



Recent References (2017-2020) on the Intracerebroventricular Administration of Agents to Mice Using ALZET® Osmotic Pumps

- Q8370:** M. Popek, *et al.* Physiology and Morphological Correlates of Excitatory Transmission are Preserved in Glutamine Transporter SN1-Depleted Mouse Frontal Cortex. *Neuroscience* 2020;446(124-136
Agents: Anti-SN1 vivo-morpholinos oligonucleotides **Vehicle:** Saline; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 1002; **Duration:** Not stated;
ALZET Comments: Dose (1.2 mg/kg/day); Controls received mp w/ vehicle; animal info (Male, C57Bl6, 30 g); peptides; Brain coordinates (AP + 2.0, ML 0.8, DV 1.5)); neurodegenerative (Glutamatergic transmission);
- Q8361:** E. E. Parks, *et al.* Interleukin 6 reduces allopregnanolone synthesis in the brain and contributes to age-related cognitive decline in mice. *J Lipid Res* 2020;61(10):1308-1319
Agents: Interleukin-6 **Vehicle:** Saline; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Dose (100 ng/day); Controls received mp w/ vehicle; animal info (Male, C57BL/6N); neurodegenerative (Alzheimer's Disease);
- Q8494:** L. Park, *et al.* tPA Deficiency Underlies Neurovascular Coupling Dysfunction by Amyloid-beta. *J Neurosci* 2020;40(42):8160-8173
Agents: PAI-039 **Vehicle:** Not stated; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Dose (42 ng/kg/min); Controls received mp w/ vehicle; animal info (10-11 months old); behavioral testing (Maze Test, Novel Object Recognition Test); enzyme inhibitor (PAI-1 inhibitor); Brain coordinates (-0.22 mm lateral, 0.8 mm, dorsal 2 mm); neurodegenerative (Alzheimer's Disease);
- Q8529:** D. W. Hampton, *et al.* HspB5 Activates a Neuroprotective Glial Cell Response in Experimental Tauopathy. *Front Neurosci* 2020;14(574
Agents: HspB5, human recomb.; Myoglobin **Vehicle:** PBS; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Dose (12.5 mg/mL); Controls received mp w/ vehicle; animal info (P301S transgenic mice (female, 8 weeks age)); ALZET brain infusion kit 3 used; Brain coordinates (0.5 mm deep, resting onto the surface of the cortex 0.75 mm laterally from the midline and 1.2 mm forward from bregma); neurodegenerative (Alzheimer's disease);
- Q8469:** A. Frisch, *et al.* Apelin Controls Angiogenesis-Dependent Glioblastoma Growth. *Int J Mol Sci* 2020;21(11):
Agents: Apelin-13 **Vehicle:** CSF, Artificial; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Dose (30 µg); Controls received mp w/ vehicle; animal info (APLNKO mice); Apelin-13 aka APLN; ALZET brain infusion kit 3 used; Brain coordinates (1 mm anterior and 1.5 mm right to the bregma); cancer (Glioblastoma);
- Q8448:** S. Dominguez-Garcia, *et al.* A novel PKC activating molecule promotes neuroblast differentiation and delivery of newborn neurons in brain injuries. *Cell Death Dis* 2020;11(4):262
Agents: EOF2 **Vehicle:** PBS; DMSO; **Route:** CNS/CSF; **Species:** Mice; **Pump:** Not stated; **Duration:** 14 days;
ALZET Comments: Dose (5µM); 0.4% DMSO used; Controls received mp w/ vehicle; animal info (CD1 male mice, 2 months old); EOF2 aka plant derived diterpene; ALZET brain infusion kit II used; gene therapy;
- Q7632:** C. Tang, *et al.* Neural Stem Cells Behave as a Functional Niche for the Maturation of Newborn Neurons through the Secretion of PTN. *Neuron* 2019;101(1):32-44 e6
Agents: Pleiotrophin **Vehicle:** PBS, Dulbecco's; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Dose (1ug/100ul); Controls received mp w/ vehicle; animal info (8-12 week old male and female mice); Pleiotrophin (PTN) aka NSC-secreted factor; Brain coordinates (2.0 mm posterior to bregma, 1.7 mm lateral to the midline, and 2.0 mm below dura.); neurogenerative (neuron maturation);
- Q8369:** G. Pirovano, *et al.* 2019;
Agents: (Iodine-123 Meitner-Auger PARP1 inhibitor **Vehicle:** PEG; PBS; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 1003D; **Duration:** 3 days;



ALZET Comments: 30% PEG/PBS used; (Iodine-123 Meitner-Auger PARP1 inhibitor aka 123 I-MAPi; enzyme inhibitor ((Iodine-123 Meitner-Auger PARP1 inhibitor); ALZET brain infusion kit 3 used; cancer (Glioblastoma);

R0384: A. A. Pieper, *et al.* Benefits of Enhancing Nicotinamide Adenine Dinucleotide Levels in Damaged or Diseased Nerve Cells. Cold Spring Harbor Symposia on Quantitative Biology 2019;

Agents: Uridine, bromodeoxy-; aminopropylcarbazole **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not stated; **Duration:** 1 week;

ALZET Comments: neurodegenerative (missing NPAS3 impaired hippocampal neurogenesis); Therapeutic indication (Missing NPAS1 inanced hippocampal neurogenesis);

Q8367: C. S. Piao, *et al.* Depression following traumatic brain injury in mice is associated with down-regulation of hippocampal astrocyte glutamate transporters by thrombin. J Cereb Blood Flow Metab 2019;39(1):58-73

Agents: Fasudil **Vehicle:** Not stated; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 2001; **Duration:** 7 days;

ALZET Comments: Dose (25 gm/kg/day); Controls received mp w/ vehicle; animal info (CD1, Male, 25-30 g); Fasudil aka selective ROCK inhibitor; enzyme inhibitor (Rho kinase inhibitor); neurodegenerative (Traumatic Brain Injury);

Q8365: R. J. Perry, *et al.* Leptin's hunger-suppressing effects are mediated by the hypothalamic-pituitary-adrenocortical axis in rodents. Proc Natl Acad Sci U S A 2019;116(27):13670-13679

Agents: Corticosterone **Vehicle:** Saline; **Route:** CNS/CSF; **Species:** Mice; **Pump:** Not stated; **Duration:** 14 days;

ALZET Comments: Dose (0.75 mg/d or 2.0 mg/d); 0.9% Saline used; animal info (8-12 weeks old, C57BL/6); diabetes;

Q7606: T. Okamoto, *et al.* Microbiome potentiates endurance exercise through intestinal acetate production. American Journal of Physiology Endocrinology and Metabolism 2019;316(5):E956-E966

Agents: Acetate; Butyrate **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2001; **Duration:** 7 days;

ALZET Comments: Dose (1 ul/h); Controls received mp w/ vehicle; animal info (Male, 10 week old, C57BL/6J); dependence;

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 ug/12 uL/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;

Q8275: A. K. Mahato, *et al.* 2019;

Agents: Glial cell line-derived nuerotrophic facor or BT13 **Vehicle:** PEG; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2002; **Duration:** 7 days;

ALZET Comments: Dose (BT13- 3-6 ug/day, GDNF-3 ug/day); 100% Propylene Glycol used; Controls received mp w/ vehicle; animal info (Male, C57Bl/6, 8-15 weeks old, 19-32 g); Glial cell line-derived nuerotrophic facor aka GDNF, BT13 aka selective activor of GFL receptor-dependent signaling, or P; ALZET brain infusion kit XX used; Brain coordinates (AP = +1.0; ML = +2.7; DV = -4.0); bilateral cannula used; dental cement used;neurodegenerative (Parkinson's Disease);

Q8264: P. Liu, *et al.* Protein kinase C is involved in the neuroprotective effect of berberine against intrastriatal injection of quinolinic acid-induced biochemical alteration in mice. J Cell Mol Med 2019;23(9):6343-6354

Agents: Pan-PKC inhibitor **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: "Dose (0.11 uL/hr); animal info (Male, 2 months old, 22-25 g, KM); Pan-PKC inhibitor aka Go6983; enzymWe inhibitor (PKC inhibitor); ALZET brain infusion kit 2 used; Brain coordinates (0.5 mm posterior to bregma, 3 mm below

the surface of the cranium); neurodegenerative (Motor and cognitive deficit); "

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; medially lateral +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);

Q8246: J. W. Lee, *et al.* Chemical Control of Mammalian Circadian Behavior through Dual Inhibition of Casein Kinase Ialpha and delta. *J Med Chem* 2019;62(4):1989-1998

Agents: Casein kinase I inhibitors **Vehicle:** Not stated; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 1004 or 1002; **Duration:** Not stated;
ALZET Comments: animal info (8 weeks old, Male, C57BL/6J); Casein kinase I inhibitors aka NCC007 and Iondaysin; enzyme inhibitor (Casein kinase I inhibitors); Brain coordinates (0.2 mm anterior, 1.4 mm lateral, and 2.2 mm from the surface of the skull); dental cement used; dependence;

Q8244: J. H. Lee, *et al.* Transgenic expression of a ratiometric autophagy probe specifically in neurons enables the interrogation of brain autophagy in vivo. *Autophagy* 2019;15(3):543-557

Agents: Chloroquine, Pan-MTOR inhibitor-21 mg/ml, or leupeptin **Vehicle:** DMSO; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 5 days (Pan-MTOR inhibitor) or 7 days (leupeptin);
ALZET Comments: Dose (Chloroquine-5 mg/kg/day, Pan-MTOR inhibitor-50 mg/kg/day, or leupeptin-4 mg/kg/day); 4% DMSO used; animal info (TRGL6, 4 months old); Pan-MTOR inhibitor aka AZD8055, leupeptin aka cysteine protease inhibitor; enzyme inhibitor (Cysteine protease inhibitor); Brain coordinates (lateral ventricle: AP – 0.3mm to bregma, ML 1.0mm to bregma, and DV 2.5 mm to cranium); neurodegenerative (Autophagy-Lysosome Pathway);

Q8233: Y. V. Kucheryavykh, *et al.* Targeted Delivery of Nanoparticulate Cytochrome C into Glioma Cells Through the Proton-Coupled Folate Transporter. *Biomolecules* 2019;9(4):

Agents: Folic acid-conjugated cytochrome c-containing nanoparticles **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2004; **Duration:** 14 days;
ALZET Comments: Dose (100 mg/mL); Controls received mp w/ vehicle; animal info (C57BL/6, 12-16 weeks old); Folic acid-conjugated cytochrome c-containing nanoparticles aka FA-CytC NPs; ALZET brain infusion kit 3 used; Brain coordinates (2 mm lateral, 1 mm caudal and 3 mm ventral a small burr hole); cancer (Glioma);

Q8041: P. Hundehage, *et al.* The next-generation sphingosine-1 receptor modulator BAF312 (siponimod) improves cortical network functionality in focal autoimmune encephalomyelitis. *Neural Regen Res* 2019;14(11):1950-1960

Agents: Sphingosine-1 receptor modulator **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not stated; **Duration:** Not stated;
ALZET Comments: Dose (0.3 or 1 ug/day); Controls received mp w/ vehicle; Sphingosine-1 receptor modulator aka BAF312; neurodegenerative (Multiple Sclerosis);

Q7530: R. J. Henry, *et al.* Inhibition of miR-155 Limits Neuroinflammation and Improves Functional Recovery After Experimental Traumatic Brain Injury in Mice. *Neurotherapeutics* 2019;16(1):216-230

Agents: miR-155 antagomir **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004D; **Duration:** 7 days;
ALZET Comments: Dose (0.5 nmol/day); 0.9% Saline used; Controls received mp w/ vehicle; animal info (C57BL/6J, Male, 10-12 weeks old); behavioral testing (Motor function test); miR-155 antagomir aka micro-RNA hairpin inhibitor; enzyme inhibitor (miR-155 hairpin inhibitor); ALZET brain infusion kit 3 used; neurodegenerative ();



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;

R0381: L. R. Galieva, *et al.* Therapeutic Potential of Extracellular Vesicles for the Treatment of Nerve Disorders. *Front Neurosci* 2019;13(163)

Agents: Extracellular vesicles, primary neuron culture-derived- **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Dose (2mg total protein of EVs/ml); neurodegenerative (Alzheimer's);

Q8001: E. Gabande-Rodriguez, *et al.* Lipid-induced lysosomal damage after demyelination corrupts microglia protective function in lysosomal storage disorders. *EMBO J* 2019;38(2):

Agents: Ca074Me **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 1 month;

ALZET Comments: Dose (1 mg/ml); 0.9% Saline used; Controls received mp w/ vehicle; animal info (ASMko, 2 months old); behavioral testing (Rotarod Test); CathB inhibitor aka Ca074Me; enzyme inhibitor (Cath B inhibitor); ALZET brain infusion kit 3 used; Brain coordinates (AP, -0.5 mm; ML, 1 mm; and DV, -2.2 mm); dependence;

Q7638: J. Enriquez Perez, *et al.* The effect of locally delivered cisplatin is dependent on an intact immune function in an experimental glioma model. *Sci Rep* 2019;9(1):5632

Agents: Cisplatin **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** 3 days;

ALZET Comments: Dose (1080, 120, or 12 ug/kg/day); 0.9% Saline used; animal info (C57BL/6, NSG, 8-10 weeks old, 18-21 weeks old); ALZET brain infusion kit 3 used; cyanoacrylate adhesive; cancer (Glioma);

Q7227: M. McMillin, *et al.* FXR-Mediated Cortical Cholesterol Accumulation Contributes to the Pathogenesis of Type A Hepatic Encephalopathy. *CMGH* 2018;6(1):47-63

Agents: Farnesoid X receptor morpholino, FXR mismatch, Cyclodextrin 2-hydroxypropyl-beta **Vehicle:** Endo-Porter solution; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Dose (2-HbC, 6 mg/kg/day; FXR morpholino 1mg/kg; FXR mismatch 1 mg/kg); animal info (C57Bl/6 mice 25–30 g); ALZET brain infusion kit used; Brain coordinates (anteroposterior -0.34, mediolateral -1.0, and dorsoventricular -2.0);

Q8096: W. Liu, *et al.* Oxidative stress-elicited YY1 potentiates antioxidative response via enhancement of NRF2-driven transcriptional activity: A potential neuronal defensive mechanism against ischemia/reperfusion cerebral injury. *Biomed Pharmacother* 2018;108(698-706)

Agents: YY1-siRNA **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not stated; **Duration:** 4 days;

ALZET Comments: animal info (Male, C57B/6, 25-35 g); Brain coordinates (mediolateral=1.0 mm, anteroposterior=0.2 mm; dorsoventral=3.1 mm); ischemia (Cerebral);

Q8094: C. B. Liu, *et al.* Lycopene mitigates beta-amyloid induced inflammatory response and inhibits NF-kappaB signaling at the choroid plexus in early stages of Alzheimer's disease rats. *J Nutr Biochem* 2018;53(66-71)

Agents: Amyloid, beta 1-42 **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not stated; **Duration:** 21 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Male, Wistar, 250-300 g); Brain coordinates (anteroposterior 1.2 mm from Bregma, mediolateral 2.0 mm, dorsoventral 4.0 mm); cyanoacrylate adhesive; neurodegenerative (Alzheimer's Disease);

Q8087: H. Lin, *et al.* Extracellular Lactate Dehydrogenase A Release From Damaged Neurons Drives Central Nervous System Angiogenesis. *EBioMedicine* 2018;27(71-85)

Agents: CD31 antibody, LHDA **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 1 week;



ALZET Comments: Dose (0, 10, 100 ug/kg/day-LHDA,); Controls received mp w/ vehicle; animal info (C57BL/6J); Brain coordinates (0.2 mm posterior, 2.5 mm left, and 3 mm depth from the skull surface); bilateral cannula used; cyanoacrylate adhesive; neurodegenerative (Angiogenesis);

Q7081: S. A. Jannetti, *et al.* PARP-1-Targeted Radiotherapy in Mouse Models of Glioblastoma. *J Nucl Med* 2018;59(8):1225-1233

Agents: 131I-poly(ADP-ribose) polymerase inhibitor (131I-PARPi), radio-isotope (131I) **Vehicle:** PEG 300, saline, 131I tracer; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** 5 days;

ALZET Comments: 30% PEG-300 used; animal info (6 to 8-week-old female athymic nude CrTac:NCr-Fo mice); 131I-PARPi is an 131I-labeled poly(ADP-ribose) polymerase 1 enzyme inhibitor; ALZET brain infusion kit 3 used; Brain coordinates (2 mm lateral and 1 mm anterior to the bregma); cancer (glioblastoma);

Q5585: J. Y. Choi, *et al.* K284-6111 prevents the amyloid beta-induced neuroinflammation and impairment of recognition memory through inhibition of NF-kappaB-mediated CHI3L1 expression. *J Neuroinflammation* 2018;15(1):224

Agents: Amyloid protein, beta (1-42) **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Dose (300 pmol); animal info (8-10-week-old male imprinting control region (ICR) mice); behavioral testing (Morris water maze, probe, and passive avoidance tests); ALZET brain infusion kit 1 used; Brain coordinates (- 1.0 mm anterior/posterior, + 0.5 mm medial/lateral, and - 2.5 mm dorsal/ventral);

Q7089: F. X. Blaudin de The, *et al.* Engrailed homeoprotein blocks degeneration in adult dopaminergic neurons through LINE-1 repression. *EMBO J* 2018;37(15):

Agents: Colomonic acid, RNA, small interfering (anti-Orf2p), cell-permeable peptide Penetratin-coupled siRNA **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** 3 days;

ALZET Comments: 0.9% sodium chloride used; Dose (1.5 ug/ul- colomonic acid, 5 uM- En 1/2); Controls received mp w/ vehicle; animal info (male, En1-het mice,); Brain coordinates (-3.8 mm dorso/ventral); neurodegenerative (dopaminergic neurons);

Q7172: P. Assis-Nascimento, *et al.* EphB3 signaling induces cortical endothelial cell death and disrupts the blood-brain barrier after traumatic brain injury. *Cell Death & Disease* 2018;9(1):7

Agents: EphrinB3, recomb. **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2001D; **Duration:** 24 hours;

ALZET Comments: Dose (80 ug/kg/day); post op. care (Buprenorphine (0.1 mg/kg) and saline administered post-surgery); Locite 454 cyanoacrylate adhesive; Therapeutic indication (Traumatic brain injury);

Q6531: C. Wang, *et al.* IL-17 induced NOTCH1 activation in oligodendrocyte progenitor cells enhances proliferation and inflammatory gene expression. *Nat Commun* 2017;8(15508)

Agents: Interleukin 17 receptor A **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice (knockout); **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Controls received mp w/ decoy peptide; animal info (8-12 week old female B6.129X1-Notch1tm2Rko/GridJ, Jag1tm2Grid/J and B6.Cg-Tg BAKik/J mice); Interleukin 17 receptor A aka IL-17RA; peptides; Brain coordinates (1mm lateral, 0.3mm posterior and 2mm deep to the bregma); Therapeutic indication (multiple sclerosis);

Q5956: J. Tam, *et al.* Peripheral cannabinoid-1 receptor blockade restores hypothalamic leptin signaling. *Mol Metab* 2017;6(10):1113-1125

Agents: Leptin; SHU-9119 **Vehicle:** PBS; **Route:** SC; CSF/CNS; **Species:** Mice; **Pump:** 2004; **Duration:** 12 weeks, 7 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (leptin-deficient ob/ob mice); long-term study; pumps replaced every 28 days; SHU-9119 is a MC4R antagonist; Leptin dissolved in PBS and delivered SC for 12 weeks; SHU-9119 dissolved in saline and delivered ICV for 7 days; Pumps model incorrectly listed as Model 2001D. It should be Model 2004 based on description.

Q5677: S. Stayte, *et al.* Activin A Inhibits MPTP and LPS-Induced Increases in Inflammatory Cell Populations and Loss of Dopamine Neurons in the Mouse Midbrain In Vivo. *PLoS One* 2017;12(1):e0167211

Agents: Active A, recombinant **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;



ALZET Comments: Controls received mp w/ vehicle; animal info (male, C57BL6, 11 weeks old); neurodegenerative (Parkinson's disease); Pump removed after 1 week and cannula tubing sealed with heat; Dose (295 ng/day);

Q5974: H. Shimaoka, *et al.* A cytokine signal inhibitor for rheumatoid arthritis enhances cancer metastasis via depletion of NK cells in an experimental lung metastasis mouse model of colon cancer. *Oncol Lett* 2017;14(3):3019-3027

Agents: Tofacitinib **Vehicle:** PEG 300; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2002; **Duration:** 6 days;

ALZET Comments: animal info (Wild-type CD1) ; Controls received mp w/vehicle; dose (15 mg/kg/day); cancer; enzyme inhibitor (JAK3)

Q5950: C. Quarta, *et al.* Molecular Integration of Incretin and Glucocorticoid Action Reverses Immunometabolic Dysfunction and Obesity. *Cell Metabolism* 2017;26(4):620-632 e6

Agents: Glucagon-like peptide-1, Dexamethasone **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; Dose (GLP-1: 0.1 mg/24h; Dexa: 0.0219mg/ml); animal info (20 week-old male C57bl6j); post op. care (meloxicam for post-surgical pain (3 mg/kg); ALZET brain infusion kit 3 used; Brain coordinates (anteroposterior: 0.5 mm from bregma, lateral: +/-1;2 mm to bregma and dorsoventral: 2.1 mm below skull); Therapeutic indication (obesity);

Q5882: L. Pasetto, *et al.* Targeting Extracellular Cyclophilin A Reduces Neuroinflammation and Extends Survival in a Mouse Model of Amyotrophic Lateral Sclerosis. *J Neurosci* 2017;37(6):1413-1427

Agents: MM218 Inhibitor **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2004; **Duration:** 56 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (SOD1 mice; 98 days old); pumps replaced after 28 days; ALZET brain infusion kit 3 used; post op. care (0.15 mg/kg buprenorphine as analgesic immediately before and 12 h after the surgery); behavioral testing (Rotarod test); "MM218 does not pass the blood-brain barrier (BBB), so the drug was administered intracerebroventricularly by continuous infusion using minipumps" p. 1421; MM218 is a specific inhibitor of extracellular PPIA ; Therapeutic indication (Amyotrophic Lateral Sclerosis); Dose (1 or 10 uM);

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

Agents: Ifenprodil tartrate **Vehicle:** Tartaric acid; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: 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;

Q6604: D. Z. Milikovsky, *et al.* Electrocorticographic Dynamics as a Novel Biomarker in Five Models of Epileptogenesis. *J Neurosci* 2017;37(17):4450-4461

Agents: Transforming growth factor- β 1; SJN2511; Interleukin-6; Bovine serum albumin **Vehicle:** CSF; artificial; dextran; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days;

ALZET Comments: Dose (0.4mM BSA, 100 ng/ml (TGF)- β 1, 300 μ M SJN2511); Controls received mp w/ vehicle; animal info (2- to 3-month-old FVB/N and C57BL/6 mice); SJN2511 is a selective blocker of the TGF-B type I receptor/ALK5; Brain coordinates (0.5 mm posterior, 1 mm lateral to bregma);

Q6442: C. Laloux, *et al.* Continuous cerebroventricular administration of dopamine: A new treatment for severe dyskinesia in Parkinson's disease? *Neurobiol Dis* 2017;103(24-31

Agents: Dopamine, anaerobia **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2001; **Duration:** 7 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (5 month old C57Bl/6 J mice); neurodegenerative (Parkinson's disease);

Q6448: I. Kazanis, *et al.* Subependymal Zone-Derived Oligodendroblasts Respond to Focal Demyelination but Fail to Generate Myelin in Young and Aged Mice. *Stem Cell Reports* 2017;8(3):685-700

Agents: Arabinofuranoside, cytosine b-D- **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 4 days;



ALZET Comments: Controls received mp w/ vehicle; ALZET brain infusion kit 2 used; Brain coordinates (1mm lateral to bregma);

Q5049: G. Karpel-Massler, *et al.* Induction of synthetic lethality in IDH1-mutated gliomas through inhibition of Bcl-xL. *Nat Commun* 2017;8(1):1067

Agents: hydroxyglutarate, 2-R-2- **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days; **ALZET Comments:** Dose (10mM); functionality of mp verified by adding 1% Gadolinium to the pumps and performing MRIs after removal;

Q6141: S. He, *et al.* Sequential EMT-MET induces neuronal conversion through Sox2. *Cell Discovery* 2017;3(17017)

Agents: 5C medium; IFB medium **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days; **ALZET Comments:** Controls received mp w/ vehicle; animal info (Six- to eight-week-old CD-1 (ICR) male mice); ALZET brain infusion kit 2 used; Brain coordinates (2.1 mm posterior to the bregma, lateral 1.2 and 3.2 mm to the skull);

Q5811: L. Feng, *et al.* EphA4 may contribute to microvessel remodeling in the hippocampal CA1 and CA3 areas in a mouse model of temporal lobe epilepsy. *Mol Med Rep* 2017;15(1):37-46

Agents: unclustered ephrin A5 Fc, clustered (C) ephrin A5 Fc, antibody, IgG **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** Not Stated; **ALZET Comments:** Controls received mp w/ vehicle; animal info (C57BL/6, 5-6 weeks old) ALZET brain infusion kit 3 used; no stress “All mice survived, and no apparent behavioral discomfort was observed.” (see pg. 41); Therapeutic indication (angiogenesis, Temporal lobe epilepsy); Dose (50 ug/mL);

Q6386: Dorfman MD, *et al.* Deletion of Protein Kinase C I in POMC Neurons Predisposes to Diet-Induced Obesity. *Diabetes* 2017;66(4):920-934

Agents: Leptin **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Rat; Mice; **Pump:** Not Stated; **Duration:** 14 days; **ALZET Comments:** animal info (male Wistar rats; Eight-week-old male and female POMC-IKO and WT mice); Brain coordinates (0.8 mm posterior to bregma; 1.5 mm lateral to the sagittal suture, and 3.6 mm below the skull surface); diabetes;

Q5785: S. devos. Tau reduction prevents neuronal loss and reverses pathological tau deposition and seeding in mice with tauopathy. *Science Translational Medicine* 2017;9(374):

Agents: Oligonucleotide, antisense (Tau-specific) **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** 28 days, 4 weeks; **ALZET Comments:** Controls received mp w/ scrambled ASO, or vehicle; animal info (PS19 mice); antisense (Tau-specific ASO-12); neurodegenerative (Alzheimer’s disease); Therapeutic indication (Alzheimer’s disease, tauopathy); Dose (30 ug/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

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

Q6395: K. E. Clafin, *et al.* Angiotensin AT1A receptors on leptin receptor-expressing cells control resting metabolism. *J Clin Invest* 2017;127(4):1414-1424

Agents: CSF, artificial **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** Not Stated; **ALZET Comments:** animal info (C57BL/6J mice); ALZET brain infusion kit 3 used; Brain coordinates (1.1 mm lateral, 0.5 mm caudal to bregma, and 3.0 mm ventral);

Q5941: A. Cebrian-Silla, *et al.* Unique Organization of the Nuclear Envelope in the Post-natal Quiescent Neural Stem Cells. *Stem Cell Reports* 2017;9(1):203-216

Agents: Ara-C **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** 6 days;



ALZET Comments: animal info (Wild-type CD1 mice); Ara-C is an antimitotic agent a.k.a. cytosine-b-D-arabinofuranoside;

Q5761: S. Capsoni, *et al.* The chemokine CXCL12 mediates the anti-amyloidogenic action of painless human nerve growth factor. *Brain* 2017;140(1):201-217

Agents: Nerve growth actor, human painless **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice (transgenic); **Pump:** Not Stated; **Duration:** 28 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (wt and transgenic 5xFAD); neurodegenerative (Alzheimer's disease); behavioral testing (Y-maze test); Therapeutic indication (Alzheimer's disease); Dose (.54 ug/kg);

Q6409: S. M. Brooker, *et al.* Hippocampal bone morphogenetic protein signaling mediates behavioral effects of antidepressant treatment. *Mol Psychiatry* 2017;22(6):910-919

Agents: BMP4; Noggin **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** 15 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Eight to ten week old C57Bl/6 male and female mice);