



Recent References (2022-Present) on the Intracerebroventricular Administration of Agents to Mice Using ALZET® Osmotic Pumps

- Q12462:** M. Yu, *et al.* Suppression of hypothalamic oestrogenic signal sustains hyperprolactinemia and metabolic adaptation in lactating mice. *Nature Metabolism* 2025;7(4):759-777
Agents: Estradiol **Vehicle:** DMSO; CSF, artificial; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Strain:** WT; **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: Dose (0.1 µg/d); 10% DMSO in aCSF used; control animals received mp w/ vehicle; animal info (female 10 weeks old); pumps replaced on G16 with new pump filled with E2 or vehicle; ALZET brain infusion kit 3 used; replacement therapy; therapeutic indication (Estradiol used to investigate prolactin regulation and metabolic adaptation in postpartum mice);
- Q12621:** M. Yao, *et al.* LncRNA Tug1 Regulates Post-Stroke Microglial Pyroptosis via PINK1/Parkin-Mediated Mitophagy. *Inflammation* 2025;48(4):2677-2691
Agents: Mdivi-1 **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1003D; **Duration:** Not Stated;
ALZET Comments: Dose (1.2 mg/kg/day); animal info (male 8–10 weeks); brain coordinates (1 mm posterior to the bregma, 1 mm right lateral to the midline, 0.6 mm ventral to the dura); ischemia (stroke);
- Q12586:** T. Scherer, *et al.* A direct effect of the hematocrit on blood glucose; Evidence from hypoxia- and erythropoietin-treated mice. *Science Advances* 2025;
Agents: Erythropoietin, recombinant human **Vehicle:** CSF, artificial; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Strain:** C57BL/6JRj; **Pump:** 2006; **Duration:** 6 weeks;
ALZET Comments: Dose (5 U/kg/day); controls received mp w/ vehicle; animal info (male 8-10 weeks old);
- Q12512:** M. Prevost, *et al.* The Resistin/TLR4/miR-155-5p axis: a novel signaling pathway in the onset of hypothalamic neuroinflammation. *Journal of Neuroinflammation* 2025;22(1):198
Agents: Resistin **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 1003D; **Duration:** 3 days;
ALZET Comments: Dose (2 µg/24µL/day); controls received mp w/ vehicle; animal info (Adult male); brain coordinates (0.58 mm anterior to bregma, 1 mm lateral, and 2 mm dorso-ventral); behavioral testing (glucose/insulin tolerance and metabolic readouts);
- Q12474:** M. Modder, *et al.* Oppositely biased glucagon-like peptide-1 receptor agonism does not differentially affect lipid metabolism in APOE*3-Leiden CETP mice. *Diabetes Obesity and Metabolism* 2025;27(6):3477-3489
Agents: acyl-ExD3; acyl-ExF1 **Vehicle:** 1004; **Route:** CSF/CNS (left ventricle); **Species:** Mice; **Strain:** ApoE*3-Leiden.CETP; **Pump:** 1004; **Duration:** 18 days;
ALZET Comments: Dose (0.75 nmol/day); controls received mp w/ vehicle; animal info (14–18-week-old female); GLP-1 receptor agonist; peptides; ALZET brain infusion kit 3 used; brain coordinates (-0.45 mm anteroposterior, -1.00 mm lateral and 2.2 mm dorsoventral from bregma); diabetes; obesity;
- Q12613:** Y. Liu, *et al.* Dietary cholesterol impairs cognition via gut microbiota-derived deoxycholic acid in obese mice. *Gut Microbes* 2025;17(1):2537753
Agents: Deoxycholic acid; GSK2330672; Z-DEVD-FMK **Vehicle:** DMSO; CSF, artificial; **Route:** CSF/CNS (hippocampus); (ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 2006; **Duration:** 3; 4 weeks;
ALZET Comments: Dose (DCA: 0.0199 nM/day; GSK 0.04 µg/day; ZDF: 348 nM/day); controls received mp w/ vehicle; animal info (Eight-week-old male); functionality of mp verified; ZDF: caspase-3 inhibitor; GSK2330672: ASBT inhibitor; brain coordinates (AP: -2 mm; ML: ±1.5 mm; DV: -1.5 mm); behavioral testing (Y maze working memory, NOR recognition memory); obesity;



Q12570: X. Liu, *et al.* Lactate alleviates trigeminal neuralgia symptoms in mice by suppressing neuroinflammation. *Journal of International Medical Research* 2025;53(5):3000605251341802

Agents: Sodium L-lactate **Vehicle:** CSF, artificial; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Strain:** Ldh cKO; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Dose (0.5 mol/L); controls received mp w/ vehicle; brain coordinates (AP: 1.8 mm, DV: -5.0 mm); behavioral testing (von Frey tests);

Q12267: H. Li, *et al.* An alternative neural basis underlying leptin resistance. *Cell Reports* 2025;44(7):115863

Agents: Leptin **Vehicle:** Saline; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** ob/ob; **Pump:** Not Stated; **Duration:** 13 days;

ALZET Comments: Dose (50 ng/h); animal info (8–10 weeks old); obesity;

Q12442: S. Kemppainen, *et al.* Intracerebroventricular phospho-tau immunotherapy alleviates cortical phospho-tau burden and motor phenotype in a neuron-specific P301S tauopathy mouse. *Experimental Neurobiology* 2025;391(115315

Agents: B6 monoclonal antibody; IgG control **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** hTau-TGO, C57Bl/6J x CBA/ca background); **Pump:** 1004; **Duration:** 1; 2 months;

ALZET Comments: Dose (2.5 mg/ml); animal info (14 weeks, isoflurane anesthesia); post op. care (carprofen at 5 mg/kg); brain coordinates (AP - 0.5, ML - 1.0, DV -1.9); neurodegenerative; "...intracerebroventricular delivery via osmotic minipump demonstrated significant improvement in motor function during the early stages of pathology. Importantly, both systemic and i.c.v. administration were well-tolerated, with no observed adverse effects on animal well-being or evidence of brain oedema on MRI." pg. 15;

Q12433: S. C. A. Goncalves, *et al.* Oral or intranasal angiotensin-(1-7) improves anxiety and depression-like behaviors in mice subjected to allergic pulmonary inflammation. *Behavioural Brain Research* 2025;494(115744

Agents: Angiotensin (1-7) **Vehicle:** Saline; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** Balb/c; **Pump:** 1007D; **Duration:** 11 days;

ALZET Comments: Dose (50 ng/h); controls received mp w/ vehicle; animal info (male 8–10 weeks of age, ketamine/xylazine anesthesia); post op. care (tramadol (12.5 mg/kg s.c.); peptides; brain coordinates (0.5 mm posterior, 1.0 mm lateral to bregma, 2.0 mm deep); dental cement used; behavioral testing (elevated plus maze, open field, tail suspension test (anxiety/depression-like behaviors); immunology (asthma);

Q12229: J. C. Cano, *et al.* Newly generated striatal neurons rescue motor circuitry in a Huntington's disease mouse model. *Cell Reports* 2025;44(4):115440

Agents: Brain-derived neurotrophic factor; Noggin protein, delta B2 **Vehicle:** HBSS; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** R6/2; **Pump:** 1002; **Duration:** 2 weeks;

ALZET Comments: Dose (400 ng/mL BDNF; 5 µg/mL noggin); animal info (male, female); brain coordinates (AP 0.5 mm, ML 0.7 mm, DV -2.5 mm); behavioral testing (motor circuitry functionality tested); "In the present study, we induced striatal neuronal addition in both WT and R6/2 Nestin reporter mice at 4 weeks of age, by the sustained intraventricular infusion of BDNF and Noggin proteins via an implanted osmotic minipump for 2 weeks." p. 3

Q12612: C. Astudillo-Guerrero, *et al.* Hypothalamic gliosis as a potential mediator of improved glucose tolerance induced by time-restricted feeding in obese mice. *American Journal of Physiology- Cell Physiology* 2025;329(3):C834-C847

Agents: Butyrate, B-hydroxy **Vehicle:** PBS; **Route:** SC; CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (18 ug/h SC, 45 ug/ul); controls received mp w/ vehicle; animal info (8-wk-old male); brain coordinates (0.7 mm posterior to bregma, 1.3 mm lateral, and 2.1 mm below the skull surface); "To address the possibility that BHB is too rapidly cleared from the bloodstream to elicit durable metabolic effects, we next tested a continuous BHB administration paradigm using subcutaneous (sc) osmotic minipumps with 4-wk infusion periods." p. 8;



Q12421: D. Arizanovska, *et al.* Cognitive loss after brain trauma results from sex-specific activation of synaptic pruning processes. *Brain* 2025;

Agents: Ro 25-6981 maleate; PSVue-480 **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricle); (contralateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** Not Stated; **Duration:** 3 days;

ALZET Comments: Dose (1 nM, 10nM, 100nM Ro); controls received mp w/ vehicle; animal info (male, 2-4 months); behavioral testing (contextual and cued fear conditioning, memory tasks); neurodegenerative; immunology;

Q12013: L. Zafra-Puerta, *et al.* Effect of intracerebroventricular administration of alglucosidase alfa in two mouse models of Lafora disease: Relevance for clinical practice. *Epilepsy Research* 2024;200(107317

Agents: Alglucosidase alfa **Vehicle:** Not Stated; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** Epm2a KO; **Pump:** 1004; **Duration:** 14 days; 30 days;

ALZET Comments: Dose (13.2 ug/day for 14 days; 17.1 ug/day for 30 days); animal info (6, 9 old); comparison of injection vs mp; ALZET brain infusion kit 3 used; behavioral testing (episodic memory, anxiety, susceptibility to PTZ); neurodegenerative (Lafora disease, epilepsy);

Q11800: L. Yang, *et al.* Gestational diabetes causes hyperactivity of the sympathetic nervous system and hypertension in adult mice offspring. *Clinical and Experimental Hypertension* 2024;46(1):2402260

Agents: Tempol **Vehicle:** CSF, artificial; **Route:** CSF/CNS (paraventricular nucleus); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2006; **Duration:** 4 weeks;

ALZET Comments: Dose (1 mmol/L); animal info (16 weeks, mice of control mother offspring & diabetic mother offspring); bilateral cannula used; cardiovascular; hypertension; diabetes; "To confirm the role of oxidative stress in gestational diabetes-induced hypertension in offspring, tempol, as an antioxidant, was infused into the bilateral PVN of mice offspring." p5;

Q11900: M. M. Santisteban, *et al.* Meningeal interleukin-17-producing T cells mediate cognitive impairment in a mouse model of salt-sensitive hypertension. *Nature Neuroscience* 2024;27(1):63-77

Agents: UC7-13D5 antibody **Vehicle:** Not Stated; **Route:** CSF/CNS (cerebral ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** 1004; **Duration:** Not Stated;

ALZET Comments: Dose: (0.1 µg/h); controls received mp w/ vehicle; animal info (Seven- to ten-week-old); blood pressure measured via tail cuff plethysmography; See (Extended Data Fig. 2); UC7-13D5 is an anti-TCR gamma/delta antibody; ALZET brain infusion kit 3 used; brain coordinates (0.5 mm posterior to bregma, 1.0 mm lateral from midline, 2.3 mm below the brain surface); behavioral testing (novel object recognition test; barnes maze test); cardiovascular (hypertension);

Q12491: J. A. Parmasad, *et al.* Genetic and pharmacological reduction of CDK14 mitigates synucleinopathy. *Cell Death and Disease* 2024;15(4):246

Agents: FMF-04-159-216 **Vehicle:** DMSO; Tween 80; Water, double distilled; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose (0.35 mg/kg/day) 8% DMSO; 2% Tween 80, 90% ddH2O used; controls received mp w/ vehicle; animal info (4-month-old); ALZET brain infusion kit used; brain coordinates (-1.1 mm ML; -0.5 mm AP, -3 mm DV); behavioral testing (Grip strength tests; elevated plus maze test; Y maze test; open field test; rotarod test); neurodegenerative (Parkinson's); therapeutic indication (Parkinson's disease);

Q11877: J. W. Park, *et al.* Hypothalamic astrocyte NAD(+) salvage pathway mediates the coupling of dietary fat overconsumption in a mouse model of obesity. *Nature Communications* 2024;15(1):2102

Agents: 78c **Vehicle:** Saline; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: Dose (2.8 ug/day); 0.9% saline solution used; animal info (male 8 weeks, Zoletil/Rompun anesthesia); enzyme inhibitor (CD38); cannula placement verified via black ink injection; obesity;

Q11683: C. B. Park, *et al.* Extracellular Cleavage of Microglia-Derived Progranulin Promotes Diet-Induced Obesity. *Obesity Studies* 2024;

Agents: SLPI peptide **Vehicle:** Saline; **Route:** CSF/CNS (third ventricle); **Species:** Mice; **Strain:** Cx3cr1CreER:eYFP; C57BL/6J; **Pump:** Not stated; **Duration:** 28 days;

ALZET Comments: Dose (3 ug/2.6 ul/d); animal info (7-8 weeks); cannula placement verified via injecting black ink; diabetes;



R0472: D. Navarro-Tumar, *et al.* Novel Applications in Controlled Drug Delivery Systems by Integrating Osmotic Pumps and Magnetic Nanoparticles. *Sensors* (Basel) 2024;24(21):

Agents: DNA, tc; fluvastatin; meloxicam; angiotensin II: perilymph, artificial; isoform FS-288; neurotrophin-3 **Vehicle:** Not Stated; **Route:** IV; SC; CSF/CNS (ventricle); Ear; **Species:** Mice; bird (pigeon); guinea pig; rat; **Strain:** C57BL/6; Mdx52; Mst1-/-; Sprague Dawley; Apoe-/-; **Pump:** 1002; 1004; 2001; 2002; 2004; 2006; 2ML4; **Duration:** Not Stated;

ALZET Comments: see Table 1 for list of studies; "This method of drug administration presents several advantages for research purposes over conventional delivery systems including (i) the maintenance of a constant concentration of the drug to maximize its efficacy and reduce adverse effects, (ii) the elimination of the need for researcher intervention during the experiment, and (iii) the time savings by removing the need for frequent handling and repetitive injection of the animal." p. 5

Q11679: M. M. Naffaa, *et al.* A cholinergic signaling pathway underlying cortical circuit activation of quiescent neural stem cells in the lateral ventricle. *Science Signaling* 2024;

Agents: 4-DAMP; 2-APB; KN 93; SR-3576 **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** Ce-Cre; **Pump:** 1003D; **Duration:** 12 hours;

ALZET Comments: 4-DAMP is M3 receptor antagonist, 2-APB is IP3R1 antagonist, KN 93 is selective CAMK2D inhibitor, SR-3576 is selective MAPK10 inhibitor; brain coordinates (AP: +0.8, ML: ± 0.65, and DV: 2.1 from the brain surface);

Q12375: A. P. Moresman, *et al.* Therapeutic glycan-specific antibody binding mediates protection during primary amoebic meningoencephalitis. *Infection and Immunity* 2024;

Agents: 2B6, IgG1, antibody isotype control; 2B6-IgG2c **Vehicle:** Saline; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose (2.5 ug/h); animal info (male and female; 8-10 weeks old); post op. care (buprenorphine); ALZET brain infusion kit 3 used; cyanoacrylate adhesive; immunology; "To further increase antibody-mediated pressure on brain-invading amoebas, we sought to maintain a consistent antibody supply within the brain using osmotic pumps (Alzet) to continuously deliver 2B6 antibody into the brains of infected mice...In any event, therapeutic delivery of 2B6-IgG2c via osmotic pump resulted in further prolonged survival suggesting that antibody-directed effector function can enhance the therapeutic potential of monoclonal antibodies against *N. fowleri* during PAM" pg. 10,11;

R0463: L. Moreno-Jimenez, *et al.* Murine experimental models of amyotrophic lateral sclerosis: an update. *Neurologia* (Engl Ed) 2024;39(3):282-291

Agents: CSF, cytotoxic **Vehicle:** Not Stated; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: comparison of local neuromuscular injections vs mp; ALZET brain infusion kit used; neurodegenerative (murine models of ALS); "The results of this study show similar cytohistochemical changes in the brain and spinal cord to those found in patients with ALS." pg. 7;

Q12358: M. Mey, *et al.* Therapeutic benefits of central LH receptor agonism in the APP/PS1 AD model involve trophic and immune regulation and are reproductive status dependent. *BBA - Molecular Basis of Disease* 2024;1870(5):167165

Agents: Gonadotropin; human chorionic **Vehicle:** Cerebrospinal fluid, artificial; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** C57/BJ6; **Pump:** 1004; **Duration:** 8 weeks;

ALZET Comments: Dose (30 mlU/day); controls received mp w/ vehicle; animal info (female; 8 months old); pumps replaced after 4 weeks; peptides; ALZET brain infusion kit 3 used; brain coordinates (from bregma; anterior posterior -0.05 mm, medial/lateral -0.11, and dorsal ventral -0.25 mm); cannula placement verified via injecting fast green through the tubing at sacrifice; behavioral testing (Maze; Open field; Light/dark box procedure); neurodegenerative (Alzheimer's);

Q11678: Q. Lyu, *et al.* A brain-to-gut signal controls intestinal fat absorption. *Nature Portfolio* 2024;634(8035):936-943

Agents: Puerarin **Vehicle:** PBS; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; Phox2b-cre; Chat-cre; Rosa26-tdTomato; **Pump:** 1004; **Duration:** 20 days;

ALZET Comments: Dose (3.73 ng/ul); animal info (8 week old); ALZET brain infusion kit 3 used; brain coordinates (2 mm depth, AP -0.7 mm, lateral 1 mm); glue used to cement to skull; "To avoid potential confounding effects of puerarin on peripheral organs, pair-fed HFD mice were given an intracerebroventricular (i.c.v) infusion of puerarin into the lateral ventricle (Fig. 2m)." pg. 3;



Q12326: J. Liu, *et al.* Exploring the neuroprotective role of artesunate in mouse models of anti-NMDAR encephalitis: insights from molecular mechanisms and transmission electron microscopy. *Cell Communication and Signaling* 2024;22(1):269

Agents: CSF, antibody; anti-NMDAR **Vehicle:** PBS; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: controls received mp w/ vehicle; animal info (female; 8-10 weeks old, isoflurane anesthesia); brain coordinates (AP: -0.22 mm, ML: ±0.95 mm, DV: -2.3 mm); behavioral testing (social; maze; open field);

Q12302: Y. Li, *et al.* Tumor cells impair immunological synapse formation via central nervous system-enriched metabolite. *Cancer Cell* 2024;42(6):985-1002 e18

Agents: Aspartate, N-acetyl **Vehicle:** CSF, artificial, sterile; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** C57BL/6; BALB/c; **Pump:** 1004; **Duration:** Not Stated;

ALZET Comments: Dose (20 ug/ul); animal info (female; 6 weeks old); brain coordinates (skull 0.2 mm lateral and 0.1 mm posterior to the bregma); dental cement used; immunology;

Q12299: S. Leon, *et al.* Single cell tracing of Pomc neurons reveals recruitment of 'Ghost' subtypes with atypical identity in a mouse model of obesity. *Nature Communications* 2024;15(1):3443

Agents: Uridine, 5-Bromo-2-deoxy **Vehicle:** Saline; DMSO; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** PomcCreERT2; tdTomato; Pomc-eGFP; **Pump:** 1004; **Duration:** 3 weeks; 3 months;

ALZET Comments: 22.5% DMSO used; controls received mp w/ vehicle; animal info (male; 16-21 weeks old, isoflurane anesthesia); pumps replaced twice for long term delivery; long-term study; ALZET brain infusion kit 2 used; brain coordinates (AP -0.3 mm; ML +/- 1 mm; DV -2.5 mm);

Q12290: C. Leal, *et al.* Effects of the therapeutic correction of U1 snRNP complex on Alzheimer's disease. *Scientific Reports* 2024;14(1):30085

Agents: APT20TMG **Vehicle:** aCSF; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** SAMP8/8TaHsd; **Pump:** 2006; **Duration:** 42 days;

ALZET Comments: Dose (83.3 ug/mL/0.3 ug/d or 833.3 ug/mL/3 ug/d); animal info (female 7-8 weeks, isoflurane anesthesia); post op. care: Carprofen, 5 mg/kg via s.c.; brain coordinates (A/P -0.5 mm, M/L 1.0 mm, and D/V 1.7 mm); cyanoacrylate adhesive; behavioral testing (Morris water maze test; CFC test, freezing behavior); neurodegenerative (Alzheimer's); good methods (p. 13);

Q12288: D. Lau, *et al.* ABHD6 loss-of-function in mesoaccumbens postsynaptic but not presynaptic neurons prevents diet-induced obesity in male mice. *Nature Communications* 2024;15(1):10652

Agents: WWL70 **Vehicle:** DMSO; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** WT C57BL/6Ncrl; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose (1.86 µg/day); 20% DMSO used; controls received mp w/ vehicle; behavioral testing (Open field test; Home-cage voluntary wheel-running; Elevated plus maze test; Forced swim test; Social interaction test; Operant testing); obesity; therapeutic indication (α/β-hydrolase domain 6); obesity

Q11767: Y. K. Kim, *et al.* Identification of IGF-1 Effects on White Adipose Tissue and Hippocampus in Alzheimer's Disease Mice via Transcriptomic and Cellular Analysis. *International Journal of Molecular Sciences* 2024;25(5):

Agents: siRNA-siPORTNeoFX **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** APP/PS2; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: animal info (male; 3 months old); ALZET brain infusion kit used; brain coordinates (ML 1 mm, AP 0.3 mm based on bregma); neurodegenerative (Alzheimer's); gene therapy;

Q12269: F. Kawakita, *et al.* Effects of Haptoglobin on Early Brain Injury, Vasospasm, and Lymphatic Drainage After Subarachnoid Hemorrhage in Mice. *Stroke* 2024;55(12):2885-2895

Agents: Haptoglobin **Vehicle:** Not Stated; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2001D; **Duration:** 24 hours;

ALZET Comments: controls received mp w/ saline; animal info (male, 10-12 weeks, 25-30g); blood pressure measured via noninvasive from the tail; brain coordinates (0.2 mm posterior to bregma, 1.0 mm to the right, 2.5 mm depth); neurobehavioral tests;



- Q12005:** A. B. Isaev, *et al.* Upregulation of cholinergic modulators Lypd6 and Lypd6b associated with autism drives anxiety and cognitive decline. *Cell Death Discovery* 2024;10(1):444
Agents: WS-LYPD6; WS-LYPD6B **Vehicle:** PBS; DMSO; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** C57BL/6NcrJ; **Pump:** 2004; **Duration:** 2 weeks;
ALZET Comments: Dose (5 mg/ml); 30% DMSO used; controls received mp w/ vehicle; animal info (male 16-week-old); stability verified at 37deg prior to study; ALZET brain infusion kit 2 used; behavioral testing (open field test; elevated plus maze test; hypophagia; novel objective recognition; novel odor recognition; rotarod test); immunology;
- Q12000:** S. J. P. Huwart, *et al.* TLR4-dependent neuroinflammation mediates LPS-driven food-reward alterations during high-fat exposure. *Journal of Neuroinflammation* 2024;21(1):305
Agents: Lipopolysaccharide **Vehicle:** Saline; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; TLR4 knockout (KO); **Pump:** 2006; **Duration:** 42 days;
ALZET Comments: Dose (562.2 pg/h); 0.9% NaCl used; animal info (male, isoflurane anesthesia); post op. care: tramadol 5 mg/kg s.c.; ALZET BIK1 used; brain coordinates (bregma in mm: L=+0.9; AP=0.2; V=-2.5) dental cement used; obesity;
- Q12048:** Q. He, *et al.* Acetate enables metabolic fitness and cognitive performance during sleep disruption. *Cell Metabolism* 2024;36(9):1998-2014 e15
Agents: Sodium acetate **Vehicle:** Cerebrospinal fluid, artificial; **Route:** CSF/CNS (third ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 2002; **Duration:** 14 days;
ALZET Comments: Dose (20 mM); animal info (male and female; 7-8 weeks old); brain coordinates (AP -1.8 mm, DV -5 mm); behavioral testing (Morris water maze, novel object recognition);
- Q12043:** L. K. Hamilton, *et al.* Central inhibition of stearyl-CoA desaturase has minimal effects on the peripheral metabolic symptoms of the 3xTg Alzheimer's disease mouse model. *Scientific Reports* 2024;14(1):7742
Agents: SCD1 inhibitor **Vehicle:** DMSO; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** 3xTg-AD; WT; **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: controls received mp w/ DMSO/aCSF; animal info (9 month old, isoflurane anesthesia); brain coordinates (0.0 mm antero-posterior and 0.9 mm lateral to Bregma); neurodegenerative (Alzheimer's); "The ICV infusion paradigm for SCD1 used here results in remarkable improvements in brain structure and function of 3xTg-AD mice, including a recovery of learning and memory in mid-life" pg. 8;
- Q12144:** L. Guadalupi, *et al.* Interleukin-9 protects from microglia- and TNF-mediated synaptotoxicity in experimental multiple sclerosis. *Journal of Neuroinflammation* 2024;21(1):128
Agents: Interleukin-9 **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Dose (30 ng/mouse/day); controls received mp w/ vehicle; animal info (female; 6-8 weeks old); catheter; ALZET brain infusion kit 3 used; brain coordinates (anteroposterior= -0.4 mm from bregma; lateral= -1 mm; depth: 2.5 mm from the skull); neurodegenerative (multiple sclerosis);
- Q12179:** S. Gasparini, *et al.* Aldosterone-induced salt appetite requires HSD2 neurons. *JCI Insight* 2024;9(23):
Agents: Aldosterone; Clozapine-N-oxide **Vehicle:** Ethanol; Saline, sterile; **Route:** CFS/CNS (fourth ventricle; lateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; Hsd11b2-Cre, Th-IRES Cre; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Dose (0.5 mg/kg/h); 1% ethanol in sterile 0.9% saline used; controls received mp w/ vehicle; brain coordinates (i4V: 0 mm lateral, -6.5 mm caudal, and 5.0 mm deep to bregma; LV: 0.8 mm right, 0.35 mm caudal, and 2.5 mm deep to bregma); cannula placement verified via injecting dye; dental cement; cyanoacrylate adhesive;
- Q11708:** M. Elgazzaz, *et al.* Maternal Western diet programs cardiometabolic dysfunction and hypothalamic inflammation via epigenetic mechanisms predominantly in the male offspring. *Molecular Metabolism* 2024;80(101864
Agents: TGFbeta, monoclonal neutralizing antibody; immunoglobulin G **Vehicle:** Not Stated; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** C57B/6J; **Pump:** 1002; **Duration:** 2 weeks;
ALZET Comments: Dose: (50 ug/kg/day); animal info (female 10-12 week old, isoflurane anesthesia); post op. care (buprenorphine SR 1 mg/kg); blood pressure measured via telemetry; Measurements (pg.6) fig. 2; brain coordinates (relative to bregma, AP: 0.4 mm, ML: +/11 mm, DV: -2.5 mm); cardiovascular; hypertension; diabetes;



Q12175: T. Ganz, *et al.* Targeting CNS myeloid infiltrates provides neuroprotection in a progressive multiple sclerosis model. *Brain Behavior and Immunity* 2024;122(497-509

Agents: AM580 **Vehicle:** DMSO; Saline; Castor oil; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** Biozzi ABH; **Pump:** 1004; **Duration:** 5; 28 days;

ALZET Comments: 8% DMSO, 2% castor oil, 90% saline used; controls received mp w/ vehicle; animal info (6-8 weeks old); retinoic acid receptor alpha agonist; brain coordinates: Bregma, A=0, R=1 mm, H=2.2 mm; immunology; "To target the compartmentalized neuroinflammation we delivered Am580 intracerebroventricularly (ICV) continuously by mini-osmotic pump for 4 weeks, starting at 7–14 days after an established second relapse and continuing into the chronic phase" pg. 499-500;

Q12116: M. M. Edwards, *et al.* Sympathetic innervation of interscapular brown adipose tissue is not a predominant mediator of oxytocin-elicited reductions of body weight and adiposity in male diet-induced obese mice. *Frontiers in Endocrinology* 2024;15(1440070

Agents: Oxytocin **Vehicle:** Water, sterile; **Route:** CSF/CNS (fourth ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose (16 nmol/day); 0.9% saline used; controls received mp w/ vehicle; animal info (adult male); post op. care (ketoprofen 5 mg/kg, enrofloxacin 5 mg/kg); (Beta 3 adrenergic receptor agonist); brain coordinates (5.9 mm caudal to bregma; 0.4 mm lateral to the midline, and 3.7 mm ventral to the skull surface); dental cement used; obesity;

Q11706: N. R. V. Dragano, *et al.* Hypothalamic free fatty acid receptor-1 regulates whole-body energy balance. *Molecular Metabolism* 2024;79(101840

Agents: G-905 **Vehicle:** DMSO; saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose (1 mg/day); 10% DMSO, 90% saline used; animal info (8-week-old) TUG-905 is a potent and specific agonist of FFAR1; obesity; "Because daily central manipulation of mice with TUG-905 ICV infusion could interfere with continued monitoring of energy expenditure (opening of the cages for ICV injection, handling, etc.), an osmotic minipump loaded with TUG-905 was implanted in a subgroup of mice." pg. 5;

Q11837: V. Charvat, *et al.* Lipidized analogues of the anorexigenic CART (cocaine- and amphetamine-regulated transcript) neuropeptide show anorexigenic and neuroprotective potential in mouse model of monosodium-glutamate induced obesity. *European Journal of Pharmacology* 2024;980(176864

Agents: CART (16-102) **Vehicle:** Saline; **Route:** CSF/CNS (third brain ventricle); **Species:** Mice; **Strain:** C57BL/6; WT; **Pump:** 2004; **Duration:** 16 days;

ALZET Comments: Dose (1 ug/day); animal info (male; 6 months old); peptides; ALZET brain infusion kit 3 used; brain coordinates (AP 2 mm, V 3 mm from Bregma); obesity

Q12105: A. D. Dodson, *et al.* Sympathetic Innervation of Interscapular Brown Adipose Tissue Is Not a Predominant Mediator of Oxytocin-Induced Brown Adipose Tissue Thermogenesis in Female High Fat Diet-Fed Rats. *Current Issues in Molecular Biology* 2024;46(10):11394-11424

Agents: Oxytocin **Vehicle:** Water, saline; **Route:** CSF/CNS (fourth ventricle); **Species:** Rat; Mice; **Strain:** Long Evans; C57BL/6J; DBA/2J; **Pump:** 2004; **Duration:** 29 days;

ALZET Comments: Dose (16 nmol/d); controls received mp w/ vehicle; animal info (adult female rats and mice, isoflurane anesthesia); post op. care (ketoprofen 2 mg/kg; antibiotic enrofloxacin 5 mg/kg); brain coordinates: rats: –3.5 mm caudal to the interaural line; 1.4 mm lateral to the midline, 7.2 mm ventral to the skull surface; mice –5.9 mm caudal to bregma; 0.4 mm lateral to the midline, 3.7 mm ventral to the skull surface; dental cement used; obesity; "To test whether the effects of 4V OT to elicit weight loss translate to other female rodent species, we also examined the effect of chronic 4V infusion of OT on body weight in two separate strains of female HFD-fed mice. Similar to what we found in the HFD-fed rat model, we also found that chronic 4V OT (16 nmol/day) infusion resulted in reduced body weight gain, adiposity and/or energy intake in female HFD-fed C57BL/6J and DBA/2J mice." pg. 11417;



Q12077: F. Chelmiss, *et al.* The Ameliorative Effects of AT2 Receptor Activation with the Hexapeptide Novokinin on Streptozotocin-induced Model of Alzheimer's Disease in SHR. *Experimental Medicine* 2024;77(12):

Agents: Novokinin **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** SHR; **Pump:** 2002; **Duration:** 2 w
ALZET Comments: Dose (0.3 ug/rat/day); controls received mp w/ vehicle; animal info (female 8 weeks of age); NVK is an angiotensin AT2 receptor agonist; ALZET brain infusion kit 2 used; brain coordinates (AP: 1 mm, L: 1.6 mm, and DV: -4 mm); dental cement used; behavioral testing (Open Field; Elevated Plus Maze; T-maze rewarded alternating; Novel Object recognition); neurodegenerative (Alzheimer's); "The main findings in this study demonstrate that infusion of the AT2 receptor agonist NVK into the brain of female SHR normalizes anxiety like behaviour in a novel environment (in the elevated plus maze) and improves hippocampus-dependent spatial working memory (in T-maze)." pg. 1856; "

Q12051: I. Ballasch, *et al.* Alterations of the IKZF1-IKZF2 tandem in immune cells of schizophrenia patients regulate associated phenotypes. *Journal of Neuroinflammation* 2024;21(1):326

Agents: Supernatant, peripheral blood mononuclear cells **Vehicle:** Not Stated; **Route:** CSF/CNS (left lateral ventricle); **Species:** Mice; **Strain:** Egr1-CreERT2xR26RCE transgenic; **Pump:** 1004; **Duration:** 25 days;

ALZET Comments: Dose (0.2064 ug/ul); animal info (adult, isoflurane anesthesia) ALZET brain infusion kit 2 used; brain coordinates (0.1 mm posterior to bregma, +/- 0.8 mm lateral to the midline, and -2.5 mm ventral to the parenchyma surface); cyanoacrylate adhesive; behavioral testing (open field; sociability; novel object recognition test); neurodegenerative (schizophrenia);

Q11634: F. A. Arlt, *et al.* KCNA2 IgG autoimmunity in neuropsychiatric diseases. *Brain Behavior and Immunity* 2024;117(399-411

Agents: Immunoglobulin G, purified; IgG, control **Vehicle:** Not Stated; **Route:** CSF/CNS (right Ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Dose (100 ug/14 days); controls received mp w/ vehicle; animal info (male; 10-12 weeks old); brain coordinates (0.2 mm posterior and +/- 1 mm lateral from bregma, depth 2.2 mm); bilateral cannula used; immunology;

Q12032: A. Amin, *et al.* Systemic administration of a novel Beclin 1-derived peptide significantly upregulates autophagy in the spinal motor neurons of autophagy reporter mice. *International Journal of Pharmaceutics* 2024;659(124198

Agents: CPP-BCN4 **Vehicle:** Saline; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** CAG-RFP-EGFP-LC3 transgenic, C57BL/6 background; **Pump:** 2004; **Duration:** 2 weeks;

ALZET Comments: Dose (10 µg/d); controls received mp w/ vehicle; comparison of IV w/ mp; proteolytic serum stability verified; half-life (p.12); neurodegenerative;

Q11614: Z. M. M. Zaki, *et al.* Depletion of transit amplifying cells in the adult brain does not affect quiescent neural stem cell pool size. *Journal of Physiological Sciences* 2023;73(1):19

Agents: Arabinofuranoside, B-D- **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: controls received mp w/ vehicle; animal info (twenty-week-old adult); brain coordinates (4.2 mm anterior to lambda, 0.8 mm lateral, and 2.7 mm); dental cement used; "In this study, we demonstrate that a one-week Ara-C infusion into the lateral ventricle eradicates most transit amplifying cells." pg. 8;

Q11492: W. Xiong, *et al.* Deletion of Transferrin Receptor 1 in Parvalbumin Interneurons Induces a Hereditary Spastic Paraplegia-Like Phenotype. *Journal of Neuroscience* 2023;43(27):5092-5113

Agents: Deferiprone **Vehicle:** CSF, artificial; **Route:** CSF,CNS (right lateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (18mM); controls received mp w/ vehicle; post op. care (mice were put on a heating pad until reviving); brain coordinates (AP = - 0.58 mm, ML = + 11.1 mm, DV = - 2 mm); cyanoacrylate adhesive; (3M Vetbond); behavioral testing (Pole test; Beam test; Rotarod; Gait analysis; Claspings; Y-maze; Acoustic startle response); neurodegenerative (hereditary spastic paraplegia);



Q11490: Y. Wu, *et al.* Hepatic soluble epoxide hydrolase activity regulates cerebral Abeta metabolism and the pathogenesis of Alzheimer's disease in mice. *Neuron* 2023;111(18):2847-2862 e10

Agents: Epoxyeicosatrienoic acid, 14, 15- **Vehicle:** CSF, artificial; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** FAD; TgAD; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose (200 ng/mL); controls received mp w/ vehicle; animal info (five 6-month-old FAD and three 15-month-old TgAD mice); brain coordinates (AP = -0.6 mm; ML = 1.2 mm; DV = 2.0 mm); behavioral testing (Fear conditioning test; Balance beam test; Novel object recognition test; Morris water maze test; Y-maze test); neurodegenerative (Alzheimer's);

Q11938: P. Vemula, *et al.* Evaluating the Efficacy of Purchased Antisense Oligonucleotides to Reduce Mouse and Human Tau in Vivo. *Frontiers in Molecular Neuroscience* 2023;16(1320182)

Agents: Oligonucleotides, antisense mouse tau-targeted; human tau knockdown **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6; PS19; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose: (30 µg/day); animal info (isoflurane anesthesia); antisense; tauopathies, including Alzheimer's

Q11935: B. J. Umlauf, *et al.* A novel strategy to increase the therapeutic potency of GBM chemotherapy via altering parenchymal/cerebral spinal fluid clearance rate. *Journal of Controlled Release* 2023;364(195-205)

Agents: Lidocaine; sunitinib; propranolol hydrochloride; cotinine; fluticasone propionate; phentolamine mesylate; MLN4924

Vehicle: PBS; **Route:** CSF/CNS (right ventricle); **Species:** Mice; **Strain:** NOD SCID; C57BL6; **Pump:** 2002; **Duration:** 7; 14 days;

ALZET Comments: Dose: (20 mg/kg of sunitinib, 4 mg/kg propranolol hydrochloride, 2 mg/mL lidocaine, 5 mg/kg cotinine, 0.5 mg/kg fluticasone propionate, 0.1 mg/kg phentolamine mesylate, 3.75 mg/kg MLN4924); controls received mp w/ vehicle; brain coordinates (within 1 mm to the right of the bregma); cancer (glioblastoma);

Q10992: A. Saudi, *et al.* Investigating the Impact of Delivery Routes for Exon Skipping Therapies in the CNS of DMD Mouse Models. *Cells* 2023;12(6):

Agents: Oligonucleotides, antisense **Vehicle:** Not Stated; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** hDMD; mdx52; **Pump:** 1002; **Duration:** 2 weeks;

ALZET Comments: Dose (~700 nmol); animal info: 6–8-week-old mdx52 and WT mice; comparison of bolus injection vs mp; neurodegenerative (neurological disorder); brain tissue distribution

Q11003: H. L. Song, *et al.* Monoclonal antibody Y01 prevents tauopathy progression induced by lysine 280-acetylated tau in cell and mouse models. *Journal of Clinical Investigation* 2023;133(8):

Agents: Monoclonal antibody Y01 **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** tau-P301L; **Pump:** Not Stated; **Duration:** 28 days;

ALZET Comments: Dose (1.9 mg/ml); Controls received mp w/ vehicle; animal info: 8 months; comparison of ip injection vs mp; ALZET brain infusion kit used; Brain coordinates: 0.58 mm posterior to bregma, 1 mm lateral to the midline, and 2 mm from the skull surface; behavioral testing (Nest building test; Y maze; Morris water maze); neurodegenerative (Alzheimer's)

Q10988: J. G. Rosa, *et al.* BDNF is altered in a brain-region specific manner and rescues deficits in Spinocerebellar Ataxia Type 1. *Neurobiology of Disease* 2023;178(106023)

Agents: Brain-derived neurotrophic factor, recombinant **Vehicle:** CSF, artificial; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** Atxn154Q/2Q; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: Dose (0.71 µg/day); Controls received mp w/ vehicle; animal info: 7 week old mice; Brain coordinates ((A/P 1.1 mm; M/L 0.5 mm; D/V -2.5 mm from Bregma); behavioral testing (Cognitive testing; Barnes maze; Contextual fear conditioning); neurodegenerative, Spinocerebellar ataxia type-1;

Q10657: M. V. Rao, *et al.* Autophagy is a Novel Pathway for Neurofilament Protein Degradation in Vivo. *Autophagy* 2023;19(4):1277-1292

Agents: 3-methyladenine **Vehicle:** DMSO; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Dose: 3-MA (09 mg/ml); 50% DMSO vehicle used; Controls received mp w/ vehicle; animal info: 9-month-old mice; 3-methyladenine aka (3-MA) Brain coordinates (placement in the lateral ventricle were AP -0.3 mm to Bregma, ML 1.0 mm to Bregma, and DV 2.5 mm to cranium);



Q10972: P. Pakataridis, *et al.* EVIDENCE FOR BIOLOGICAL EFFECTS OF THE HEXAPEPTIDE NOVOKININ. *Journal of Chemical Technology and Metallurgy* 2023;58(3):608-614

Agents: Novokinin **Vehicle:** Saline, sterile; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** SHR; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose: 0.3 ug/rat/day; Controls received mp w/ vehicle; animal info: 2-month-old female 220 - 280g; receptor agonist (angiotensin AT2 receptor agonist novokinin aggravates some diabetes mellitus-induced alterations in Wistar); ALZET BIK2 used; Brain coordinates (1.5 mm lateral (right) to the sagittal suture, 1 mm caudal to bregma, and a depth of 3 mm); behavioral testing Open field test; Elevated plus maze test; Paw pressure test; T-maze rewarded alternating test; Novel object recognition; anxiety; memory

Q11428: N. Oleinik, *et al.* Alterations of lipid-mediated mitophagy result in aging-dependent sensorimotor defects. *Aging Cell* 2023;22(10):e13954

Agents: LCL768 **Vehicle:** Not Stated; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** WT and p17/PERMIT-/-; **Pump:** Not Stated; **Duration:** 28 days;

ALZET Comments: Dose: (0.1 mg/kg/day); animal info (12 months); behavioral testing (Morris water maze, dim-light open field, elevated plus maze, novelty Y-maze tests, accelerated rotarod);

Q10961: S. Meng, *et al.* Catalpol Mitigates Alzheimer's Disease Progression by Promoting the Expression of Neural Stem Cell Exosomes Released miR-138-5p. *Neurotoxicity Research* 2023;41(1):41-56

Agents: miR-138-5p inhibitor; scramble RNA, negative control **Vehicle:** Not Stated; **Route:** CSF/CNS (left lateral ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1004; **Duration:** Not Stated;

ALZET Comments: Dose (0.2 ml/minute); animal info: WT C57BL/6 mice; Brain coordinates (bregma: - 0.22 mm; dorsoventral: 3 mm; lateral: 1 mm); neurodegenerative (Alzheimer's disease);

Q11354: H. Liu, *et al.* Restoring carboxypeptidase E rescues BDNF maturation and neurogenesis in aged brains. *Life Medicine* 2023;2(2):

Agents: Carboxypeptidase E **Vehicle:** Not Stated; **Route:** CSF/CNS (left lateral ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** 1007D; **Duration:** 24 hours;

ALZET Comments: animal info (18 months old); brain coordinates: (AP 0.5 mm; L 1.3 mm; depth, 2.9 mm relative to bregma and the surface of the brain); neurodegenerative (neurogenesis); aging

Q11057: M. McNicholas, *et al.* A Compendium of Syngeneic, Transplantable Pediatric High-Grade Glioma Models Reveals Subtype-Specific Therapeutic Vulnerabilities. *Cancer Discovery* 2023;13(7):1592-1615

Agents: Trametinib; alpelisib **Vehicle:** Elacridar; saline, SBE-B-CD; **Route:** CSF/CNS (fourth ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2002; **Duration:** 15 days;

ALZET Comments: Dose: (30mg/kg); controls received mp w/ vehicle; animal info: 8-week-old; comparison of oral gavage vs mp; ALZET BIK 2 used; brain coordinates (0.5 mm anterior and 1.8 mm lateral from bregma for striatal targeting, and 0.8 mm posterior 761 and 1.1 mm lateral from lambda for pontine targeting); cyanoacrylate adhesive; (loctite); cancer

Q11055: Y. Madokoro, *et al.* Direct Enhancement Effect of Hippocampal Cholinergic Neurostimulating Peptide on Cholinergic Activity in the Hippocampus. *International Journal of Molecular Sciences* 2023;24(10):

Agents: Hippocampal cholinergic neurostimulating peptide **Vehicle:** Bicarbonate buffer; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Strain:** HCNP-pp cKO; **Pump:** 1002; **Duration:** 2 weeks;

ALZET Comments: Dose (0.75 pg/h); controls received mp w/ vehicle; animal info (male; 23 weeks old); peptides; brain coordinates (0.6 mm posterior and 1.2 mm lateral from the bregma); dental cement used;

Q11088: A. Lozano-Urena, *et al.* IGF2 interacts with the imprinted gene Cdkn1c to promote terminal differentiation of neural stem cells. *Development* 2023;150(1):

Agents: Insulin-like growth factor 2 **Vehicle:** PBS; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Male; 2-4 months old); Brain coordinates (Anteroposterior -0.1 mm; Mediolateral -0.8 mm from bregma; Dorsoventral -3 mm from skull surface);



Q11778: Y. Li, *et al.* Choroid plexus mast cells drive tumor-associated hydrocephalus. *CellPress* 2023;186(26):5719-5738 e28
Agents: Fluoromethylhistidine, alpha, Tamoxifen **Vehicle:** Corn oil; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Dose: (FMH 5 ug/d); post op. care (ampicillin); brain coordinates (AP - 1.0 mm, ML + 1.5 mm from bregma); dental cement used; cancer: tumor-associated hydrocephalus; behavioral testing (seeking/exploring tendencies (exit circle, monoparesis, straight walk and seeking behavior), startle reflex, and balance/motor coordination (beam));

Q11134: L. Y. Li, *et al.* Brain blood vessel autoantibodies in patients with NMDA and GABA(A) receptor encephalitis: identification of unconventional Myosin-X as target antigen. *Frontiers in Cellular Neuroscience* 2023;17(1077204

Agents: 011-138 mouse antibody; GO53 control mouse antibody **Vehicle:** Not Stated; **Route:** CSF/CNS (right ventricle); **Species:** Mice; **Strain:** C57BL6/J; **Pump:** 1002; **Duration:** 7 days; 14 days;

ALZET Comments: Dose (100 ug/7 days); Controls received mp w/ vehicle; animal info (10-12 weeks old); brain coordinates: 0.2 mm posterior and ± 1.00 mm lateral from bregma, depth 2.2 mm

Q11170: J. Lee, *et al.* Noggin-mediated effects on metabolite profiles of microglia and oligodendrocytes after ischemic insult. *Journal of Pharmaceutical and Biomedical Analysis* 2023;224(115196

Agents: Noggin, recombinant human **Vehicle:** CSF, artificial; **Route:** CSF/CNS (ipsilateral lateral ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** Not Stated; **Duration:** 2 weeks;

ALZET Comments: Dose (1 µg/day); Controls received mp w/ vehicle; animal info (Male mice; 10-11 weeks old); ALZET brain infusion kit 3 used; Brain coordinates (0.5 mm anterior to bregma, 1 mm lateral from midline, 3 mm below surface of skull);

Q11326: S. Kitaoka, *et al.* Repeated Social Defeat Stress Induces HMGB1 Nuclear Export in Prefrontal Neurons, Leading to Social Avoidance in Mice. *Cells* 2023;12(13):

Agents: IgG, control; antibody, monoclonal HMGB1 **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** C57BL/6N; **Pump:** 1002; **Duration:** 11 days;

ALZET Comments: Dose: 5 ng/day, 22.5 ng/day; animal info (9-week-old male); ALZET brain infusion kit 3 used; brain coordinates (0.2 mm posterior from the bregma, 1.0 mm lateral from the midline, and 2.3 mm below the skull surface at the bregma); dental cement used; behavioral testing (Repeated Social Defeat Stress and Social Interaction Test);

Q11082: J. E. Kim, *et al.* PLPP/CIN inhibits dopamine D1 receptor-mediated seizure activity via DARPP-32 serine 97 dephosphorylation in the mouse hippocampus. *Neuropharmacology* 2023;228(109462

Agents: TMCB **Vehicle:** Not Stated; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Strain:** PLPP/CIN-/-; PLPP/CINTg; **Pump:** 1007D; **Duration:** Not Stated;

ALZET Comments: Dose (0.5 uM); Controls received mp w/ vehicle; animal info (Male; 8 weeks old); ALZET BIK3 used; Brain coordinates (0 mm posterior; 0 mm lateral; 2 mm depth from bregma); epilepsy (seizure)