swim test; open field test); Multiple pumps per animal (2 pumps); Beta-hydroxybutyrate aka BHB; Brain coordinates (coordinates: anteroposterior + 3.2 mm, dorsolateral ± 0.6 mm from bregma, ventral 4.0 mm from the skull surface); bilateral cannula used; neurodegenerative (Depression);

Q8760: Z. Hai-Na, *et al.* Atorvastatin ameliorates depressive behaviors and neuroinflammatory in streptozotocin-induced diabetic mice. *Psychopharmacology (Berl)* 2020;237(3):695-705

Agents: Atorvastatin **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** 3 weeks;

ALZET Comments: Dose (1 ug or 5 ug); animal info (Male, C57BL/6, 25-30 g, 2 months old); behavioral testing (Open Field Test, Tail Suspension Test, Sucrose Preference Test, Novelty Suppressed Feeding Test); Brain coordinates ((- 0.7 mm posterior to the bregma; ± 1.2 mm lateral to the sagittal; 2.0 mm below dura); bilateral cannula used; immunology;

Q9783: R. Dhaher, *et al.* Oral glutamine supplementation increases seizure severity in a rodent model of mesial temporal lobe epilepsy. *Nutritional Neuroscience* 2020;1-6

Agents: Methionine Sulfoximine **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose (0.625 ug/hr); Controls received mp w/ vehicle; animal info (Male, Sprague Dawley, 280-400 g); Methionine Sulfoxine aka MSO; enzyme inhibitor (Glutamine Synthetase Inhibitor); Brain coordinates (AP 7.8 mm, ML 5.2 mm, DV -6.5 mm); bilateral cannula used; neurodegenerative (Epileptogenesis);

Q9568: Y. M. Chen, *et al.* Inhibition of Hypothalamic Inhibitor kappaB Kinase beta/Nuclear Transcription Factor kappaB Pathway Attenuates Metabolism and Cardiac Dysfunction in Type 2 Diabetic Rats. *Neuroendocrinology* 2020;110(11-12):899-913

Agents: IKKβ inhibitor SC-514 **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2006; **Duration:** Not Stated;

ALZET Comments: "Dose (4.5 mg/mL); animal info (Male, Sprague Dawley, 8 weeks old); Brain coordinates (bregma: 3.4-3.6 mm posterior, 0.1-0.2 mm lateral, and 9.7-10 mm ventral to the dura); bilateral cannula used; dental cement used; immunology; "



Q8699: S. Beesley, *et al.* D-serine mitigates cell loss associated with temporal lobe epilepsy. *Nat Commun* 2020;11(1):4966

Agents: D-serine **Vehicle:** CSF, artificial; **Route:** CNS/CSF; **Species:** Rat; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (0.1 μ L/hr); Controls received mp w/ vehicle; bilateral cannula used; dental cement used; neurodegenerative (Epilepsy);

Q8697: J. Baecker, *et al.* Treatment with the Neurotrophic Protein S100B Increases Synaptogenesis after Traumatic Brain Injury. *J Neurotrauma* 2020;37(8):1097-1107

Agents: S100 calcium-binding protein B **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 1007D; **Duration:** 1 week;

ALZET Comments: Dose (50 ng/hr); Controls received mp w/ vehicle; animal info (Male, Sprague Dawley, 250-300 g); S100 calcium-binding protein B aka S100B; ALZET brain infusion kit 3 used; Brain coordinates (0.8mm behind bregma, 1.5mm lateral to midline, 3–4mm beneath the surface of the skull); bilateral cannula used; dental cement used; neurodegenerative (Traumatic Brain Injury);

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

Agents: S-Methyl-L-thiocitrulline **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose (0.5 \pm 0.1 μ 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;

Q9036: W. Zhang, *et al.* Role of microRNA-155 in modifying neuroinflammation and gamma-aminobutyric acid transporters in specific central regions after post-ischaemic seizures. *Journal of Cellular and Molecular Medicine* 2019;23(8):5017-5024

Agents: MiR-Inhibitor **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Rat; **Pump:** Not Stated; **Duration:** 1 day;

ALZET Comments: Animal info (Male, Sprague-Dawley, 200-250 g); ALZET brain infusion kit XX used; Brain coordinates (3.7 mm posterior to the bregma, 4.1 mm lateral to the midline, and 3.5 mm under the dura); bilateral cannula used; neurodegenerative (Seizure);

Q6949: T. Zera, *et al.* Microglia and brain angiotensin type 1 receptors are involved in desensitizing baroreflex by intracerebroventricular hypertonic saline in male Sprague-Dawley rats. *Autonomic Neuroscience: Basic and Clinical* 2019;217(49-57)

Agents: Minocycline, Losartan **Vehicle:** Saline, iso-osmotic, Saline, hyperosmotic; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Pump:** 2ML2; **Duration:** 2 weeks;

ALZET Comments: Dose (Minocycline–5 μ g/h; Losartan– 12.5 μ 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;

Q9908: J. B. Yang, *et al.* Infusion of Melatonin Into the Paraventricular Nucleus Ameliorates Myocardial Ischemia–Reperfusion Injury by Regulating Oxidative Stress and Inflammatory Cytokines. *Journal of Cardiovascular Pharmacology* 2019;

Agents: Melatonin **Vehicle:** CSF, artificial; **Route:** CNS/CSF; **Species:** Rat; **Pump:** 1004; **Duration:** 1 week;

ALZET Comments: "Dose (0.025 μ g/hr); Controls received mp w/ vehicle; animal info (Male, Sprague Dawley, 220-285 g); Melatonin aka Mel; Brain coordinates (1.8 mm caudal from bregma, 0.4 mm lateral to the midline, and 7.9 mm ventral to the dorsal surface); bilateral cannula used; ischemia (Myocardial); "

Q9060: X. Wang, *et al.* Neuronal NMDAR Currents of the Hippocampus and Learning Performance in Autoimmune Anti-NMDAR Encephalitis and Involvement of TNF-alpha and IL-6. *Frontiers in Neurology* 2019;10(684)

Agents: Tumor necrosis factor- α ; Interleukin-6 **Vehicle:** CSF **Route:** CSF/CNS **Species:** Rat **Pump:** Not Stated **Duration:** 7 days

ALZET Comments: Dose (5 μ g); Controls received mp w/ vehicle; animal info (Male, Sprague Dawley, 200-250 g); Tumor necrosis factor- α aka TNF- α , Interleukin-6 aka IL-6; ALZET brain infusion kit XX used; bilateral cannula used; dental cement used; neurodegenerative (Seizure);



Q7634: B. P. Tooke, *et al.* Hypothalamic POMC or MC4R deficiency impairs counterregulatory responses to hypoglycemia in mice. *Mol Metab* 2019;20(194-204

Agents: Insulin; Melanotan **Vehicle:** PBS; **Route:** SC; CSF/CNS (Paraventricular Nucleus of Hypothalamus); **Species:** Mice; **Pump:** 2002; 1002; **Duration:** 14 days;

ALZET Comments: Dose (10 U/kg/day); Controls received mp w/ vehicle; Brain coordinates (bregma: anteroposterior, 0.70; mediolateral, 0.22; dorsoventral, 4.80 mm); bilateral cannula used; diabetes; BIK: Plastics1, 3280PD/V/SPC;

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

Agents: Berberine **Vehicle:** CSF, artificial; **Route:** CSF/CNS (Paraventricular nucleus); **Species:** Rat; **Pump:** 2006; **Duration:** 28d

ALZET Comments: Dose (2 µg / h); Controls received mp w/ vehicle; animal info (adult male Sprague-Dawley rats (240–280 g).); bilateral cannula used;

Q9083: S. Teng, *et al.* Inhibition of EphA/Ephrin-A signaling using genetic and pharmacologic approaches improves recovery following traumatic brain injury in mice. *Brain Injury* 2019;33(10):1385-1401

Agents: EphA6-Fc **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose (2 ug/day); animal info (Mae, 10-12 weeks old,); EphA6-Fc aka EphA6 antagonist; ALZET brain infusion kit 3 used; bilateral cannula used; cyanoacrylate adhesive; neurodegenerative (Traumatic Brain Injury);

Q9082: M. Telles-Longui, *et al.* Alpha7 nicotinic ACh receptors are necessary for memory recovery and neuroprotection promoted by attention training in amyloid-beta-infused mice. *British Journal of Pharmacology* 2019;176(17):3193-3205

Agents: (1-42) AB Peptide; (1--42) AB Peptide; Methyllycaconitine **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: Dose (0.11 ul/hr); Controls received mp w/ vehicle; animal info (C57BL/6, 2 months old); post op. care (Indomethacin); Methyllycaconitine aka MLA; peptides; ALZET brain infusion kit 1 used; Brain coordinates (–0.8 mm anteroposterior, –1.4 mm mediolateral to the bregma, and –3.5 mm dorsoventral to the cranium ()); bilateral cannula used; neurodegenerative (Alzheimer's Disease);

Q9047: H. Suzuki, *et al.* Helicobacter pylori Vacuolating Cytotoxin A Causes Anorexia and Anxiety via Hypothalamic Urocortin 1 in Mice. *Scientific Reports* 2019;9(1):6011

Agents: Vacuolating cytotoxin A **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2004; **Duration:** Not Stated;

ALZET Comments: Dose (0.06, 0.18, or 0.6 pmol/kg); Controls received mp w/ vehicle; animal info (C57BL/6J, 7 weeks old, 20-25 g, Male); Vacuolating Cytotoxin A aka VacA; Brain coordinates (0.5 mm posterior to the bregma, 1.0 mm right lateral to the midline, and 2.5 mm below the outer surface of the skull); bilateral cannula used; dental cement used; dependence;

Q7671: L. Sun, *et al.* MicroRNA-211-5p Enhances Analgesic Effect of Dexmedetomidine on Inflammatory Visceral Pain in Rats by Suppressing ERK Signaling. *J Mol Neurosci* 2019;68(1):19-28

Agents: Dexmedetomidine **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 1 week;

ALZET Comments: Dose (25 ug/mL); Controls received mp w/ vehicle; animal info (Sprague Dawley, Male, 400 g); Dexmedetomidine aka DEX; enzyme inhibitor (α2 adrenergic receptor agonist); bilateral cannula used; dependence;

Q9985: L. Sun, *et al.* Inhibition of microRNA-155 Alleviates Neurological Dysfunction Following Transient Global Ischemia and Contribution of Neuroinflammation and Oxidative Stress in the Hippocampus. *Current Pharmaceutical Design* 2019;25(40):4310-4317

Agents: miR-155 Inhibitor **Vehicle:** Not Stated; **Route:** CNS/CSF; **Species:** Rat; **Pump:** **Duration:** 24, 96 hours;

ALZET Comments: Dose (0.25 ul/hr); animal info (Male, Sprague Dawley, 200-250 g); peptides; ALZET brain infusion kit Not Stated used; Brain coordinates (3.7 mm posterior to the bregma, 4.1 mm lateral to the midline, and 3.5 mm under the dura); bilateral cannula used; dental cement used; ischemia (Global);



Q7670: M. Su, *et al.* Mechanisms Associated with Type 2 Diabetes as a Risk Factor for Alzheimer-Related Pathology. *Mol Neurobiol* 2019;56(8):5815-5834

Agents: AB42 peptide **Vehicle:** CSF/CNS; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 7 days;

ALZET Comments: Dose (0.5 μ l/h); animal info (Male, Sprague Dawley, 300 g); peptides; Brain coordinates (Bregma 1.3 mm; midline 1.8 mm; depth 3.0 mm from the brain surface); bilateral cannula used; cyanoacrylate adhesive; neurodegenerative (Alzheimer's Disease);

Q9045: A. D. Snow, *et al.* The Amazon rain forest plant *Uncaria tomentosa* (cat's claw) and its specific proanthocyanidin constituents are potent inhibitors and reducers of both brain plaques and tangles. *Scientific Reports* 2019;9(1):561

Agents: B-amyloid inhibitor **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Dose (8 mg/ml); Controls received mp w/ vehicle; animal info (6-8 months old); B-amyloid inhibitor aka PTI-777; enzyme inhibitor (B-amyloid inhibitor); Brain coordinates (AP -1.7; ML 3.0; DV -3.0); bilateral cannula used; neurodegenerative (Alzheimer's Disease);

Q9074: A. K. Singha, *et al.* Glucose-Lowering by Leptin in the Absence of Insulin Does Not Fully Rely on the Central Melanocortin System in Male Mice. *Endocrinology* 2019;160(3):651-663

Agents: Leptin **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (2.5 ng/hr/0.11 μ L); Controls received mp w/ vehicle; animal info (3-6 months old, Male, greater than 25 g); Brain coordinates (20.34 mm from the bregma, 1 mm lateral (right side), 22.5 mm from the skull); bilateral cannula used;

Q9771: G. Rodriguez, *et al.* Disruption of NMDAR Function Prevents Normal Experience-Dependent Homeostatic Synaptic Plasticity in Mouse Primary Visual Cortex. *The Journal of Neuroscience* 2019;39(39):7664-7673

Agents: D-4- [(2E)-3-phosphono-2-propenyl]-2-piperazinecarboxylic acid **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 2 days;

ALZET Comments: Dose (10 μ M); Controls received mp w/ vehicle; animal info (NR1 flox); D-4- [(2E)-3-phosphono-2-propenyl]-2-piperazinecarboxylic acid aka NMDAR antagonist; Brain coordinates (-0.22 mm posterior, 1 mm lateral from bregma to target the lateral cerebral ventricle); bilateral cannula used; dental cement used; neurodegenerative (Synaptic scaling and sliding threshold);

Q8820: M. Ratcliff, *et al.* Calorie restriction activates new adult born olfactory-bulb neurones in a ghrelin-dependent manner but acyl-ghrelin does not enhance subventricular zone neurogenesis. *Journal of Neuroendocrinology* 2019;31(7):e12755

Agents: Acyl-ghrelin **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2001; **Duration:** 7 days;

ALZET Comments: Dose (48 μ g/day); Controls received mp w/ vehicle; animal info (14 weeks old, Male, GHSr-eGFP); bilateral cannula used; neurodegenerative (Neurogenesis);

Q8817: G. Ramadori, *et al.* S100A9 extends lifespan in insulin deficiency. *Nature Communications* 2019;10(1):3545

Agents: Leptin **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 10 days;

ALZET Comments: Dose (227 ng/ μ L); 0.9% Saline used; Controls received mp w/ vehicle; animal info (Male); Brain coordinates (-0.34 mm from the bregma, \pm 1mm lateral, -2.5mm from the skull); bilateral cannula used; diabetes;

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;

Agents: Wnt7a, Wnt5a, Dkk-1 **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2004; **Duration:** 11 days;

ALZET Comments: Dose (0.25 μ 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 ();

Q7610: T. Odaira, *et al.* Mechanisms underpinning AMP-activated protein kinase-related effects on behavior and hippocampal neurogenesis in an animal model of depression. *Neuropharmacology* 2019;150(121-133

Agents: Peptide, zeta-inhibitor **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose (5 μ g/12 μ L/day); animal info (6- weeks old, 26-28 g); behavioral testing (Forced Swim Test, Tail-Suspension Test); ZIP aka zeta-inhibitory peptide; enzyme inhibitor (zeta-inhibitor); ALZET brain infusion kit 3 used; Brain coordinates (1.00 L, 0.22 P, 3.00 to bregma); bilateral cannula used; cyanoacrylate adhesive; dependence;



Q7563: A. Mieltska-Porowska, *et al.* Pore-former enabled seeding of tau in rats: Alleviation by memantine and lithium chloride. *J Neurosci Methods* 2019;319(47-59)

Agents: Okadaic acid **Vehicle:** CSF, artificial; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose (2.4 nm); animal info (Male, Wistar rat, 2 months old); okadaic acid aka OA; enzyme inhibitor (non-specific phosphatase inhibitor); ALZET brain infusion kit 1 used; bilateral cannula used; neurodegenerative (Alzheimer's Disease);

Q8284: L. Meng, *et al.* Osteopontin plays important roles in pulmonary arterial hypertension induced by systemic-to-pulmonary shunt. *FASEB J* 2019;33(6):7236-7251

Agents: Arg-Gly-Asp peptidomimetic antagonist **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 4 weeks;

ALZET Comments: Dose (90 mg/2 ml); Controls received mp w/ vehicle; animal info (Male, 8 weeks old, Sprague Dawley, 270-290 g); post op. care (Buprenorphine); Arg-Gly-Asp peptidomimetic antagonist aka XJ735; peptides; bilateral cannula used;

Q8268: Q. Lu, *et al.* Circulating miR-103a-3p contributes to angiotensin II-induced renal inflammation and fibrosis via a SNRK/NF-kappaB/p65 regulatory axis. *Nat Commun* 2019;10(1):2145

Agents: Angiotensin II **Vehicle:** Not stated; **Route:** SC; **Species:** Mice; **Pump:** Not stated; **Duration:** 4 weeks;

ALZET Comments: Dose (1 mg/kg/day); Controls received mp w/ vehicle; animal info (C57BL/6J); Blood pressure measured via Carotid artery cannulation; bilateral cannula used; cardiovascular;

Q8257: M. E. Lie, *et al.* GAT3 selective substrate L-isoserine upregulates GAT3 expression and increases functional recovery after a focal ischemic stroke in mice. *J Cereb Blood Flow Metab* 2019;39(1):74-88

Agents: L-isoserine **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (38 uM or 380 uM); 0.3% DMSO used; Controls received mp w/ vehicle; animal info (2-4 months old, Male, C57BL/6J); bilateral cannula used; ischemia (Stroke);

Q8252: O. Leiter, *et al.* Exercise-Induced Activated Platelets Increase Adult Hippocampal Precursor Proliferation and Promote Neuronal Differentiation. *Stem Cell Reports* 2019;12(4):667-679

Agents: Platelet factor 4 **Vehicle:** PBS; BSA; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose (100 ng/mL); 0.9% Saline used; Controls received mp w/ vehicle; animal info (8 weeks old, C57BL/6JRj, Female); Platelet factor 4 aka PF4; Brain coordinates (relative to bregma: anterior-posterior -1.3 mm; mediallateral +1.0 mm; ventral-dorsal -2.2 mm); bilateral cannula used; neurodegenerative (Adult neurogenesis);

Q8251: M. L. Lehmann, *et al.* The Behavioral Sequelae of Social Defeat Require Microglia and Are Driven by Oxidative Stress in Mice. *J Neurosci* 2019;39(28):5594-5605

Agents: N-acetyl-L-cysteine **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Dose (0.5 ul/hr); Controls received mp w/ vehicle; animal info (8-10 weeks old, Male, C57BL/6N, Cx2cr1 wt/gfp); N-acetyl-L-cysteine aka NAC; ALZET brain infusion kit 3 used; Brain coordinates (0.1 mm caudal to bregma, 1.0 mm lateral to the midline, and 2.4 mm below the skull); bilateral cannula used; cyanoacrylate adhesive; neurodegenerative (Chronic Social Defeat);

Q8248: G. W. Lee, *et al.* Central VEGF-A pathway plays a key role in the development of trigeminal neuropathic pain in rats. *Mol Pain* 2019;15(1744806919872602)

Agents: VEGF-A164 antibody **Vehicle:** Not stated; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** 7 days;

ALZET Comments: Dose (250 ng or 500 ng/day); Controls received mp w/ vehicle; animal info (Male, Sprague Dawley, 200-230 g); bilateral cannula used; neurodegenerative (Neuropathic pain);

Q8239: D. Lana, *et al.* Microglial distribution, branching, and clearance activity in aged rat hippocampus are affected by astrocyte meshwork integrity: evidence of a novel cell-cell interglial interaction. *FASEB J* 2019;33(3):4007-4020

Agents: Lipopolysaccharide **Vehicle:** Artificial Cerebrospinal Fluid; **Route:** CSF/CNS; **Species:** Rat; **Duration:** 4 weeks;

ALZET Comments: "Dose (1.6 ug/mL); Controls received mp w/ vehicle; animal info (Male, Wistar, 3-22 week sold); Lipopolysaccharide aka LPS ; Brain coordinates (on midline: 22.5 mm posterior to the lambda, 7 mm ventral to the dura); bilateral cannula used; neurodegenerative (Microglia Dysregulation); "



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

Agents: rno-miR-124-3p **Vehicle:** CSF, artificial; **Route:** CSF/CNS (lateral ventricle) **Species:** Rat **Pump:** 2004 **Duration:** 28 days
ALZET Comments: 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);

Q7353: K. Kuter, *et al.* Astrocyte support is important for the compensatory potential of the nigrostriatal system neurons during early neurodegeneration. *J Neurochem* 2019;148(1):63-79

Agents: Fluorocitrate; **Route:** CSF/CNS (substantia nigra pars compacta); **Species:** Rat; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Dose (2 nmol/day); Controls received mp w/ sealed catheters; animal info (Three months old male Wistar HAN rats); post op. care (antibiotic 100 IL/100 g, Lincospectin); behavioral testing (locomotion); Brain coordinates (SN pars compacta (coordinates: AP: 4.9 mm, L: +/-1.8 mm, V: 8.3 mm from bregma); bilateral cannula used; neurodegenerative (Parkinson's);

Q9273: J. Holland, *et al.* A Brain-Melanocortin-Vagus Axis Mediates Adipose Tissue Expansion Independently of Energy Intake. *Cell Reports* 2019;27(8):2399-2410 e6

Agents: Melanocortin-3; MC4r blocker **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; Rat; **Pump:** 1002, 2001, 2002;
Duration: 2 weeks, 7 days, 14 days;
ALZET Comments: Dose (1 nmol/day); Controls received mp w/ vehicle; animal info (Mice- 8-10 weeks old, Male, C57BL/6J/Rat- 257-300, g Wistar, Male); ALZET brain infusion kit 3 used; bilateral cannula used; dependence;

Q9272: U. Hoheisel, *et al.* Action potentials and subthreshold potentials of dorsal horn neurons in a rat model of myositis: a study employing intracellular recordings in vivo. *Journal of Neurophysiology* 2019;122(2):632-643

Agents: M=Minocycline **Vehicle:** Cerebrospinal fluid, artificial; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** Not Stated;
ALZET Comments: Dose (2 ug/day); Controls received mp w/ vehicle; animal info (Male, Sprague Dawley, 300-470 g); bilateral cannula used; dependence;

Q8028: Y. Hayashi, *et al.* Stem Cell-Induced Pulp Regeneration Can Be Enhanced by Administration of CCL11-Neutralizing Antibody in the Ectopic Tooth Transplantation Model in the Aged Mice. *Rejuvenation Res* 2019;22(1):51-59

Agents: Porphyromonas gingivalis lipopolysaccharide **Vehicle:** Saline **Route:** SC **Species:** Mice **Pump:** 1004 **Duration:** 28 days
ALZET Comments: Dose (2 ug/day); Controls received mp w/ vehicle; animal info (6 or 13 months old); ALZET brain infusion kit 3 used; bilateral cannula used; cyanoacrylate adhesive; neurodegenerative (Alzheimer's Disease);

Q7527: K. Hayashi, *et al.* Continuous intracerebroventricular injection of Porphyromonas gingivalis lipopolysaccharide induces systemic organ dysfunction in a mouse model of Alzheimer's disease. *Exp Gerontol* 2019;120(1-5

Agents: Porphyromonas gingivalis lipopolysaccharide **Vehicle:** Saline **Route:** SC **Species:** Mice **Pump:** 1004 **Duration:** 28 days
ALZET Comments: Dose (2 ug/day); Controls received mp w/ vehicle; animal info (6 or 13 months old); Porphyromonas gingivalis lipopolysaccharide aka Pg-LPS; ALZET brain infusion kit 3 used; bilateral cannula used; cyanoacrylate adhesive; neurodegenerative (Alzheimer's Disease);

Q7524: R. B. S. Harris. Low-dose infusions of leptin into the nucleus of the solitary tract increase sensitivity to third ventricle leptin. *American Journal of Physiology Endocrinology and Metabolism* 2019;316(5):E719-E728

Agents: Leptin **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 1004; **Duration:** 14 days;
ALZET Comments: Dose (5, 10 ng/day); 0.9% saline used; animal info (Male, Sprague-Dawley, 275-300 g); bilateral cannula used; dependence;



Q8012: A. E. Govier-Cole, *et al.* Inhibiting Bone Morphogenetic Protein 4 Type I Receptor Signaling Promotes Remyelination by Potentiating Oligodendrocyte Differentiation. *eNeuro* 2019;6(2):

Agents: LDN-193189 **Vehicle:** CSF, artificial; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Dose (400 ng/day); Controls received mp w/ vehicle; animal info (7-8 weeks old, C57BL/6); Pharmacological inhibitor aka LDN-193189 ; enzyme inhibitor (Bone morphogenetic protein 4 inhibitor); ALZET brain infusion kit 3 used; Brain coordinates (0.5 mm anterior to bregma, 0.7 mm laterally from the longitudinal midline); bilateral cannula used; cyanoacrylate adhesive;

Q8010: Y. Gong, *et al.* Increased TRPM4 Activity in Cerebral Artery Myocytes Contributes to Cerebral Blood Flow Reduction After Subarachnoid Hemorrhage in Rats. *Neurotherapeutics* 2019;16(3):901-911

Agents: Transient receptor potential melastatin-4 blocker (TRPM4) **Vehicle:** Saline; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Pump:** Not stated; **Duration:** 3,5, 7 days;
ALZET Comments: Dose (900 uL); Controls received mp w/ vehicle; animal info (Sprague Dawley, 300-350 g); TRPM4 aka 9-phenanthrol ; Brain coordinates (bregma, – 0.8 mm; lateral, 1.4 mm and depth, 4 mm); bilateral cannula used; neurodegenerative (Subarachnoid hemorrhage);

Q8006: M. J. Gerald, *et al.* Continuous infusion of an agonist of the tumor necrosis factor receptor 2 in the spinal cord improves recovery after traumatic contusive injury. *CNS Neurosci Ther* 2019;25(8):884-893

Agents: EHD2-sc-mTNFR2 **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004, 1002, 1003D; **Duration:** 28 days, 14 days, or 3 days;
ALZET Comments: Dose (10 mg/ml- 28 days, 4.4 mg/ml-14 days, 1.1 mg/ml-3 days); animal info (Adult, Female, C57BL/6, 3 months old); post op. care (buprenorphine); Agonistic specific for TNFR2 aka EHD2-sc-mTNFR2 ; ALZET brain infusion kit 3 used; bilateral cannula used; spinal cord injury;

Q7475: C. Fourier, *et al.* Brain tumor necrosis factor-alpha mediates anxiety-like behavior in a mouse model of severe obesity. *Brain, Behavior, and Immunity* 2019;77(25-36

Agents: TNF- α **Vehicle:** CSF, artificial; **Route:** CSF/CNS (third cerebral ventricle) **Species:** Mice **Pump:** 1004D **Duration:** 28 days
ALZET Comments: Dose (5 ug/kg/day); Controls received mp w/ vehicle; animal info (5 week old, Male); behavioral testing (); Brain coordinates (A= 0.3 mm, L= 1 mm, D= 2.8 mm); bilateral cannula used; dependence;

Q7473: C. Fekete, *et al.* Chronic Amyloid beta Oligomer Infusion Evokes Sustained Inflammation and Microglial Changes in the Rat Hippocampus via NLRP3. *Neuroscience* 2019;405(35-46

Agents: Amyloid, Beta 1-42; MCC950 **Vehicle:** CSF, artificial; **Route:** CSF/CNS (right lateral cerebral ventricle); **Species:** Rat; **Pump:** 2004; **Duration:** 4 weeks;
ALZET Comments: Dose (1.67 ug/d-AB 1-42, 0.167 ug/ml- MCC950); Controls received mp w/ vehicle; animal info (Male, Long Evans, 8 months old); behavioral testing (Morris water-maze,); enzyme inhibitor (NLRP3 inhibitor); Brain coordinates (D= 5.3 mm, L= 1.4 mm, AP= 0.8 mm); bilateral cannula used; neurodegenerative (Spatial Memory);

Q7472: K. Farrell, *et al.* Systemic Inhibition of Soluble Tumor Necrosis Factor with XPro1595 Exacerbates a Post-Spinal Cord Injury Depressive Phenotype in Female Rats. *J Neurotrauma* 2019;

Agents: XPro1595 **Vehicle:** Saline; **Route:** CSF/CNS (left lateral ventricle); **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Dose (10 mg/kg); Controls received mp w/ vehicle; animal info (Female, Sprague Dawley, 223-250 g); post op. care (); behavioral testing (Sucrose Preference, Novel Object Recognition, Open Field, Social Exploration, Modified forced swim test, Basso Beattie Bresnahan open field, Automated von Frey, Hargreaves' Thermal Testing,); ALZET brain infusion kit 2 used; Brain coordinates (AP: -1.0 ML, +2.0, DV: -4.0- to -3.5); bilateral cannula used; cyanoacrylate adhesive; spinal cord injury;

Q8191: B. Elibol, *et al.* Thymoquinone (TQ) demonstrates its neuroprotective effect via an anti-inflammatory action on the A β (1-42)-infused rat model of Alzheimer's disease. *Psychiatry and Clinical Psychopharmacology* 2019;29(4):379-386

Agents: Amyloid beta 1-42 **Vehicle:** NaCl saline; **Route:** CNS/CSF (hippocampus); **Species:** Rat; **Pump:** Not stated; **Duration:** 14 days;
ALZET Comments: Dose (300 pmol/day); Controls received mp w/ vehicle; animal info (Adult female Sprague Dawley rats (6-month-old)); behavioral testing (Morris Water Maze); Amyloid beta 1-42 aka A β (1-42); Brain coordinates (AP: -3,60: L: -2,00: V: -4,00 from bregma); bilateral cannula used; neurodegenerative (Alzheimer's disease);



Q7399: J. A. Blair, *et al.* CNS luteinizing hormone receptor activation rescues ovariectomy-related loss of spatial memory and neuronal plasticity. *Neurobiol Aging* 2019;78(111-120

Agents: Chorionic gonadotropin hormone, human **Vehicle:** CSF, artificial; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Pump:** 1004; **Duration:** Not Stated;

ALZET Comments: Controls received mp w/ vehicle; animal info (Female, C57Bl/6J); behavioral testing (Morris water maze); hCG aka LHR agonist; enzyme inhibitor (Luteinizing hormone inhibitor); ALZET brain infusion kit 3 used; Brain coordinates (AP=-0.5, ML= -1.1, DV= -2.5); bilateral cannula used; Cannula placement verified via injecting fast green, observing cannula track by cryosectioning ; neurodegenerative (Spatial memory);

Q7367: R. A. Augustine, *et al.* Impaired hypothalamic leptin sensitivity in pseudopregnant rats treated with chronic prolactin to mimic pregnancy. *J Neuroendocrinol* 2019;e12702

Agents: Ovine prolactin **Vehicle:** CSF, artificial; **Route:** IV; **Species:** Rat; **Pump:** 2001; **Duration:** 7 days;

ALZET Comments: Dose (2.5 ug/uL/hr); Controls received mp w/ vehicle; animal info (10 week old, female, Sprague-Dawley); bilateral cannula used; dependence;

Q7360: D. Aguado-Llera, *et al.* Improvement in inflammation is associated with the protective effect of Gly-Pro-Glu and cycloprolylglycine against Abeta-induced depletion of the hippocampal somatostatinergic system. *Neuropharmacology* 2019;151(112-126

Agents: Beta-amyloid 25-35 peptide **Vehicle:** Saline; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Pump:** Pump model not stated; **Duration:** 14 days;

ALZET Comments: Dose (0.5 ul/hr); 0.9% saline used; Controls received mp w/ vehicle; animal info (Female, Wistar, 8 weeks old, 250-280 g); bilateral cannula used; neurodegenerative (Alzheimer's disease);