



Recent References (2016-Present) on the Administration of Peptides to the CNS
Using ALZET® Osmotic Pumps

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;

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);

Q12225: M. Beffinger, *et al.* FcRn-silencing of IL-12Fc prevents toxicity of local IL-12 therapy and prolongs survival in experimental glioblastoma. *Nature Communications* 2025;16(1):4751

Agents: IL-12Fc, mouse **Vehicle:** PBS; **Route:** CSF/CNS (parenchyma); **Species:** Mice; **Strain:** hFcRn Tg32; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose (12.5 µg/kg/day); controls received mp w/ vehicle; peptides; IL-12 + Fc; brain coordinates (depth: 3mm from burr hole); cancer (glioblastoma); immunology;

Q12615: H. J. Yang, *et al.* Efficacy and Mechanism of Schisandra chinensis Fructus Water Extract in Alzheimer's Disease: Insights from Network Pharmacology and Validation in an Amyloid-beta Infused Animal Model. *Nutrients* 2024;16(21):

Agents: Amyloid-B Peptide (25-35) **Vehicle:** Not Stated; **Route:** CSF/CNS (hippocampus); **Species:** Rats; **Strain:** Sprague Dawley; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (3.6 nmol/day); animal info (Male 192 ± 30 g, ketamine, xylazine anesthesia); peptides; brain coordinates (lateral: -3.3 mm from bregma; posterior: 2.0 mm from midline; ventral: -2.5 mm from dura); behavioral testing (Y-shaped maze; passive avoidance test; water maze setup); neurodegenerative (Alzheimer's);

Q11876: D. A. Ozturk Ozturk, *et al.* Central MOTS-c infusion affects reproductive hormones in obese and non-obese rats. *Neuroscience Letters* 2024;826(137722)

Agents: Peptide, mitochondrial-derived **Vehicle:** Not Stated; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Strain:** Wistar; Albino; **Pump:** 2ML2; **Duration:** 14 days;

ALZET Comments: Dose (10 uM, 100 uM); controls received mp w/ aCSF; animal info (male 21 days old); peptides; ALZET brain infusion kit 1 used; brain coordinates (1.4 mm lateral; 0.8 mm posterior; 4.8 mm vertical); bilateral cannula used; dental cement used; obesity;

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 mIU/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);



- T0019:** T. Martynyuk. Mitigating secondary conditions of injury and disease; the dich. Drexel University Dissertation 2024;
Agents: XPro1595 **Vehicle:** Not Stated; **Route:** CSF/CNS (spinal cord); **Species:** Mice; **Strain:** C57Bl/6; **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Dose (2.5 mg/ml); animal info (adult male and female; 3-4 months old); XPro1595 is an anti-tumor necrosis factor biologic; peptides; ALZET brain infusion kit 3 used; spinal cord injury; immunology; "To investigate the impact of elevated intraspinal sTNF on antiviral immunity following chronic T9 SCI we delivered XPro1595, an anti-sTNF biologic, continuously for 4 weeks via an osmotic pump, directly to the site of injury" pg. 44;
- Q12323:** C. F. Liu, *et al.* Lactocaseibacillus-deglycosylated isoflavones prevent Abeta 40-induced Alzheimer's disease in a rat model. *AMB Express* 2024;14(1):90
Agents: Amyloid-beta 40 **Vehicle:** Acetonitrile; Trifluoroacetic acid; **Route:** CSF/CNS (intracerebroventricular); **Species:** Rats; **Strain:** Sprague-Dawley; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Dose (24.299 ug/180 ul); 35% acetonitrile, 0.1% trifluoroacetic acid used; controls received mp w/ vehicle; animal info (male; 6-8 weeks old; 300 g, sodium pentobarbital anesthesia); peptides; brain coordinates (left skull relative to bregma 0.8 mm posterior, 1.4 mm lateral); dental cement used; behavioral testing (maze; memory; learning); neurodegenerative (Alzheimer's disease);
- Q12312:** X. Li, *et al.* Peripheral gating of mechanosensation by glial diazepam binding inhibitor. *Journal of Clinical Investigation* 2024;134(16):
Agents: Diazepam binding inhibitor, recombinant **Vehicle:** Not Stated; **Route:** CSF/CNS (dorsal root ganglion); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2002; **Duration:** 14 days;
ALZET Comments: controls received mp w/ vehicle; animal info (male, sodium pentobarbital anesthesia); GABA A receptor agonist; peptides; ALZET brain infusion kit 2 used; behavioral testing (mechanical sensitivity; rotarod); therapeutic indication (chronic pain);
- Q12193:** H. J. Ham, *et al.* Inhibition of Amyloid-beta (Abeta)-Induced Cognitive Impairment and Neuroinflammation in CH13L1 Knockout Mice through Downregulation of ERK-PTX3 Pathway. *International Journal of Molecular Sciences* 2024;25(10):
Agents: Amyloid-beta (1-42), oligomeric **Vehicle:** Saline; **Route:** CSF/CNS (dentate gyrus of hippocampus); **Species:** Mice; **Strain:** WT:CH13L1KO, C57BL/L6; **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Dose (300 pmol/day); controls received mp w/ vehicle; animal info (10 weeks old); peptides; ALZET brain infusion kit 3 used; brain coordinates (AP, -2 mm; ML, ±1.3 mm; DV, -2.2 mm); behavioral testing (morris water maze; probe; memory); neurodegenerative (Alzheimer's);
- Q12164:** L. M. Frago, *et al.* Reduction in Hippocampal Amyloid-beta Peptide (Abeta) Content during Glycine-Proline-Glutamate (Gly-Pro-Glu) Co-Administration Is Associated with Changes in Inflammation and Insulin-like Growth Factor (IGF)-I Signaling. *International Journal of Molecular Sciences* 2024;25(11):
Agents: Amyloid beta 25-35 **Vehicle:** Acetic acid; **Route:** CSF/CNS (right ventricle); **Species:** Rat; **Strain:** Wistar; **Pump:** Not Stated; **Duration:** 14 days;
ALZET Comments: Dose (300 pmol/day); 1% acetic acid used; controls received mp w/ vehicle; animal info (female, 8 weeks of age, 250-280g); peptides; brain coordinates (-0.3 mm anteroposterior, 1.1 mm lateral); neurodegenerative (Alzheimer's); "Here, we report that GPE blocks most of the changes in cytokine content in the hippocampus induced by the continuous infusion of Aβ and that this effect may be mediated by preserving the activation of leptin- and IGF-I-related signaling pathways," pg. 8;
- Q12152:** J. M. do Carmo, *et al.* Chronic central nervous system leptin administration attenuates kidney dysfunction and injury in a model of ischemia/reperfusion-induced acute kidney injury. *American Journal of Physiology Renal Physiology* 2024;327(6):F957-F966
Agents: Leptin **Vehicle:** Saline; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rats; **Strain:** Sprague-Dawley; **Pump:** 2002; **Duration:** 12 days;
ALZET Comments: Dose: (0.021 µg/h); controls received mp w/ vehicle; animal info (male 12 weeks old); post op. care (penicillin G, 10 mg/kg, 50 µg/kg bolus injection of long-lasting buprenorphine); blood pressure measured via femoral artery catheter during GFR measurement; MAP monitored in mmHg (fig 3); peptides; ischemia (unilateral renal ischemia/reperfusion); nephrology; acute kidney injury



Q11842: J. Cheng, *et al.* Myeloid cells coordinately induce glioma cell-intrinsic and cell-extrinsic pathways for chemoresistance via GP130 signaling. *Cell Reports Medicine* 2024;5(8):101658

Agents: Humanin **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL6N; **Pump:** 2004; **Duration:** 28 days; **ALZET Comments:** Dose (100, 200 nM); controls received mp w/ vehicle; peptides;

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;

Q11430: J. S. Park, *et al.* Amphiregulin normalizes altered circuit connectivity for social dominance of the CRT3 knockout mouse. *Molecular Psychiatry* 2023;28(11):4655-4665

Agents: Amphiregulin, mouse recombinant; amphiregulin, epidermal growth factor; amphiregulin, heparin binding; epidermal growth factor proteins, mouse **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Strain:** Sprague Dawley; WT, CRT3; **Pump:** 1004; 2004; **Duration:** 21 days;

ALZET Comments: controls received mp w/ vehicle; animal info (male 5-6 weeks old rats; male 12 week old mice); post op. care (ketoprofen 8 mg/kg); peptides; ALZET brain infusion kit 3 used; brain coordinates (AP -0.3 mm from bregma, lateral 1 mm from bregma, AP: -1.2 mm from bregma, lateral -2 mm, DV 5 mm); MRI; PEEK tubing used

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; therapeutic indication (Alzheimer's and Lewy body dementia);

Q11086: C.-W. Lin, *et al.* Monascus-fermented metabolites repressed amyloid β -peptide-induced neurotoxicity and inflammatory response in in vitro and in vivo studies. *Journal of Functional Foods* 2023;104(10):104104

Agents: Amyloid beta-peptide-40 **Vehicle:** Acetonitrile; trifluoroacetic acid; **Route:** CSF/CNS (left ventricle); **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** Not Stated; **Duration:** 28 days;

ALZET Comments: 35% acetonitrile solution; Controls received mp w/ vehicle; animal info (Male; 6-8 weeks old); peptides; ALZET brain infusion kit 2 used; dental cement used; Alzheimer's

Q11079: A. Huang, *et al.* Modulation of foraging-like behaviors by cholesterol-FGF19 axis. *Cell & Bioscience* 2023;13(1):20

Agents: Fibroblast growth factor 19 **Vehicle:** CSF, artificial; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2006; **Duration:** 2 weeks;

ALZET Comments: Dose: FGF19 (15 ng/0.5 ul/h); Controls received mp w/ vehicle; animal info (Male; 5 months old); peptides; pumps replaced twice; functionality of mp verified by measuring residual volume; Brain coordinates: (Anteroposterior -0.3 mm to bregma, lateral 1 mm to bregma, -2.5 mm below skull); vinyl tubing used; behavioral testing (Open field);

Q12104: J. M. do Carmo, *et al.* Sex differences in weight gain, blood pressure control, and responses to melanocortin-4 receptor antagonism in offspring from lean and obese parents. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology* 2023;325(4):R401-R410

Agents: SHU-9119 **Vehicle:** Saline; **Route:** CSF/CNS (intracerebroventricular); **Species:** Rats; **Strain:** Sprague-Dawley; **Pump:** 2002; **Duration:** 7 days;

ALZET Comments: Dose (1 nmol/h); 0.9% saline used; controls received mp w/ vehicle; animal info (male and female, 24-26 weeks old, isoflurane anesthesia); functionality of mp verified via plasma leptin concentration; blood pressure measured via telemetry probes in abdominal aorta; MC4R antagonist; peptides; Tygon tubing; cardiovascular; hypertension; obesity; parental obesity model



R0438: G. Canet, *et al.* The pathomimetic oAβ(25)(-)(35) model of Alzheimer's disease: Potential for screening of new therapeutic agents. *Pharmacology & Therapeutics* 2023;245(108398)

Agents: Galantamine memantine hybrid **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 7 days;

ALZET Comments: Dose (2.5. or 7.5 µg/day); peptides; Alzheimer's disease; review of different approaches for AD prevention and therapy

Q11243: K. A. Alkadhi. A rat model of pre-clinical Alzheimer's disease. *Handbook of Animal Models in Neurological Disorders* 2023;43-55

Agents: Amyloid beta (1-42) **Vehicle:** Acetonitrile; trifluoroacetic acid; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Strain:** Wistar; **Pump:** Not Stated; **Duration:** 2 weeks;

ALZET Comments: Dose (160pmol/day); 35% acetonitrile/0.1% trifluoroacetic acid used; post op. care: wound clips used; triple antibiotic ointment; peptides; catheter; Brain coordinates (AP: -0.3, L: 1.2, V: 4.5); dental cement used; behavioral testing: Radial arm water maze task; Short term memory; Long term memory; neurodegenerative (Alzheimer's); good methods p. 44-45

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

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

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

Q10680: P. K. Singh, *et al.* Specific Inhibition of NADPH Oxidase 2 Modifies Chronic Epilepsy. *Redox Biology* 2022;58(102549)

Agents: Gp91ds-tat **Vehicle:** Not Stated; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Dose (800 ng/kg/day); Controls received mp w/ vehicle; animal info (Naïve male and female rats (200–250 g); post op. care (Before initiating the surgery, rats were injected with buprenorphine (0.2 mg/kg; SC) and Metacam (1 mg/kg; SC) for pain relief); After surgery rats were injected with 3–5 ml of warmed Ringer's solution and amoxicillin (Betamox LA, 100 mg/kg); peptides; catheter; ALZET brain infusion kit 2 used; Brain coordinates (vinyl catheter tube was implanted into the right lateral ventricle of brain [1 mm posterior, 1.2 mm lateral, 4.5 mm ventral from the bregma); dental cement used; neurodegenerative (Epilepsy);

Q10579: J. Kopecky, *et al.* Intratumoral Administration of the Antisecretory Peptide AF16 Cures Murine Gliomas and Modulates Macrophage Functions. *Scientific Reports* 2022;12(1):4609

Agents: Temozolomide; AF16 **Vehicle:** Not Stated; **Route:** CSF/CNS (intratumoral); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1003D; **Duration:** 3 days;

ALZET Comments: Dose (180 mg/72 µl; 300 µg/72 µl); animal info (Female; 8-10 weeks old); peptides; immunology; cancer (Glioblastoma);

Q10437: A. Abot, *et al.* How does apelin affect LH levels? An investigation at the level of GnRH and KNDy neurons. *Molecular and Cellular Endocrinology* 2022;557(111752)

Agents: Apelin-13 **Vehicle:** CSF, artificial; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2004; **Duration:** 2 weeks;

ALZET Comments: animal info (16 total; Male; 9 weeks old); peptides; ALZET brain infusion kit 3 used; Brain coordinates (-1 mm lateral; -0.2 mm anteroposterior from bregma; 1.7 mm below skull surface);



Q10739: V. Zhuravleva, *et al.* Rab35 and Glucocorticoids Regulate APP and BACE1 Trafficking to Modulate Abeta Production. *Cell Death & Diseases* 2021;12(12):1137

Agents: Amyloid-beta, 1-40 **Vehicle:** Saline; **Route:** CSF/CNS (intracerebroventricular); **Species:** Rat; **Strain:** Wistar; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: animal info (12-months old; male rats); AB1-40 aka toxic amyloid beta peptides; ALZET brain infusion kit used; Brain coordinates (-0.6 mm anteroposterior; -1.4 mm mediolateral; -3.5 mm dorsoventral); neurodegenerative (Alzheimer's disease);

Q11334: C. Tohda, *et al.* A Novel Heptapeptide, GPPGPAG Transfers to the Brain, and Ameliorates Memory Dysfunction and Dendritic Atrophy in Alzheimer's Disease Model Mice. *Frontiers in Pharmacology* 2021;12(680652)

Agents: GPPGPAG **Vehicle:** CSF, artificial; **Route:** CSF/CNS (left lateral ventricle); **Species:** Mice; **Strain:** 5XFAD; WT; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose: (1.64 µM); Controls received mp w/ vehicle; animal info: male or female, 5–7 months; peptides; stability of drug in saline, mouse plasma, mouse cerebral cortex confirmed by LC-MS quantification; ALZET brain infusion kit 3 used; Brain coordinates (left ventricle (bregma: -0.2 mm, lateral: 1.0 mm, depth: -3.0 mm); behavioral testing: object recognition test; neurodegenerative (Alzheimer's disease); "Direct infusion of GPPGPAG into the lateral ventricle of 5XFAD mice for 28 days improved object recognition memory."

Q8744: S.-K. Mun, *et al.* MicroRNAs Related to Cognitive Impairment After Hearing Loss. *Clinical and Experimental Otorhinolaryngology* 2021;14(1):76-81

Agents: Amyloid protein, beta (1-42) **Vehicle:** Acetonitrile; Trifluoroacetic Acid; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Strain:** Wistar; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Dose (160 pmol/day); 35% Acetonitrile, 0.1% Trifluoroacetic Acid used; animal info (200-250 g, 7 weeks old); behavioral testing Y-maze test, object-in-place task, novel object recognition task, object location task; peptides; ALZET brain infusion kit 2 used; Brain coordinates (anteroposterior, -0.3; lateral, 1.2; vertical, 4.5); neurodegenerative (Hearing loss);

T0015: R. Koyama. The role of pannexin 1-mediated ATP signaling in the trigeminal spinal subnucleus caudalis in tongue cancer pain. *Proceedings of the National Academy of Sciences* 2021;

Agents: 10Panx; Brilliant blue G; BzATP **Vehicle:** PBS; **Route:** CSF/CNS (cisterna magna); **Species:** Rat; **Strain:** Fischer; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose: PBS and 10Panx (20 nmol), Brilliant Blue G (7 pmol), or BzATP (20 pmol); Controls received mp w/ vehicle; animal info: male (weighing 200–250 g); post op. care: buprenorphine, meloxicam, ketoprofen, carprofen, or tramadol; peptides; BBG is an antagonist of P2X7Rs; BzATP is a specific agonist of P2X7Rs; 10Panx is an inhibitory peptide for PANX1 channels; PANX1 is a therapeutic target for the development of appropriate drugs to prevent tongue cancer pain

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; **Strain:** C57BL/6; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: animal info: mice Interleukin-2 aka (IL-2); peptides; immunology;

Q9204: L. S. Dalboge, *et al.* Evaluation of VGF peptides as potential anti-obesity candidates in pre-clinical animal models. *Peptides* 2021;136(170444)

Agents: NERP-1; HHPD-41; TLQP-21; PGH-NH2; NERP-2; TLQP-62; Glucagon-like peptide-1 (7-37); Ghrelin **Vehicle:** Not Stated; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose (2 nmol/mouse/day Glucagon-like peptide-1 (7-37); 3 nmol/mouse/day Ghrelin); Controls received mp w/ vehicle; animal info (male and female, 13 weeks old); Glucagon-like peptide-1 aka GLP-1 (7-37); peptides; Brain coordinates (-0.7 mm posterior, -1.2 mm lateral [left], and -2.0 mm ventral); dependence;



Q9040: J. Zhu, *et al.* Apelin-36 mediates neuroprotective effects by regulating oxidative stress, autophagy and apoptosis in MPTP-induced Parkinson's disease model mice. *Brain Research* 2020;1726(146493)

Agents: Apelin-36 **Vehicle:** Saline; **Route:** CSF/CNS (substantia nigra); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose (0.1, 0.3 and 0.5 µg/ mice/day); Controls received mp w/ vehicle; animal info (Nine- to eleven-week old male, 23–27 g); Apelin-36 is a neuroendocrine peptide in 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridin; peptides; ALZET brain infusion kit 2 used; Brain coordinates (AP: –3.1 mm; ML: 1.3 mm; DV: –4.25 mm); neurodegenerative (Parkinson's disease);

Q9829: L. Zheng, *et al.* Rhythmic light flicker rescues hippocampal low gamma and protects ischemic neurons by enhancing presynaptic plasticity. *Nature Communications* 2020;11(1):3012

Agents: GK23; GK13; Conotoxin, w-; **Vehicle:** CSF, Artificial; **Route:** CSF/CNS (left ventricle); **Species:** Mice; **Strain:** C57Bl/6; Thy1-YFP-H; **Pump:** 1003D; **Duration:** 3 days;

ALZET Comments: Dose (2 mg/kg/day GK23, GK13; 2.28 ng/kg/day w-Conotoxin); animal info (Adult male C57Bl/6 mice (3-months-old)); behavioral testing (Open field test; Morris water maze; Y-maze test); peptides; ALZET brain infusion kit 3 used; Brain coordinates (coordinates from bregma: anterior-posterior = –0.5 mm; lateral = 1.0 mm); dental cement used; ischemia (cerebral ischemia);

Q9564: W. Xu, *et al.* Blockade of Nogo-A/Nogo-66 receptor 1 (NgR1) Inhibits Autophagic Activation and Prevents Secondary Neuronal Damage in the Thalamus after Focal Cerebral Infarction in Hypertensive Rats. *Neuroscience* 2020;431(103-114

Agents: NEP1-40 **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** Not Stated; **Duration:** 3 days;

ALZET Comments: Dose (270 ug/kg); Controls received mp w/ vehicle; animal info (male Sprague–Dawley rats, weighing 60–90 g); behavioral testing (adhesive removal test); NEP1-40 aka Nogo-66 receptor antagonist peptide; peptides; Brain coordinates (relative to bregma: -1.0 mm anteroposterior, 1.4 mm lateral, and -4.0 mm dorsoventral); ischemia (cerebral);

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; **Strain:** C57Bl6; **Pump:** 1002; **Duration:** Not stated;

ALZET Comments: Dose (1.2 mg/kg/day); Controls received mp w/ vehicle; animal info (Male 30 g); peptides; Brain coordinates (AP + 2.0, ML 0.8, DV 1.5); neurodegenerative (Glutamatergic transmission);

Q9999: J. Lee, *et al.* Antagonistic interaction between central glucagon-like Peptide-1 and oxytocin on diet-induced obesity mice. *Heliyon* 2020;6(10):e05190

Agents: Glucagon-like peptide-1 **Vehicle:** Saline; **Route:** CSF/CNS (third ventricle); **Species:** Mice; **Strain:** C57BL6/J; **Pump:** 1002D; **Duration:** 26 days;

ALZET Comments: Dose (16.01 nmol/d); 0.9% Saline used; Controls received mp w/ vehicle; animal info (5 to 6-week-old male); Glucagon-like peptide-1 aka GLP-1; peptides; Brain coordinates (1.79 mm caudal to bregma); dental cement used; dependence;

Q8578: J. E. Kim, *et al.* Epigallocatechin-3-Gallate and PEDF 335 Peptide, 67LR Activators, Attenuate Vasogenic Edema, and Astroglial Degeneration Following Status Epilepticus. *Antioxidants (Basel)* 2020;9(9):

Agents: NU335; Epigallocatechin-3-O-gallate **Vehicle:** Not stated; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** 1003D; 1007D; **Duration:** 3 days;

ALZET Comments: Dose (50 µM Epigallocatechin-3-O-gallate; 1 µM NU335); Controls received mp w/ vehicle; animal info (Adult male rats, 7 weeks old); Epigallocatechin-3-O-gallate; NU335 aka pigment epithelium-derived factor-derived peptide; peptides; ALZET brain infusion kit 1 used; Brain coordinates (1 mm posterior; 1.5 mm lateral; –3.5 mm depth to the bregma); neurodegenerative (Epilepsy);



Q8850: L. Hyland, *et al.* Ghrelin infused into the dorsomedial hypothalamus of male mice increases food intake and adiposity. *Physiology & Behavior* 2020;220(11):2882

Agents: Ghrelin; JMV2959 **Vehicle:** Saline; **Route:** CSF/CNS (dorsomedial hypothalamus); **Species:** Mice; **Strain:** C57BLJ6; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose: Ghrelin (10 µg/day); JMV2959 (20 µg/day) Controls received mp w/ vehicle; animal info (adult male); post op. care: Polysporin and Lidocaine were administered to the surgical site to prevent bacterial infection and limit pain. Mice were then allowed to recover in a clean cage supplied with a heating pad, and Meloxicam (2 mg/kg) was injected subcutaneously once per day for three days to provide postoperative analgesia; JMV2959 aka growth hormone secretagogue receptor antagonist; peptides; ALZET brain infusion kit used; Brain coordinates (AP 1.6 mm, ML 0.4 mm, and DV 5.25 mm); dental cement used; replacement therapy (Ghrelin infusion); stress/adverse reaction: (see pg.4); Three mice did not survive the surgery and their baseline data were removed from the analyses. Six additional mice were removed from the data analyses due to incorrect cannula placements, and one mouse was removed because of abnormal cage behavior.

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; **Strain:** Wild type (WT); **Pump:** Not Stated; **Duration:** Not Stated;

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

Q8517: F. Gulcu Bulmus, *et al.* Kisspeptin and RF9 prevent paroxetine-induced changes in some parameters of seminal vesicle fluid in the male rats. *Andrologia* 2020;52(4):e13538

Agents: Kisspeptin; RFamide Peptide **Vehicle:** Saline; **Route:** CSF/CNS (intracerebroventricular); **Species:** Rat; **Strain:** Sprague Dawley; **Pump:** Not stated; **Duration:** 10 days;

ALZET Comments: Dose (1 nmol Kisspeptin and 20 nmol RF9); Controls received mp w/ vehicle; animal info (male rats (21-day-old) weighing 40 ± 2 g); RFamide Peptide aka RF9; peptides; Brain coordinates (according to the bregma, in the anterior– posterior plane: 0.90 mm; in the lateral plane: 1.4 mm; and 4 mm on the vertical plane); dependence;

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; **Strain:** NTG; 5XFAD; **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);

Q8434: A. de Boer, *et al.* Environmental enrichment during the chronic phase after experimental stroke promotes functional recovery without synergistic effects of EphA4 targeted therapy. *Human Molecular Genetics* 2020;29(4):605-617

Agents: APY-d3, Inactive peptide **Vehicle:** CSF, artificial; **Route:** CSF/CNS (ipsilesional lateral ventricle); **Species:** Mice; **Strain:** In-bred C57BL/6J; **Pump:** 1002; **Duration:** 2 weeks;

ALZET Comments: Dose (5 µg); animal info: male, 10–12 weeks of age); behavioral testing (accelerating rotarod; horizontal ladder task); APY-d3 aka peptide solution, β APYCVYR β ASWSC; peptides; ALZET brain infusion kit 3 used; Brain coordinates (0.1 mm caudal and 1.0 mm lateral of bregma); cyanoacrylate adhesive;

Q8349: N. D. Beckmann, *et al.* Multiscale causal networks identify VGF as a key regulator of Alzheimer's disease. *Nature Communications* 2020;11(1):3942

Agents: TLQP-62 **Vehicle:** CSF, artificial; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 28 days;

ALZET Comments: Dose (15 µg/day); Controls received mp w/ vehicle; animal info (Mice, 2-3 months of age); Behavioral testing (Barnes Maze Test); TLQP-62 aka C-terminal peptide; Brain coordinates (AP = - 0.1, ML = ± 1.0 and DV = - 3.0 from bregma (mm)); peptides; neurodegenerative (Alzheimer's disease);



Q9772: K. A. Alkadhi. A Novel Preclinical Rat Model of Alzheimer's Disease. *Neuromethods* 2020;

Agents: Amyloid-Beta 1-42 Peptides **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Rat; **Strain:** Wistar; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (160 pmol/day); animal info (Male); behavioral testing (Water Maze Test); peptides; Brain coordinates (AP: -0.3, L: 1.2, V: 4.5); bilateral cannula used; dental cement used; neurodegenerative (Alzheimer's Disease); good methods (p. 71-3)

Q8330: E. Akyuz, *et al.* Unraveling the Role of Inwardly Rectifying Potassium Channels in the Hippocampus of an Abeta(1-42)-Infused Rat Model of Alzheimer's Disease. *Biomedicines* 2020;8(3):

Agents: Amyloid beta 1-42 **Vehicle:** Saline; **Route:** CSF/CNS (right hippocampus); **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose (300 pmol/day); 0.9% NaCl saline used; Controls received mp w/ vehicle; animal info (Adult female 6-month-old); Amyloid beta 1-42 aka AB 1-42; peptides; Brain coordinates (coordinates from bregma: -3.60 mm anteroposterior; -2.00 mm lateral; -4.00 mm vertical); dental cement used; neurodegenerative (Alzheimer's Disease);

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

Agents: (1-42) AB Peptide; (1--42) AB Peptide; Methyllycaconitine **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1004; **Duration:** 4 weeks;

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

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

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

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

Q8260: Y. T. Liu, *et al.* Effects of porcine brain hydrolysate on impairment of cognitive learning ability in amyloid beta(1-40)-infused rats. *Anim Sci J* 2019;90(2):271-279

Agents: Amyloid B (1-40) **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Rat; **Strain:** Wistar; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Dose (10, 50, or 100 mg/kg/day); Controls received mp w/ vehicle; animal info (Male, 8 weeks old, 200-300g); behavioral testing (Morris Water Maze Test, Spatial Memory Test, Working Memory Test); Alpha B (1-40) aka AB; peptides; ALZET brain infusion kit 3 used; Brain coordinates (relative to bregma; 0.8 mm posterior, 1.4 mm lateral); dental cement used; neurodegenerative (Alzheimer's Disease);

Q9798: C. Lisci, *et al.* Photoperiodic changes in adiposity increase sensitivity of female Siberian hamsters to systemic VGF derived peptide TLQP-21. *PLoS One* 2019;14(8):e0221517

Agents: Rat--TLQP-21 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Hamster; **Strain:** Siberian; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose (1 mg/kg/day); Controls received mp w/ vehicle; animal info (Female, 3 months old); peptides

Q8876: Y. Li, *et al.* Activation of Nrf2 signaling by sitagliptin and quercetin combination against beta-amyloid induced Alzheimer's disease in rats. *Drug Development Research* 2019;80(6):837-845

Agents: Peptide, beta-amyloid (1-42) **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (300 pmol/day); Controls received mp w/ vehicle; animal info (Male, 250-300 g); behavioral testing (Morris Water Maze Test,); B-amyloid (1-42) peptide aka AB amyloid (1-42); peptides; Brain coordinates (Relative to bregma: A, 0.8; L, 1.4; V, 4.5); neurodegenerative (Alzheimer's Disease);



Q7987: S. Dyck, *et al.* LAR and PTPsigma receptors are negative regulators of oligodendrogenesis and oligodendrocyte integrity in spinal cord injury. *Glia* 2019;67(1):125-145

Agents: peptide, intracellular LAR; peptide, intracellular sigma **Vehicle:** saline, BSA buffered; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** 2001D, 1003D, 2001, 2002, and 2004; **Duration:** 1, 3, 5, 7, 14, 28 days; **ALZET Comments:** Dose ((ILP 10 µg/day), (ISP 10 µg/day)); 0.1% BSA in saline used; Controls received mp w/ vehicle; animal info (female, 250g); ILP (NH2-GRKKRRQRRRCDLADNIERLKANDGLKFSQEYESI-NH2) and ISP (NH2-GRKKRRQRRRCDMAEHMERLKANDSLKLSQEYESI-NH2) are peptides against LAR and PTPsigma; enzyme inhibitor (LAR and PTPsigma receptor); peptides; spinal cord injury; Therapeutic indication (inhibition of PTPsigma and LAR receptors promotes oligodendrogenesis by endogenous precursor cells, attenuates caspase 3-mediated cell death in mature oligodendrocytes, and preserves myelin);

Q7052: I. Rossetti, *et al.* Calcitonin gene-related peptide decreases IL-1beta, IL-6 as well as Ym1, Arg1, CD163 expression in a brain tissue context-dependent manner while ameliorating experimental autoimmune encephalomyelitis. *J Neuroimmunol* 2018;323(94-104

Agents: Calcitonin gene-related peptide **Vehicle:** CSF, artificial; **Route:** CSF/CNS (intrathecal); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2002; **Duration:** 2 weeks; **ALZET Comments:** Controls received mp w/ vehicle; animal info (7-8 week old female mice); peptides;

R0365: L. Maletinska, *et al.* The impact of anorexigenic peptides in experimental models of Alzheimer's disease pathology. *Journal of Endocrinology* 2018;

Agents: PrRP palmitoylated analogs, Leptin, Amylin, Cyclic AC253, Exendin 4 **Vehicle:** Not Stated; **Route:** SC, CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** THY-Tau22; APP/PS1; AMP8; **Pump:** Not Stated; **Duration:** 2 months; 28 d; 5 w, 5 mo, 16 w **ALZET Comments:** Dose: Palm11-PrRP (5 mg/kg/day), Leptin (2.4 nmol/day), Amylin (0.24 mg/kg/day), Exendin-4 (3.5 pmol/kg/min); animal info (5-7 month old); behavioral testing (Y-maze); neurodegenerative (Alzheimer's); This review summarizes current information on the potential neuroprotective properties of food intake-lowering (anorexigenic) peptides that have been tested in experimental models of AD-like pathology.

Q8170: T. Borner, *et al.* Brainstem GLP-1 signaling contributes to cancer anorexia-cachexia syndrome in the rat. *Neuropharmacology* 2018;131(282-290

Agents: Exendin-9 **Vehicle:** Saline; **Route:** CSF/CNS (left ventricle); **Species:** Rat; **Strain:** Buffalo; **Pump:** 2ML2; **Duration:** 11 d **ALZET Comments:** Dose EX-9 (100 ug/day); Controls received mp w/ vehicle; Animal info: (Male 250-280g); GLP-1R antagonist Exendin 9 aka (EX-9); peptides; Brain coordinates (bregma-11.6 mm, latera l0.0 mm, dorsoventral-7.2 mm); Cancer;

Q10094: N. A. Benton, *et al.* Food restriction-induced changes in motivation differ with stages of the estrous cycle and are closely linked to RFamide-related peptide-3 but not kisspeptin in Syrian hamsters. *Physiology & Behavior* 2018;190(43-60

Agents: Peptide, Rat RF amide-related **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Hamster; **Strain:** Syrian; **Pump:** 2002; **Duration:** 14 days; **ALZET Comments:** Dose (50 ng/h); Controls received mp w/ vehicle; animal info (Adult, female hamsters); behavioral testing (food consumption); RFRP-3 aka Rat RFamide-related peptide; peptides; Brain coordinates (1.1 mm anterior to bregma, 1.0 mm lateral to the midline, and 4.0 mm ventral to dura); dental cement used;

Q10079: K. A. Alkadhi, *et al.* Exercise decreases BACE and APP levels in the hippocampus of a rat model of Alzheimer's disease. *Molecular and Cellular Neuroscience* 2018;86(25-29

Agents: Peptide, amyloid beta 1-42 **Vehicle:** Water, distilled; Acetonitrile; TFA; **Route:** SC; CSF/CNS (right lateral cerebral ventricle); **Species:** Rat; **Strain:** Wistar; **Pump:** Not Stated; **Duration:** 4 weeks; **ALZET Comments:** Dose (250 pmol/day); 64.9% distilled water, 35% acetonitrile, 0.1% trifluoroacetate (TFA) used; 2 control groups, 1 mp w/ agent, 1 mp w/ vehicle; animal info (adult male, 7 weeks, 200-225g); post op. care (wound clips used and triple antibiotic ointment); Amyloid beta 1 - 42 aka Aβ 1-42; peptides; Brain coordinates (AP, -0.3, L, 1.2, V, 4); Cannula placement verified via rat brain atlas; dental cement used; neurodegenerative (Alzheimer's); "Since our AD model was created by infusion of Aβ 1-42, we wanted to ascertain the possible effects of exogenous introduction of Aβ peptide on the endogenous system that produces AD-related peptides and whether regular exercise would be able to prevent these changes. The current and recent experiments showed that exercise might be beneficial for managing the ravages of AD probably through increasing endogenous BDNF." Therapeutic indication (exercise to increase production of BDNF);



Q7093: K. A. Alkadhi. Delayed effects of combined stress and Abeta infusion on L-LTP of the dentate gyrus: Prevention by nicotine. *Neuroscience Letters* 2018;682(10-15)

Agents: Amyloid peptide, beta (1-40); Amyloid peptide, beta (1-42) **Vehicle:** Acetonitrile, Trifluoacetic acid; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Strain:** Wistar; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (50/50 A β 1-40/A β 1-42 300 pmol/day); 35% acetonitrile, 0.1 trifluoacetic acid (TFA) used; Controls received mp w/ A β 42-1; animal info (Adult male 7 weeks, 200-225g); behavioral testing (psychosocial stress and nicotine); peptides; ALZET brain infusion kit used; neurodegenerative (Alzheimer's); Pumps implanted 4 weeks into study, chronic stress exacerbates the effect of A β on synaptic plasticity, therefore, chronic stress should be considered a risk factor in hastening the development of AD pathology. Found that nicotine prevents the deleterious effects of A β on synaptic plasticity, this supports epidemiological studies that report an inverse relationship between smoking and AD;

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); **Strain:** B6.129X1-Notch1tm2Rko/GridJ, Jag1tm2Grid/J; B6.Cg-Tg BAKik/J; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Controls received mp w/ decoy peptide; animal info (8-12 week old female 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);

Q5891: K. T. Santhosh, *et al.* Design and optimization of PLGA microparticles for controlled and local delivery of Neuregulin-1 in traumatic spinal cord injury. *J Control Release* 2017;261(147-162)

Agents: Neuregulin-1, human recombinant **Vehicle:** CSF, artificial; BSA; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Strain:** Sprague Dawley; **Pump:** 1003D; 2001; 2002; 2004; **Duration:** 3 days, 7 days, 14 days, 28 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (female, 250g); Dose (500ng/day); 1% BSA used; comparison of microparticles vs mp; spinal cord injury; peptides; Dose (500ng/day); Comparison of PLGA Microparticles with ALZET pumps;

Q6067: K. Rasri-Klosen, *et al.* Differential response patterns of kisspeptin and RFamide-related peptide to photoperiod and sex steroid feedback in the Djungarian hamster (*Phodopus sungorus*). *J Neuroendocrinol* 2017;29(9):

Agents: kisspeptin-10, RFamide-related peptide **Vehicle:** CSF, artificial; **Route:** CSF/CNS (lateral ventricle); **Species:** Hamster; **Strain:** Djungarian; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: Dose (0.25 nmol/h); animal info (4-6 month old hamsters); peptides;

Q6743: H. Pierce, *et al.* Cholinergic Signals from the CNS Regulate G-CSF-Mediated HSC Mobilization from Bone Marrow via a Glucocorticoid Signaling Relay. *Cell Stem Cell* 2017;20(5):648-658 e4

Agents: Pirenzepine; Scopolamine hydrobromide; Metyrapone; luteinizing hormone; ACTH **Vehicle:** PBS; **Route:** CSF/CNS (Third ventricle); **Species:** Mice; **Strain:** Wild-type; Chrm1-/-; **Pump:** 1002; **Duration:** Not Stated;

ALZET Comments: Dose (0.6 mg/kg/day Pirenzepine; 1.0 mg/kg Scopolamine hydrobromide; 100mg/kg/day Metyrapone; 2.8 mg/kg/day ACTH; 16ug/day LH); Controls received mp w/ vehicle; peptides; Brain coordinates (A/P -1.6 mm posterior to bregma, D/V -4.7 mm);

Q5082: K. Uekawa, *et al.* Intracerebroventricular Infusion of Angiotensin-(1-7) Ameliorates Cognitive Impairment and Memory Dysfunction in a Mouse Model of Alzheimer's Disease. *J Alzheimer's Dis* 2016;53(1):127-33

Agents: Angiotensin (1-7); A-779 **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Strain:** 5XFAD; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, 17 months old); ALZET brain infusion kit 3 used; neurodegenerative (Alzheimer's Disease); behavioral testing (Morris water maze); cardiovascular; peptides; used ALZET CSF formulation; Dose (Ang 1-7 500 ng/kg/h; A-779 5.0 ug/kg/h); Brain coordinates (relation to bregma 1.0mm lateral and 0.5 mm posterior);



Q5209: C. H. Su, *et al.* MRI/DTI of the Brain Stem Reveals Reversible and Irreversible Disruption of the Baroreflex Neural Circuits: Clinical Implications. *Theranostics* 2016;6(6):837-48

Agents: Angiotensin II **Vehicle:** Not Stated; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Strain:** C57BL6; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: animal info (male, adult); cardiovascular; peptides; bp measured using radiotelemetry (DSI); Dose (7.5 ug/hr);

Q5343: Sophie Duthel, *et al.* BDNF Signaling Promotes Vestibular Compensation by Increasing Neurogenesis and Remodeling the Expression of Potassium-Chloride Cotransporter KCC2 and GABAA Receptor in the Vestibular Nuclei. *Journal of Neuroscience* 2016;36(23):6199-6212

Agents: Brain-derived neurotrophic factor, K252a **Vehicle:** Saline; CSF, artificial; **Route:** CSF/CNS (ventricles); **Species:** Cat; **Strain:** Not Stated; **Pump:** 2ML4; **Duration:** 30 days;

ALZET Comments: Controls received mp w/ saline; animal info (adult, male cat, 4-5 kg); dose-response (pg 6205, 6206); behavioral testing (rotating beam experimental device test); peptides;

Q4900: P. Q. H. Renjun Wang, MD; Rui Zhou, BSc; Zengxiang Dong, PhD; *et al.* Sympathoexcitation in Rats With Chronic Heart Failure Depends on Homeobox D10 and MicroRNA-7b Inhibiting GABBR1 Translation in Paraventricular Nucleus. *Circulation: Heart Failure* 2016;9(1-10)

Agents: AntagomiR-7b; RNA, small interfering GABBR1; angiotensin II **Vehicle:** Not Stated; **Route:** CSF/CNS (paraventricular nucleus); **Species:** Rat; **Strain:** Wistar; **Pump:** 1004; 1002; **Duration:** 4 weeks; 2 weeks;

ALZET Comments: animal info (male, 180-200g); pumps replaced after 4 weeks; bilateral cannula used; tissue perfusion (paraventricular nucleus); cardiovascular; peptides; bilateral infusion; Dose (AntagomiR-7b or Ad-siGABBR1 40 ng/h; angiotensin II 1 ng/kg/min);

Q6624: M. K. Lakshmana, *et al.* Neuroprotective Effects of Pomegranate Peel Extract after Chronic Infusion with Amyloid- β Peptide in Mice. *Plos One* 2016;11(11):e0166123

Agents: Amyloid protein, beta **Vehicle:** HEPES; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57Bl/6; **Pump:** 1004; **Duration:** 35 d

ALZET Comments: Controls received mp w/ vehicle; animal info (Male mice); peptides; Brain coordinates (0.8 mm anteroposterior and 1.0 mm mediolateral to bregma and 2.0 mm dorsoventral to cranium);

Q5861: I. V. Guzhova, *et al.* HSP70-based anti-cancer immunotherapy. *Hum Vaccin Immunother* 2016;12(10):2529-2535

Agents: HSP70, human recomb. **Vehicle:** Not Stated; **Route:** CSF/CNS (intratumoral); **Species:** Rat; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: comparison of intracranial injections vs mp; cancer (Glioma); peptides; "Such injections, particularly those done using an osmotic pump, caused a significant delay in tumor growth and increase the survival of tumor-bearing animals." pg 2532; Therapeutic indication (Cancer, Glioma);

Q5341: A. Drougard, *et al.* Central chronic apelin infusion decreases energy expenditure and thermogenesis in mice. *Sci Rep* 2016;6(31849)

Agents: Apelin **Vehicle:** CSF, artificial; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57Bl6/J; **Pump:** 2004; **Duration:** 2 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (mice, 13-15 week old); animal info (C57Bl6/J mice, 13-15 week old); "stability of apelin and the duration of the treatment were compatible with the stability of the molecule" (pg. 8); peptides; anesthetized mice with isoflurane; Brain coordinates – 1 mm lateral, – 0.2 mm anteroposterior from the bregma and – 1.7 mm deep; Dose (20 nM);

Q4910: R. L. T. Baojian Xue, Yang Yu, Fang Guo, Terry G. Beltz, Robert B. Felder, *et al.* Central Renin–Angiotensin System Activation and Inflammation Induced by High-Fat Diet Sensitize Angiotensin II–Elicited Hypertension. *Hypertension* 2016;67(163-170)

Agents: Pentoxifylline; irbesartan; minocycline; angiotensin II **Vehicle:** CSF, artificial; Na sodium bicarbonate; saline; **Route:** CSF/CNS; **Species:** Rat; **Strain:** Sprague Dawley; **Pump:** 2004; 2002; 2001; **Duration:** 4 weeks; 2 weeks; 1 week;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, 10-12 weeks old); cardiovascular; peptides; Dose (ICV - Pentoxifylline 10 ug/hr; irbesartan 125 ug/day; minocycline 5 ug/hr; SC AngII 120 ng/kg/min); brain coordinates;