



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

Q11104: K. Karimi Galougahi, *et al.* beta3 adrenergic agonism: A novel pathway which improves right ventricular-pulmonary arterial hemodynamics in pulmonary arterial hypertension. *Physiological Reports* 2023;11(1):e15549

Agents: CL316243 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** FVB/N; **Pump:** Not Stated; **Duration:** 2 weeks; **ALZET Comments:** Dose (40µg/kg/h); Controls received mp w/ vehicle; animal info (Male Weighed 20-25 g; 10-16 weeks old); comparison of injection vs mp; comparison of gavage vs mp;receptor agonist (CL316243 is a B3 AR agonist);cardiovascular; Therapeutic indication (Pulmonary arterial hypertension);

Q11094: V. Buncha, *et al.* Mice with endothelial cell-selective adhesion molecule deficiency develop coronary microvascular rarefaction and left ventricle diastolic dysfunction. *Physiological Reports* 2023;11(6):e15643

Agents: Aldosterone **Vehicle:** UNX; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 2004; **Duration:** 4 weeks; **ALZET Comments:** Dose (0.30 µg/h); Controls received mp w/ vehicle; animal info (Male; 12-14 weeks old); Blood pressure measured via tail-cuff method; cardiovascular;

Q11066: M. Balbach, *et al.* On-demand male contraception via acute inhibition of soluble adenylyl cyclase. *Nature Communications* 2023;14(1):637

Agents: TDI-11155 **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2001; 2006; **Duration:** 7 days; 42 days;

ALZET Comments: Dose (50 mg/kg; 150 mg/kg); Controls received mp w/ vehicle; animal info (Male; Wild-type); post op. care: meloxicam; comparison of oral gavage vs mp; Blood pressure measured via tail-cuff method; TDI-11155 is a sAC-selective inhibitor

Q11061: A. Nemmar, *et al.* Impact of Intratracheal Administration of Polyethylene Glycol-Coated Silver Nanoparticles on the Heart of Normotensive and Hypertensive Mice. *International Journal of Molecular Sciences* 2023;24(10):

Agents: Angiotensin II **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice **Strain:** BALB/c; **Pump:** 2006; **Duration:** 28 days; **ALZET Comments:** Dose (0.75 mg/kg/day); 0.15 mol/L NaCl and 0.01-N acetic acid used; controls received mp w/ vehicle; animal info: both sexes, aged 8 to 10 weeks, 20 to 25 g; blood pressure measured via tail cuff; blood pressure measurement results (p.4) Fig. 2; functionality of mp verified by plasma levels; cardiovascular (hypertension)

Q11058: L. Medzikovic, *et al.* Myocardial fibrosis and calcification are attenuated by microRNA-129-5p targeting Asporin and Sox9 in cardiac fibroblasts. *JCI Insight* 2023;8(9):

Agents: Angiotensin II **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 1004; **Duration:** 4 weeks; **ALZET Comments:** Dose (1.5 mg/kg/day); controls received mp w/ vehicle; animal info (male 8- to 10-week-old; post op. care: Buprenorphine; cardiovascular; myocardial fibrosis, cardiac hypertrophy; "Chronic AngII infusion enhanced myocardial fibrosis, which was significantly lower in hearts of miR-129-5p-injected mice. We furthermore observed that chronic AngII infusion was able to induce expression of osteogenic genes Runx2 and Alp3 in the LV, both of which were significantly decreased upon miR-129-5p injections." p.8

Q11056: D. Matsiukevich, *et al.* Characterization of a robust mouse model of heart failure with preserved ejection fraction. *American Journal of Physiology Heart and Circulatory Physiology* 2023;325(2):H203-H231

Agents: Angiotensin II; phenylephrine **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 2004; 1002; **Duration:** 28 days; 3 days; 10 days;

ALZET Comments: Dose (1.5 µg/g/day ang II); (50 µg/g/day PE), pumps primed in 0.9% saline 24h 37degC; controls received mp w/ vehicle; animal info: 8- to 10-wk old; blood pressure measured via Noninvasive Methods; blood pressure measurement results see (p.212) Fig.3 L; behavioral testing (Treadmill exercise); cardiovascular (heart failure)



Q11049: S. Kumar, *et al.* Neuroprotection of Retinal Ganglion Cells Suppresses Microglia Activation in a Mouse Model of Glaucoma. *ARVO Journals* 2023;64(7):24

Agents: Meclofenamic acid **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Dose (20 mg/kg/d); animal info: adult, 3-4 months old, both sexes; pumps replaced after 4 weeks; cancer (glaucoma)

Q11048: A. Kubo, *et al.* The Influence of Nicotine on Trophoblast-Derived Exosomes in a Mouse Model of Pathogenic Preeclampsia. *International Journal of Molecular Sciences* 2023;24(13):

Agents: Nicotine hydrogen tartrate salt **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** ICR; **Pump:** 2002; **Duration:** Not Stated;

ALZET Comments: Dose (3 mg/kg/day); animal info: 8–12 weeks; blood pressure measured via Tail cuff; blood pressure results see p.3 cardiovascular; therapeutic indication (Preeclampsia);

Q10999: H. Simpson Ragdale, *et al.* Injury primes mutation-bearing astrocytes for dedifferentiation in later life. *Current Biology* 2023;33(6):1082-1098 e8

Agents: Epidermal growth factor, recombinant **Vehicle:** Saline; BSA; **Route:** CSF/CNS; **Species:** Mice; **Strain:** GFAP-CreERT2; LSL-tdTomato; p53wt; p53flox/flox; **Pump:** 1002; **Duration:** Not Stated;

ALZET Comments: Dose (60mg/ml); 0.9% saline; 1% BSA used; animal info: 2-4-month-old mice; ALZET brain infusion kit 3 used; Brain coordinates (anteroposterior -1.2, mediolateral 1.7, dorsoventral -1 relative to bregma);

Q10525: S. Fujiwara, *et al.* Age-related Changes in Trigeminal Ganglion Macrophages Enhance Orofacial Ectopic Pain After Inferior Alveolar Nerve Injury. *In Vivo* 2023;37(1):132-142

Agents: Liposomal clodronate; Liposome (control) **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 5 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (23 week old male SAMP8/SAMR1 mice; Weighed 20-30 g); Brain Coordinates (2,8 mm anterior from posterior fontanelle, 1.2 mm lateral to sagittal suture); polyethylene catheter; dental cement used; aging;

Q10473: K. A. R. Estrela, *et al.* Blocking Metabotropic Glutamate Receptor Subtype 7 via the Venus Flytrap Domain Promotes a Chronic Stress-Resilient Phenotype in Mice. *Cells* 2022;11(11):

Agents: XAP044 **Vehicle:** DMSO; Ringer's solution; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 26 days;

ALZET Comments: Dose response (100 uM, 10 uM, 1 uM); 5% DMSO used; Controls received mp w/ vehicle; animal info (Male; C57BL/6, 19-22 g); behavioral testing (Chronic Subordinate Colony Housing Paradigm; Light/Dark Box Test; Stress-Induced Hyperthermia Test); functionality of mp verified by aspirating residual volume; ALZET brain infusion kit 3 used; gene therapy; Therapeutic indication (Chronic stress-related pathology);

Q10457: K. E. Claflin, *et al.* Pharmacological FGF21 signals to glutamatergic neurons to enhance leptin action and lower body weight during obesity. *Molecular Metabolism* 2022;64(10):1564

Agents: Fibroblast growth factor 21; Leptin; Leptin antagonist **Vehicle:** Not Stated; **Route:** SC; CSF/CNS; **Species:** Mice; **Pump:** 1002; 1004; **Duration:** 2 weeks;

ALZET Comments: Dose: FGF21 (1 mg/kg/day); Leptin (250 ng/h); Leptin antagonist (8 ug/day); Controls received mp w/ vehicle; animal info: mice: DIO WT mice: 16-18-week-old WT; 12 week-old WT mice; Fibroblast growth factor 21 aka (FGF21); ALZET brain infusion kit 3 used; Brain coordinates (1 mm lateral, 0.34 mm caudal to bregma, and 2.5 mm ventral from the surface of the skull.); dental cement used; Vetbond (3 M); dependence;

Q10416: J. M. Brown, *et al.* Combined micro-osmotic pump infusion and intracerebroventricular injection to study FGF1 signaling pathways in the mouse brain. *STAR Protocols* 2022;3(2):101329

Agents: UO126 **Vehicle:** DMSO; Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** Not Stated;

ALZET Comments: Dose (30 mg); 50% DMSO and saline used; Controls received mp w/ vehicle; animal info (Male; 8 weeks old); post op. care (Buprenorphine); dental cement used; diabetes;



Q10399: P. Y. Bai, *et al.* Environmental eustress improves postinfarction cardiac repair via enhancing cardiac macrophage survival. *Science Advances* 2022;8(**Agents:** Brain-derived neurotrophic factor **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** ALZET **Comments:** animal info (3–4 weeks old; Male; Wild-type); Brain-derived neurotrophic factor aka BDNF; ALZET brain infusion kit 3 used; dental cement used; cardiovascular; Therapeutic indication (Cardiac remodeling post myocardial infarction);

Q10835: B. Xu, *et al.* An Oncolytic Virus Expressing a Full-Length Antibody Enhances Antitumor Innate Immune Response to Glioblastoma. *Nature Communications* 2021;12(1):5908
Agents: aCD47-G1 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** 72 hours;
ALZET Comments: Dose: 24 ug/day; Controls received mp w/ vehicle; animal info: Six- to eight-week-old female athymic nude mice CT2A GBM model; ALZET brain infusion kit 3 used; Brain coordinates (2mm lateral and 1mm anterior to bregma at a depth of 3 mm); immunology;

Q10064: P. Schiapparelli, *et al.* Strategies to Modulate the Blood-Brain Barrier for Directed Brain Tumor Targeting. *Nanotherapy for Brain Tumor Drug Delivery* 2021;
Agents: Not Stated **Vehicle:** Saline, sterile; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: 0.9% NaCl used; animal info (6–8-week-old mice); ALZET brain infusion kit 3 used; cancer (Brain Tumor);

Q10182: S. Hirose, *et al.* Impact of a Demyelination-Inducing Central Nervous System Virus on Expression of Demyelination Genes in Type 2 Lymphoid Cells. *Journal of Virology* 2021;95(4):
Agents: Interleukin 2 **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: animal info: C57BL/6 mice; Interleukin-2 aka (IL-2); peptides; immunology;

Q10539: M. A. Harris, *et al.* ssDNA Nanotubes For Selective Targeting Of Glioblastoma And Delivery Of Doxorubicin For Enhanced Survival. *Science Advances* 2021;7(49):
Agents: Doxorubicin **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Dose: (70 uM or 0.2 mg/kg) Controls received mp w/ vehicle; animal info: Eight-week-old mice; Doxorubicin aka (DOX) ALZET brain infusion kit 3 used; Brain coordinates (right hemisphere from bregma: anterior, 1.0 mm; and lateral, 1.5 mm); cancer (Glioblastoma);

Q10417: J. M. Brown, *et al.* Role of hypothalamic MAPK/ERK signaling and central action of FGF1 in diabetes remission. *iScience* 2021;24(9):102944
Agents: UO126 **Vehicle:** DMSO; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** 24 hours;
ALZET Comments: Dose: (30 mM); Controls received mp w/ vehicle; animal info: Male mice, 8-week-old C57BL/6J (WT) post op. care: buprenorphine hydrochloride for pain relief and were allowed to recover for one week prior to the study; UO126 is a selective MAPK inhibitor Brain coordinates (LV: 0.7 mm posterior to bregma; 1.3 mm lateral, and 1.3 mm below the skull surface and 3V: -1.8 mm posterior to bregma; mid-line and -4.3 mm below the skull surface); diabetes

Q8701: S. Bhattarai, *et al.* Modulation of Brain Pathology by Enhancer RNAs in Cerebral Ischemia. *Mol Neurobiol* 2021;58(4):1482–1490
Agents: Anti-eRNA oligos **Vehicle:** CSF/ artificial; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** 3 days;
ALZET Comments: Dose (8.3 pmole/ul); animal info (3 months old, 20–30 g, C57BL/6N); antisense (eRNA_06347: 5'-GATTGGGAATTGCTAG-3' ; eRNA_093384: 5'-GGAAGCAGGTGAACAG-3'); ALZET brain infusion kit 3 used; ischemia (Cerebral);

Q9893: I. J. Yeo, *et al.* Antifungal drug miconazole ameliorated memory deficits in a mouse model of LPS-induced memory loss through targeting iNOS. *Cell Death & Disease* 2020;11(8):623
Agents: AB 1-42 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** 2 weeks;
ALZET Comments: Dose (300 pmol); 0.9% Saline used; Controls received mp w/ vehicle; animal info (8–10 weeks old, C57BL/N); ALZET brain infusion kit 1 used; Brain coordinates (–1.0 mm anterior/posterior, +0.5 mm medial/lateral, and –2.5 mm dorsal/ventral); neurodegenerative (Alzheimer's Disease);



Q9905: H. Yang, *et al.* Region-specific astrogliosis: differential vessel formation contributes to different patterns of astrogliosis in the cortex and striatum. *Molecular Brain* 2020;13(1):103

Agents: Avastin **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** 14 days;
ALZET Comments: Dose (10 mg/kg); animal info (Male, 8-10 weeks old, 25-30 g); Brain coordinates (AP: -0.5, ML: + 1.2, DV: - 2.5); neurodegenerative (Brain Injury);

Q9929: D. Xu, *et al.* Modulating TRADD to restore cellular homeostasis and inhibit apoptosis. *Nature* 2020;587(7832):133-138

Agents: Apostatin-1 **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** Not Stated;
ALZET Comments: Dose (0.25 ul/hr); animal info (2 months old); Apostatin-1 aka Apt-1 ; ALZET brain infusion kit XX used; Brain coordinates (ML -1.0 mm; AP -0.5 mm; DV 2.0 mm); cyanoacrylate adhesive; cardiovascular;

Q9936: S. Y. Wu, *et al.* BDNF reverses aging-related microglial activation. *Journal of Neuroinflammation* 2020;17(1):210

Agents: Brain-derived neurotrophic factor **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: Dose (0.1 ul/min); 0.9% Saline used; Controls received mp w/ vehicle; animal info (18 months old); Brain-derived neurotrophic factor aka BDNF ; neurodegenerative (Microglial Activation);

Q9959: J. Wu, *et al.* Activation of the Hedgehog Pathway Promotes Recovery of Neurological Function After Traumatic Brain Injury by Protecting the Neurovascular Unit. *Translational Stroke Research* 2020;11(4):720-733

Agents: Cytosine-b-D-arabinofuranoside **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 6 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (C57BL/6J); Cytosine-b-D-arabinofuranoside aka Ara-C ; Brain coordinates (anterior (A), 0; lateral (L), 0.8; and depth (D), 2.5 (relative to bregma and the surface of the brain)); neurodegenerative (Neurogenesis);

Q9951: Y. Wang, *et al.* Calpain-2 as a therapeutic target in repeated concussion-induced neuropathy and behavioral impairment. *Neuroscience* 2020;

Agents: Selective Calpain 2 Inhibitor **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2002; **Duration:** 10 days;
ALZET Comments: Dose (0.3 mg/kg/day); Controls received mp w/ vehicle; animal info (C57BL/6); Selective Calpain 2 Inhibitor aka C21 ; enzyme inhibitor (Selective Calpain 2 Inhibitor); neurodegenerative (Traumatic Brain Injury);

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:** CSF/CNS; **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);

Q9090: V. Tsvankin, *et al.* ABC Transporter Inhibition Plus Dexamethasone Enhances the Efficacy of Convection Enhanced Delivery in H3.3K27M Mutant Diffuse Intrinsic Pontine Glioma. *Neurosurgery* 2020;86(5):742-751

Agents: Dasatinib **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;
ALZET Comments: Dose (2 uM); Dasatinib aka Tyrosine Kinase Inhibitor; enzyme inhibitor (Tyrosine Kinase Inhibitor); cancer (Glioma);

Q10705: M. C. Trolese, *et al.* CXCL13/CXCR5 Signaling is Pivotal to Preserve Motor Neurons in Amyotrophic Lateral Sclerosis. *EBioMedicine* 2020;62(103097

Agents: MAb 5261; Immunoglobulin G **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004;
ALZET Comments: "Dose: (7.2 mg/ml CSCL13 antibody); animal info: Female transgenic SOD1G93A mice on C57BL/6 J or 129SvHsd genetic background, hereafter indicated as C57-mSOD1 and 129Sv-mSOD1; Immunoglobulin G aka (IgG); MAb 5261 (anti-CSCL13 antibody; neurodegenerative; (amyotrophic lateral sclerosis); "



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:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **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;

Q9132: G. A. Rodriguez, *et al.* Attenuation of entorhinal cortex hyperactivity reduces A β and tau pathology. *PLOS Biology* 2020;18(8):

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 uM); 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); "these data support the utility of long-term CNO delivery in indwelling osmotic minipumps to activate DREADDs in vivo (see also [83]). Importantly, percentage theta power was further reduced in EC-Tau/hAPP mice following chronic hM4Di DREADDs activation."

Q8840: G. A. Rodriguez, *et al.* Chemogenetic attenuation of neuronal activity in the entorhinal cortex reduces Abeta and tau pathology in the hippocampus. *PLOS Biology* 2020;18(8):e3000851

Agents: Clozapine-N-Oxide **Vehicle:** DMSO; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2006; **Duration:** 6 weeks;

ALZET Comments: Dose (1 mg/kg/day); 0.05% DMSO used; Clozapine-N-Oxide aka CNO ; neurodegenerative (Alzheimer's Disease);

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);

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:** CSF/CNS; **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);

Q8369: G. Pirovano, *et al.* Targeted Brain Tumor Radiotherapy Using an Auger Emitter. *Clin Cancer Res* 2020;26(12):2871-2881

Agents: Iodine-123 Meitner-Auger PARP1 inhibitor **Vehicle:** PEG; PBS; **Route:** CSF/CNS; **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);



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:** CSF/CNS; **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. *Journal of Neuroscience* 2020;40(42):8160-8173

Agents: PAI-039 **Vehicle:** Not stated; **Route:** CSF/CNS; **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);

Q10048: M. A. Nunes, *et al.* Kinin B2 Receptor Activation Prevents the Evolution of Alzheimer's Disease Pathological Characteristics in a Transgenic Mouse Model. *Pharmaceuticals (Basel)* 2020;13(10):

Agents: Amyloid Beta 1-42 **Vehicle:** CSF, Artificial; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 8 weeks;

ALZET Comments: Dose (10 nmol/kg/h); Controls received mp w/ vehicle; animal info (Twelve-month-old transgenic mice); pumps replaced every 4 weeks; Amyloid Beta 1-42 aka AB peptide; peptides; neurodegenerative (Alzheimer's Disease);

Q8648: F. Mannara, *et al.* Allosteric modulation of NMDA receptors prevents the antibody effects of patients with anti-NMDAR encephalitis. *Journal of Neurology* 2020;143(9):2709-2720

Agents: NMDAR-CSF **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not stated; **Duration:** 14 days;

ALZET Comments: Animal info (male C57BL/6J mice, 8-10 weeks old, 25-30 g); behavioral testing (Novel object location; locomotor activity); Brain coordinates (0.2 mm posterior and \pm 1.00 mm lateral from bregma, depth 2.2 mm); dependence;

Q10183: S. Hirose, *et al.* Type 2 Innate Lymphoid Cells Induce CNS Demyelination in an HSV-IL-2 Mouse Model of Multiple Sclerosis. *iScience* 2020;23(10):101549

Agents: Interleukin-2 **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: animal info: wild-type (WT) HSV-1/Interleukin -2 aka (IL-2)peptides; immunology;

Q8529: D. W. Hampton, *et al.* HspB5 Activates a Neuroprotective Glial Cell Response in Experimental Tauopathy. *Frontiers in Neuroscience* 2020;14(574)

Agents: HspB5, human recomb.; Myoglobin **Vehicle:** PBS; **Route:** CSF/CSN; **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);

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; \pm 1.2 mm lateral to the sagittal; 2.0 mm below dura); bilateral cannula used; immunology;

Q8484: P. Garland, *et al.* Haemoglobin causes neuronal damage in vivo which is preventable by haptoglobin. *Brain Commun* 2020;2(1):fz053

Agents: Haemoglobin; Haptoglobin **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Dose (20mg/ml Haemoglobin; 14mg/ml Haptoglobin); 0.9% Saline used; Controls received mp w/ vehicle; animal info (Locally bred male C57BL/6 mice, 10-12 weeks of age); post op. care (Buprenorphine); Haemoglobin aka Hb; Haptoglobin aka Hp; ALZET brain infusion kit 3 used; Brain coordinates (from bregma: anteroposterior, -0.4 mm; lateral, 1 mm; depth, 2.5 mm.); cyanoacrylate adhesive; toxicology;



Q8899: J. Gao, *et al.* TDP-43 inhibitory peptide alleviates neurodegeneration and memory loss in an APP transgenic mouse model for Alzheimer's disease. *BBA - Molecular Basis of Disease* 2020;1866(1):165580

Agents: CPM / PM1 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** Not Stated;

ALZET Comments: Dose (0.5 mg/kg/day); animal info (Female); behavioral testing (Open Field Test, Rotarod and Footprint Test, Grip Strength Test, Barnes Maze Test); cPM or PM1 aka Inhibitory Peptide ; peptides; neurodegenerative (Alzheimer's Disease);

Q8469: A. Frisch, *et al.* Apelin Controls Angiogenesis-Dependent Glioblastoma Growth. *International Journal of Molecular Sciences* 2020;21(11):

Agents: Apelin-13 **Vehicle:** CSF, Artificial; **Route:** CSF/CSN; **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 of bregma); cancer (Glioblastoma);

Q9763: J. C. DuBois, *et al.* Anti-Axl antibody treatment reduces the severity of experimental autoimmune encephalomyelitis. *Journal of Neuroinflammation* 2020;17(1):324

Agents: Growth arrest-specific gene 6 **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1104; **Duration:** 28 days;

ALZET Comments: Dose (40 µg/day); animal info (C57BL6/J, 8-12 weeks old); Growth arrest-specific gene 6 aka Gas6; immunology;

Q8448: S. Dominguez-Garcia, *et al.* A novel PKC activating molecule promotes neuroblast differentiation and delivery of newborn neurons in brain injuries. *Cell Death and Disease* 2020;11(4):262

Agents: EOF2 **Vehicle:** DMSO; PBS; **Route:** CSF/CNS; **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;

Q9775: J. P. Barrett, *et al.* Interferon-beta Plays a Detrimental Role in Experimental Traumatic Brain Injury by Enhancing Neuroinflammation That Drives Chronic Neurodegeneration. *J Neurosci* 2020;40(11):2357-2370

Agents: α-IFNAR neutralizing antibody **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 3 days;

ALZET Comments: Dose (0.5 mg/ml); animal info (10-12 weeks old, Male, C57BL/6J); ALZET brain infusion kit 3 used; Brain coordinates (0.7mm posterior to the bregma, 1.5 mm lateral to the bregma, 2 mm deep); neurodegenerative (Traumatic Brain Injury);