



Neuroscience Research Using ALZET® Osmotic Pumps: Alzheimer's Disease and Other Dementias

ALZET Osmotic Pumps are a valuable tool in neuroscience research, as evidenced by the thousands of publications describing their use in studies on neurodegeneration, ischemia, brain cancers, and more. Given that Alzheimer's disease is the most common cause of dementia, (accounting for 60-80% cases), ALZET pumps have been used by researchers in the widespread effort to investigate disease mechanisms and potential therapeutics.

Highlighted below are some of the newest research applications on Alzheimer's disease and other dementias. The following list of references is a more extensive compilation of research within the last few years. The short abstract following each reference in the attached list details the substance(s) infused, route of administration, animal model studied, solvent(s), model of pump, duration of infusion, and relevant notes. To obtain a complete listing of earlier references or additional technical information, please contact ALZET Technical Support by email at techsupport@alzet.com.

Recent Alzheimer's/Dementia Research

COMPOUND	ANIMAL	DURATION	APPLICATION	REFERENCE
Ang II	Rat	28 days	Inducing hypertension to evaluate the role of TGF-β1 in cognitive function related to vascular dementia	C. Guo <i>et al.</i> Elevated TGF-β1 impairs synaptic and cognitive function through activation of Smad2/3-Sp1 pathway in AngII-related hypertension. <i>EMBO Rep</i> 2025;26(12):3162-3186
FENM	Mice	7, 28 days	Continuous infusion of FENM to evaluate memory impairment	A. Carles <i>et al.</i> Neuroprotection by chronic administration of Fluoroethylnormemantine (FENM) in mouse models of Alzheimer's disease. <i>Alzheimers Res Ther</i> ; 2025;17(1):7
BrdU	Mice	7 days	Labeling of de novo dividing cells when analyzing radial glia-like stem cell cycle in adult hippocampal neurogenesis	D.I. Maltsev <i>et al.</i> Aging Modulates the Ability of Quiescent Radial Glia-Like Stem Cells in the Hippocampal Dentate Gyrus to be Recruited into Division by Pro-neurogenic Stimuli. <i>Mol Neurobiol</i> ; 2024;61(6):3461-3476
SCD1 inhibitor	Mice	28 days	Intracerebral infusion of SCD inhibitor to clarify involvement of peripheral metabolic changes	L.K. Hamilton <i>et al.</i> Central inhibition of stearyl-CoA desaturase has minimal effects on the peripheral metabolic symptoms of the 3xTg Alzheimer's disease mouse model; <i>Sci Rep</i> ; 2024;14(1):7742
Aβ(1–42)	Mice	14 days	Induce neuronal death aspect of amyloidopathy	H.J. Ham <i>et al.</i> Inhibition of Amyloid-β (Aβ)-Induced Cognitive Impairment and Neuroinflammation in CH3L1 Knockout Mice through Downregulation of ERK-PTX3 Pathway. <i>Int J Mol Sci</i> ; 2024;25(10):5550
CNO	Mice	1 month	Chronic inhibition of locus coeruleus norepinephrine neurons to demonstrate effects of beta-adrenergic signaling in pathophysiology	A.K. Evans <i>et al.</i> Impact of noradrenergic inhibition on neuroinflammation and pathophysiology in mouse models of Alzheimer's disease. <i>J Neuroinflammation</i> ; 2024;21(1):322

*If you are interested in a specific agent not listed, please request it at techsupport@alzet.com

Surgical Protocols:

Written protocols are available on our website. A surgical implantation video is also available, which describes proper preparation of the ALZET pump and surgical techniques for implantation in mice and rats. These can be found on <https://www.alzet.com/resources/downloads/>.



References from (2019-Present) on Alzheimer's Disease and Other Dementias Using ALZET® Osmotic Pumps

Q12254: C. Guo, *et al.* Elevated TGF-beta1 impairs synaptic and cognitive function through activation of Smad2/3-Sp1 pathway in AngII-related hypertension. *EMBO Reports* 2025;26(12):3162-3186

Agents: Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Rats; **Strain:** Sprague-Dawley; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Dose: (600 ng/kg/min); controls received mp w/ vehicle; animal info (2 month old male); blood pressure measured via tail-cuff plethysmography; systolic blood pressure significant increase by 30±5 mmHg in SBP in the AngII-treated rats compared to controls two weeks after use of the pump; behavioral testing (elevated plus maze, morris water maze); cardiovascular;

Q12070: A. Carles, *et al.* Neuroprotection by chronic administration of Fluoroethylnormemantine (FENM) in mouse models of Alzheimer's disease. *Alzheimers Research & Therapy* 2025;17(1):7

Agents: Fluoroethylnormemantine **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6, APP/PS1; **Pump:** 1007D; 1004; **Duration:** 7 days; 11 days;
ALZET Comments: dose-response (0.03 - 0.3 mg/kg/day); 0.9%, saline used; controls received mp w/ vehicle; animal info (6 weeks, 10 months old, isoflurane anesthesia); comparison of IP injection vs mp; behavioral testing (novel objective test; Y-maze); neurodegenerative (Alzheimer's); "...we confirmed the neuroprotective efficacy of FENM and demonstrated the efficacy of SC infusion in two mouse models of AD, namely the pharmacological Aβ25-35 model and the transgenic APP/PS1 line" p14;

Q12222: A. Badea, *et al.* Neuroimaging biomarkers of neuroprotection: Impact of voluntary versus enforced exercise in Alzheimer's disease models. *Magnetic Resonance Imaging* 2025;121(11):406

Agents: Manganese chloride **Vehicle:** Bicine; **Route:** Not Stated; **Species:** Mice; **Strain:** CVN-AD; **Pump:** 1007D; **Duration:** Not Stated;
ALZET Comments: Dose (64 μm/μl); animal info (female, ketamine xylazine anesthesia); behavioral testing (sucrose preference test; novel object recognition; novelty recognition trial); neurodegenerative (Alzheimer's); MRI;

Q11860: L. R. Miller, *et al.* IGF1R deficiency in vascular smooth muscle cells impairs myogenic autoregulation and cognition in mice. *Frontiers in Aging Neuroscience* 2024;16(13):20808

Agents: Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** Myh11-CreErT2ROSAf/ftdTigf1rf/fand Myh11-CreERT2 ROSAf/ftdT Igf1+/+; **Pump:** 2006; **Duration:** 7 weeks;
ALZET Comments: Dose (1 ug/min/kg); controls received mp w/ vehicle; animal info (male; 10-12 months old); post op. care (buprenorphine); blood pressure measured via tail cuff method; 80 mmHg - 200 mmHg; peptides; behavioral testing (radial arm water maze);

Q11851: D. I. Maltsev, *et al.* Aging Modulates the Ability of Quiescent Radial Glia-Like Stem Cells in the Hippocampal Dentate Gyrus to be Recruited into Division by Pro-neurogenic Stimuli. *Molecular Neurobiology* 2024;61(6):3461-3476

Agents: uridine, 5-bromo-2'-deoxy **Vehicle:** DMSO, sterile; **Route:** SC; **Species:** Mice; **Strain:** C57Bl/6; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Dose: (50 mg/kg/d); controls received mp w/ vehicle; animal info (female, isoflurane anesthesia); post op. care (ketoprofen inj 5 mg/kg; Iodine wound spray); good methods (p. 2-3);

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;



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;

Q12193: H. J. Ham, *et al.* Inhibition of Amyloid-beta (A β)-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/6; **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, $\pm$ 1.3 mm; DV, -2.2 mm); behavioral testing (morris water maze; probe; memory); neurodegenerative (Alzheimer's);

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;

Q12164: L. M. Frago, *et al.* Reduction in Hippocampal Amyloid-beta Peptide (A β) 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 A β and that this effect may be mediated by preserving the activation of leptin- and IGF-I-related signaling pathways," pg. 8;

Q11715: J. Faakye, *et al.* Preventing spontaneous cerebral microhemorrhages in aging mice: a novel approach targeting cellular senescence with ABT263/navitoclax. *Geroscience* 2024;46(1):21-37

Agents: Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2006; **Duration:** 47 days;

ALZET Comments: Dose (1 ug/min/kg); controls received mp w/ vehicle; animal info (6 months old); isoflurane anesthesia; post op. care (buprenorphine analgesia 0.1 mg/kg); blood pressure measured via tail-cuff; 115 mmHg-155 mmHg; cardiovascular; aging;

Q12130: A. K. Evans, *et al.* Impact of noradrenergic inhibition on neuroinflammation and pathophysiology in mouse models of Alzheimer's disease. *Journal of Neuroinflammation* 2024;21(1):322

Agents: Clozapine-N-oxide **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Strain:** 5XFFAD; **Pump:** 1004; **Duration:** 1 month;

ALZET Comments: Dose (2 mg/kg/day); animal info (6.5 months old); brain coordinates (A/P -5.45 mm, M/L $\pm$ 1.3 mm, D/V -3.8 mm & -3.4 mm); behavioral testing (Activity chamber; Y-maze: forced alternation); neurodegenerative (Alzheimer's);



Q12077: F. Chelms, *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:** 2w; **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; "

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;

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;

Q11031: J. Youwakim, *et al.* Neurovascular Coupling in Hypertension Is Impaired by IL-17A through Oxidative Stress. *International Journal of Molecular Sciences* 2023;24(4):

Agents: Angiotensin II; interleukin 17A, recombinant **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1002; 1007D; **Duration:** 14 days; 7 days;

ALZET Comments: Dose: Ang II 600 ng/kg/min, IL-17A 50 pg/kg/h; Controls received mp w/ vehicle; animal info: male, 10-12 weeks old; Blood pressure measured via Tail cuff; Blood pressure results see (pg.2) cardiovascular; hypertension

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 (Alzheimers);

Q11025: J. L. Wickline, *et al.* L-type calcium channel antagonist isradipine age-dependently decreases plaque associated dystrophic neurites in 5XFAD mouse model. *Neuropharmacology* 2023;227(109454

Agents: Isradipine **Vehicle:** DMSO; PEG300; **Route:** SC; **Species:** Mice; **Strain:** 5XFAD; **Pump:** 2004; **Duration:** 30 days;

ALZET Comments: Dose (3 mg/kg/day); (50% DMSO; 50% PEG 300) used; verified solubility of isradipine in vehicle; comparison of oral, sc extended-release pellets vs mp; Controls received mp w/ vehicle; animal info: 6 or 9 months; post op. care: analgesia 0.1 mL of 0.005 mg/mL buprenorphine sc, antibiotic ointment applied to suture site; behavioral testing (Open field; Novel object recognition; Morris water maze); neurodegenerative (Alzheimer's); aging;

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; neurodegenerative



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 disease)

Q11455: T. Sano, *et al.* Genetic Reduction of Insulin Signaling Mitigates Amyloid-beta Deposition by Promoting Expression of Extracellular Matrix Proteins in the Brain. *Journal of Neuroscience* 2023;43(43):7226-7241

Agents: RepSox **Vehicle:** DMSO; Saline; **Route:** SC; **Species:** Mice; **Strain:** A7; **Pump:** 2004; **Duration:** 6 weeks;

ALZET Comments: Dose (22.5 nM); 15% DMSO in sterile 0.9% saline used; animal info (14-month-old); pumps replaced after 3 weeks; selective inhibitor of TGF- β receptor I/ALK5; neurodegenerative (Alzheimer's); "We then performed continuous RepSox administration to evaluate the long-term effects on AB pathology." pg. 9

Q11449: E. R. Rodriguez-Ruiz, *et al.* The Proof-of-Concept of MBA121, a Tacrine-Ferulic Acid Hybrid, for Alzheimer's Disease Therapy. *International Journal of Molecular Sciences* 2023;24(15):

Agents: MBA121 **Vehicle:** Saline; DMSO; ethanol; **Route:** SC; **Species:** Mice; **Strain:** APP swe/PS1dE9; **Pump:** 2004; **Duration:** 5 months;

ALZET Comments: Dose (0.41 mg/kg/day); DMSO 50% in ethanol (7.5%) and water used; controls received mp w/ vehicle; animal info: 4.5 months; functionality of mp verified by residual volume; pumps replaced every 28 days; long-term study; behavioral testing (non-parametric Kruskal-Wallis test; memory task); neurodegenerative (Alzheimer's); "The mini-osmotic pumps were replaced every 28 d. The mini-osmotic pumps are widely used for the continuous administration of drugs in the study of neurodegenerative diseases" pg. 9;

Q11445: U. N. Ramirez-Jarquin, *et al.* Characterization of Mitochondria Degeneration in Spinal Motor Neurons Triggered by Chronic Over-activation of alpha-Amino-3-Hydroxy-5-Methylisoxazole-4-Propionic Acid Receptors in the Rat Spinal Cord in Vivo. *International Brain Research Organization* 2023;521(31-43)

Agents: Propionic acid, alpha-amino-3-hydroxy-5-methylisoxazole-4- **Vehicle:** Phosphate buffer; **Route:** CSF/CNS (spinal cord); **Species:** Rat; **Strain:** Wistar; **Pump:** 2004; **Duration:** Not Stated;

ALZET Comments: Dose (7.5 mM); 0.1 M phosphate buffer (PB) used; controls received mp w/ vehicle; animal info (adult male 270–300 g); post op. care (penicillin); dental cement used; neurodegenerative (ALS);

Q11434: S. M. Perez, *et al.* Aberrant Dopamine System Function in the Ferrous Amyloid Buthionine (FAB) Rat Model of Alzheimer's Disease. *international Journal of Molecular Sciences* 2023;24(8):

Agents: Ferrous amyloid buthionine; ferrous sulfate; L L-buthionine (S,R)-sulfoximine **Vehicle:** DPBS; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Strain:** Long Evans; **Pump:** 2ML4; **Duration:** 3 weeks;

ALZET Comments: Dose FAB: 1 μ mol/L A β 42, 1 mmol/L FeSO₄, 12 mmol/L L-buthionine (S,R)-sulfoximine (BSO); controls received mp w/ vehicle; animal info (male, 325–350 g); ALZET brain infusion kit 2 used; brain coordinates (A/P –0.9 mm and M/L +1.4 mm from Bregma; D/V –4.2 mm ventral of the brain surface); dental cement used; behavioral testing (Y-maze; Social interaction; Pre-pulse inhibition; MK-801-induced Locomotor response); neurodegenerative (Alzheimer's);

Q11425: T. Numakawa, *et al.* Involvement of brain-derived neurotrophic factor signaling in the pathogenesis of stress-related brain diseases. *Frontiers in Molecular Sciences* 2023;16(1247422)

Agents: Brain-derived neurotrophic factor; UE2316 **Vehicle:** CSF, artificial; **Route:** Not Stated; **Species:** Rat; **Strain:** Fischer; Tg2576; **Pump:** Not Stated; **Duration:** 4 weeks; 29 days;

ALZET Comments: Dose (BDNF 120 ng/d; UE2316 10 mg/kg/day); animal info: 24 mo old rats; neurodegenerative (Alzheimer's); aging;



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);

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):

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

Q11342: C. Kondak, *et al.* Mitochondrial Effects of Hydromethylthionine, Rivastigmine and Memantine in Tau-Transgenic Mice. *International Journal of Molecular Sciences* 2023;24(13):

Agents: Rivastigmine; memantine **Vehicle:** Aqua ad injectabilia; **Route:** SC; **Species:** Mice; **Strain:** NMRI; L1 transgenic; L66; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose: rivastigmine 5 mg/kg/d; memantine 1 mg/kg/d; controls received mp w/ vehicle; wound clips used; neurodegenerative (Alzheimer's)

Q11125: D. Knez, *et al.* 8-Hydroxyquinolyl nitrones as multifunctional ligands for the therapy of neurodegenerative diseases. *Acta Pharmaceutica Sinica B* 2023;13(5):2152-2175

Agents: Quinoline **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6Jcl; **Pump:** 2004; **Duration:** 2 months; 4 months;

ALZET Comments: Dose (0.62 mg/kg/day); Controls received mp w/ vehicle; animal info (Female; 5 and 10 months old); pumps replaced every 28 days; neurodegenerative; "The osmotic mini-pumps are widely used for continuous drug administration in the study of neurodegenerative diseases." p. 21

Q11730: K. Grychowska, *et al.* Superiority of the Triple-Acting 5-HT(6)R/5-HT(3)R Antagonist and MAO-B Reversible Inhibitor PZ-1922 over 5-HT(6)R Antagonist Intepirdine in Alleviation of Cognitive Deficits in Rats. *Journal of Medicinal Chemistry* 2023;66(21):14928-14947

Agents: PZ-1922; intepirdine **Vehicle:** Saline, sterile; **Route:** IP; **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** 2ML2; **Duration:** 1 week;

ALZET Comments: Dose: (3mg/kg/day); 0.9% saline used; controls received mp w/ vehicle; animal info (adult male); (5-HT6R/5-HT3R antagonist); behavioral testing (T-maze); neurodegenerative (Alzheimers);

R0451: I. Chaves-Coira, *et al.* Cognitive Deficits in Aging Related to Changes in Basal Forebrain Neuronal Activity. *Cells* 2023;12(11):

Agents: Insulin-like growth factor 1 **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Not Stated; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 28 days;

ALZET Comments: neurodegenerative; aging



R0438: G. Canet, *et al.* The pathomimetic oAbeta(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

R0467: T. Backstrom, *et al.* The GABA system, a new target for medications against cognitive impairment-Associated with neuroactive steroids. *Journal of Internal Medicine* 2023;294(3):281-294

Agents: Allopregnanolone **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** TG-APP^{Swe}/Arc; TG-APP^{Swe}/PS1; **Pump:** Not Stated; **Duration:** 1 months; 3 months;

ALZET Comments: neurodegenerative (Cognitive impairment); "In transgenic AD animal studies, continuous exposure to ALLO at physiological levels impairs cognition and increases degenerative AD pathology, whereas intermittent ALLO injections enhance cognition, indicating pleiotropic functions of ALLO." pg. 1;

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

Q11233: T. Ali, *et al.* Peptide aptamer targeting Abeta-PrP-Fyn axis reduces Alzheimer's disease pathologies in 5XFAD transgenic mouse model. *Cellular and Molecular Life Sciences* 2023;80(6):139

Agents: PA8; Thioredoxin A **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Strain:** 5XFAD transgenic; **Pump:** 2006; **Duration:** 12 weeks;

ALZET Comments: Dose (14.4 µg/day); animal info (Female; 6 weeks old); pumps replaced every 6 weeks; behavioral testing (Open field test; Contextual fear conditioning test); neurodegenerative (Alzheimer's Disease); stress: "Three animals of the PA8 treatment group had to be euthanized due to complications following the second surgery and before the experimental end point and behavioral experiments. Issues included difficult wound healing and displacement of the osmotic pump tubing." p. 3

Q10887: Y. Zhao, *et al.* ATAD3A Oligomerization Promotes Neuropathology and Cognitive Deficits in Alzheimer's Disease Models. *Nature Communications* 2022;13(1):1121

Agents: TAT control peptide; DA1 peptide **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Strain:** 5XFAD; **Pump:** 2004; **Duration:** 8.5 months;

ALZET Comments: Dose (1 mg/kg/day); Animal info: (mice); behavioral testing: (Y-maze test; Barnes maze test; Nest building performance test; Open field test); pumps replaced every 4 weeks; peptides; neurodegenerative (Alzheimer's Disease);

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;



Q11036: C. A. Wood, *et al.* Activity disruption causes degeneration of entorhinal neurons in a mouse model of Alzheimer's circuit dysfunction. *eLife* 2022;11(**Agents:** Tetrodotoxin **Vehicle:** Saline; trypan blue; **Route:** CSF/CNS (right dorsal); **Species:** Mice; **Strain:** Nop-GlyCl; TeTX; **Pump:** 1003D; **Duration:** 3 days; 9 days;
ALZET Comments: Dose: 23 ul/day; 0.9% saline containing 0.04% Trypan blue used; Controls received mp w/ vehicle; pumps primed overnight; animal info: 3 to 6 months old; pumps replaced 4 and 7 days later to continue TTX administration; ALZET brain infusion kit 3 used; Brain coordinates (AP -4.5, ML +3.0, and DV -2.5 mm that targeted immediately above the right EC or at AP -3.1, ML +3.0, and DV -2.65 to target the dorsal DG); neurodegenerative (Alzheimer's);

R0456: C. Vandendriessche, *et al.* Biomarker and Therapeutic Potential of Peripheral Extracellular Vesicles in Alzheimer's Disease. *Advanced Drug Delivery Reviews* 2022;190(114486
Agents: Vesicle; extracellular **Vehicle:** Not Stated; **Route:** CSF/CNS (hippocampus); **Species:** Mice; **Strain:** APPswe, PS1dE9; **Pump:** Not Stated; **Duration:** 14 days;
ALZET Comments: Dose (2 mg/ml); animal info (mice); neurodegenerative (Alzheimer's disease);

Q10284: H. Tran, *et al.* Suppression of mutant C9orf72 expression by a potent mixed backbone antisense oligonucleotide. *Nature Medicine* 2022;28(1):117-124
Agents: Oligonucleotide, antisense **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** C9BAC transgenic; **Pump:** 1007D; **Duration:** 10 days;
ALZET Comments: Dose (2.5-20 nmol/day); dose-response (dose-dependent reduction in V1 and V3 repeat-containing transcripts in both the cortex and spinal cord regions after being treated with ASO3 and ASO5); ALZET brain infusion kit 3 used; bilateral cannula used; 2.5-20 nmol/day of each ASO were continuously infused over 10 d into the right lateral ventricle of age-matched heterozygous C9BAC mice through a cannula using an implanted Alzet osmotic pump; tissue perfusion (brain); neurodegenerative (ALS); "In our C9BAC mice, we were not able to safely perform ICV bolus injections with more than 10 nmol of LNA-modified ASO3 due to induction of severe motor phenotypes. To overcome this limitation, we use osmotic pumps to compare the potency of ASO3 and ASO5" pg3; gene therapy

Q11606: X. K. Tong, *et al.* Simvastatin rescues memory and granule cell maturation through the Wnt/beta-catenin signaling pathway in a mouse model of Alzheimer's disease. *Cell Death & Disease* 2022;13(4):325
Agents: WAY-262611; XAV939 **Vehicle:** CSF, artificial; **Route:** CSF/CNS (left cerebral ventricle); **Species:** Mice; **Strain:** APP; WT; **Pump:** Not Stated; **Duration:** 28 days;
ALZET Comments: Dose (2.64 ul/d: WAY 10 ug/d, XAV 0.5 nmol/hr); Controls received mp w/ vehicle; animal info (Male; Female; Wild-type; 4-6 months old; Showed early cerebrovascular deficits); behavioral testing (Morris water maze); WAY-26261 is selective Wnt/B-catenin agonist and Dickkopf-related protein 1 inhibitor; XAV939 is Wnt/B-catenin signaling inhibitor; Brain coordinates (AP: bregma -0.46 mm; L: 1 mm); neurodegenerative (Alzheimer's disease);

Q11580: J. C. Silva, *et al.* Anti-epileptogenic effects of synaptic vesicle protein 2A modulation in a mouse model of Alzheimer's disease. *Epilepsy Research* 2022;186(106994
Agents: Brivaracetam; Levetiracetam **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** Tg2576; **Pump:** 2004; **Duration:** 56 days;
ALZET Comments: Dose: BRV (10 mg/kg/day) and LEV (150 mg/kg/day); Controls received mp w/ vehicle; animal info: male and female 4 to 6 months; pumps replaced after 28 days; neurodegenerative (Alzheimer's disease);

Q11559: E. R. Roy, *et al.* Concerted type I interferon signaling in microglia and neural cells promotes memory impairment associated with amyloid beta plaques. *Immunity* 2022;55(5):879-894 e6
Agents: IFNAR, alpha; Immunoglobulin G1 **Vehicle:** PBS; NaCl; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** 5XFAD; **Pump:** 2004; **Duration:** 30 days;
ALZET Comments: Dose: (2 mg/ml); Controls received mp w/ vehicle; animal info: 4 month-old; behavioral testing: novel object recognition; Y maze test; ALZET brain infusion kit 3 used; Brain coordinates (-0.4 mm AP, ± 1.0 mm ML, and -2.0 mm DV from the surface of the skull at bregma); neurodegenerative (Alzheimer's disease);



Q11212: K. M. Pechacek, *et al.* Chronic lipopolysaccharide impairs motivation when delivered to the ventricles, but not when delivered peripherally in male rats. *Physiology & Behavior* 2022;257(113998

Agents: Lipopolysaccharide **Vehicle:** Saline; **Route:** SC; CSF/CNS (lateral ventricle); **Species:** Rat; **Strain:** Long-Evans; **Pump:** 2ML; 2004; **Duration:** 14 days;

ALZET Comments: Dose: 0.1, 0.5, 1, 2 mg/kg/day; 5 mg/kg/wk; 10.5 ug/week; animal info (male 2 months); comparison of IP injection vs SC and ICV mp; ALZET brain infusion kit (2) used; Brain coordinates: AP: -1.0, ML: +1.8, DV: -4.0 from bregma; dental cement used; behavioral testing, PR training

Q11540: S. Park, *et al.* Ferulic acid and vinpocetine intake improves memory function by enhancing insulin sensitivity and reducing neuroinflammation and oxidative stress in type 2 diabetic animals with induced Alzheimer's disease. *Journal of Functional Foods* 2022;95

Agents: Amyloid beta (25-35); Amyloid beta (35-25) **Vehicle:** Saline, sterile; **Route:** CSF/CNS (hippocampus); **Species:** Rat; **Strain:** Sprague Dawley; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose: (3.6 nmol/day); Controls received mp w/ vehicle; animal info: male, 207 ± 17 g; behavioral testing: Y maze, water maze tests, and locomotive activity; Brain coordinates (4.5 mm anterior to bregma, 1.6 mm ventral to the dura, and two directions of ± 4.0 mm from the interaural line); neurodegenerative (Alzheimer's disease); diabetes;

Q10637: N. Orti-Casan, *et al.* A TNF Receptor 2 Agonist Ameliorates Neuropathology and Improves Cognition in an Alzheimer's Disease Mouse Model. *Proceedings of the National Academy of Sciences* 2022;119(37):e2201137119

Agents: NewStar2 **Vehicle:** PBS; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6 (background); **Pump:** 2006; **Duration:** 6 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info; Male mice 6 mo of age behavioral testing: EPM; Y-Maze spontaneous alternation; MWM; stability of compound verified by cytotoxicity assay; Brain coordinates (anteroposterior, 0.05 mm; lateral, 0.1 mm; dorsoventral, 0.25 mm); dental cement used; neurodegenerative (Alzheimer's disease);

R0398: M. Klonarakis, *et al.* The Three Sisters of Fate: Genetics, Pathophysiology and Outcomes of Animal Models of Neurodegenerative Diseases. *Neuroscience and Biobehavioral Reviews* 2022;135(104541

Agents: Sodium azide **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** Not Stated; **Duration:** 4 weeks;

ALZET Comments: animal info (Male); neurodegenerative (Alzheimer's; Parkinson's; Huntington's disease);

Q10551: Y. Inoue, *et al.* alpha-Enolase reduces cerebrovascular Abeta deposits by protecting Abeta amyloid formation. *Cellular and Molecular Life Sciences* 2022;79(8):462

Agents: alpha-Enolase **Vehicle:** Tris-HCL; MgSO4; Glycerol; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** APP23; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose: (20 uM); Controls received mp w/ vehicle; animal info: male; behavioral testing: Y-maze; testα-Enolase aka (ENO1); ALZET brain infusion kit (3) used; Brain coordinates (coordinates of injection sites relative to bregma: anteroposterior: - 2.5 mm, lateral (right): + 2.0 mm, dorsoventral: - 2.8 mm); neurodegenerative (Cerebral amyloid angiopathy);

Q10537: J. O. Hendrickx, *et al.* Short-Term Pharmacological Induction of Arterial Stiffness and Hypertension with Angiotensin II Does Not Affect Learning and Memory and Cerebral Amyloid Load in Two Murine Models of Alzheimer's Disease. *International Journal of Molecular Sciences* 2022;23(5):

Agents: Angiotensin II **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Strain:** hAPP23+/-, APPswe/PSEN1dE9 C57BL6; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (1 µg/kg/min); Controls received mp w/ vehicle; animal info (5 months old mice); wound clips used; behavioral testing (Morris water maze); Blood pressure measured via non-invasive CODA tail-cuff blood pressure system; peptides; neurodegenerative (Alzheimer's disease); cardiovascular (hypertension)



Q10385: Y. Hasuike, *et al.* CAG repeat-binding small molecule improves motor coordination impairment in a mouse model of Dentatorubral-pallidoluysian atrophy. *Neurobiology of Disease* 2022;163(105604

Agents: Naphthyridine-azaquinolone **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** 2004; **Duration:** 16 weeks;

ALZET Comments: Dose (2 mM); Controls received mp w/ vehicle; animal info (6 weeks old); behavioral testing (Tested motor function with rotarod device; Beam-walking test); pumps replaced every 4 weeks; long-term study; ALZET brain infusion kit used; Brain coordinates (0.4 mm posterior; 1.0 mm right lateral; 2.5 mm ventral); neurodegenerative (Dentatorubral-pallidoluysian atrophy); Therapeutic indication (DRPLA);

Q10934: L. K. Hamilton, *et al.* Stearoyl-CoA Desaturase inhibition reverses immune, synaptic and cognitive impairments in an Alzheimer's disease mouse model. *Nature Communications* 2022;13(1):2061

Agents: ab142089 **Vehicle:** DMSO; CSF, artificial; **Route:** CSF/CNS (lateral ventricles); **Species:** Mice; **Strain:** 3xTg/ WT; **Pump:** 1004; **Duration:** 1 month;

ALZET Comments: Dose: (80 uM); 0.8% DMSO vehicle used; Controls received mp w/ vehicle; animal info: 9-month-old female mice; behavioral testing; Open field test; Elevated plus maze; Light dark box; Morris water maze; SCD inhibitor; Brain coordinates (0.0 mm antero-posterior and 0.9 mm lateral to Bregma); pumps primed 48h; neurodegenerative (Alzheimer's disease, learning, memory);

Q10512: R. Das, *et al.* Medroxyprogesterone acetate positively modulates specific GABA(A)-receptor subtypes - affecting memory and cognition. *Psychoneuroendocrinology* 2022;141(105754

Agents: Medroxyprogesterone acetate **Vehicle:** DMSO; **Route:** SC; **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** Not Stated; **Duration:** 66 days;

ALZET Comments: Dose (6.67 ± 1.08 ng/ml = 21 nM); 0.1%DMSO used; animal info (Male (n = 19, weight < 130 g); Medroxyprogesterone acetate aka (MPA); replacement therapy (estradiol);

Q10445: G. E. Barbone, *et al.* X-ray multiscale 3D neuroimaging to quantify cellular aging and neurodegeneration postmortem in a model of Alzheimer's disease. *European Journal of Nuclear Medicine and Molecular Imaging* 2022;49(13):4338-4357

Agents: LY37926 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** B6/129 wild-type; 3xTgAD; **Pump:** Not Stated; **Duration:** 28 days;

ALZET Comments: Dose: (1 mg/kg/day). Controls received mp w/ vehicle; animal info: 11-month-old male mice; LY379268 is selective agonist of group II metabotropic glutamate receptors; neurodegenerative (Alzheimer's disease);

Q10489: B. Anand, *et al.* Significance of native PLGA nanoparticles in the treatment of Alzheimer's disease pathology. *Bioactive Materials* 2022;17(506-525

Agents: PLGA **Vehicle:** CSF; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** 5xFAD, wild-type; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose: (25 uM)); animal info: Three-month old mice along with age-matched control mice; behavioral testing: Novel-object recognition test; PLGA aka Acidic poly(D,L-lactide-co-glycolide) nanoparticles; ALZET Brain Infusion Kit used; Brain coordinates (right ventricle (-0.8 mm mid/lateral, -0.1 mm antero/posterior and -3.0 mm dorso/ventral from Bregma); neurodegenerative (Alzheimer's);

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);

Q10870: X. Zhang, *et al.* Ablating Adult Neural Stem Cells Improves Synaptic and Cognitive Functions in Alzheimer Models. *Stem Cell Reports* 2021;16(1):89-105

Agents: Ganciclovir **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** APP/PS1; hAPP-J20; **Pump:** 2004; **Duration:** 7 days;

ALZET Comments: Dose: (20 mg/kg/day); 0.9% sterile saline vehicle used; behavioral testing (MWM and Y-maze tests);



Q10859: C. M. Yuede, *et al.* Pimavanserin, a 5HT(2A) Receptor Inverse Agonist, Rapidly Suppresses Abeta Production and Related Pathology in a Mouse Model of Alzheimer's Disease. *Journal of Neurochemistry* 2021;156(5):658-673

Agents: Pimavanserin **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Strain:** APP/PS1; **Pump:** 2006; **Duration:** Not Stated;

ALZET Comments: Dose: (3 mg/kg/day); Controls received mp w/ vehicle; animal info: 6 months of age, hemizygous male and female mice; pumps replaced every 2.5–5 weeks, alternating location on either side of back; half-life (p.660); Pimavanserin is a 5HT2A receptor inverse agonist; neurodegenerative (Alzheimer's disease);

Q10834: Z. Xu, *et al.* A Combination of Lycopene and Human Amniotic Epithelial Cells Can Ameliorate Cognitive Deficits and Suppress Neuroinflammatory Signaling by Choroid Plexus in Alzheimer's Disease Rat. *Journal of Nutritional Biochemistry* 2021;88(108558)

Agents: AB 1-42 **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Rat; **Strain:** Wistar; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose: 3 nmol/3ml; Controls received mp w/ vehicle; animal info: adult male rats (SPF class, weighing 250–300 g); post op. care: daily application of Neosporin; behavioral testing: Morris water maze; Amyloid beta 1-42 aka (A β 1-42); Brain coordinates (anteroposterior 0.8 mm from bregma, mediolateral 1.5 mm, dorsoventral 3.6 mm); dental cement used; neurodegenerative (Alzheimer's disease);

Q9557: Y. Z. Wu, *et al.* Cordyceps cicadae NTU 868 Mycelium with The Addition of Bioavailable Forms of Magnesium from Deep Ocean Water Prevents the A β 40 and Streptozotocin-Induced Memory Deficit via Suppressing Alzheimer's Disease Risk Factors and Increasing Magnesium Uptake of Brain. *Fermentation* 2021;7(1):

Agents: Amyloid protein, beta (40); Streptozotocin **Vehicle:** Acetonitrile; Trifluoroacetic acid; **Route:** CSF/CNS (left ventricle);

Species: Rat; **Strain:** Sprague Dawley; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose (24.299 μ g); 35% Acetonitrile, 0.1% Trifluoroacetic Acid used; Controls received mp w/ vehicle; animal info (Male 6-8 weeks old); behavioral testing (Morris Water Maze); Amyloid protein, beta (40) aka AB40; Brain coordinates (relative to the bregma; 0.8 mm posterior, 1.4 mm latera); dental cement used; neurodegenerative (Alzheimer's);

Q10791: T. Watermeyer, *et al.* Therapeutic Implications of Hypothalamic-Pituitaryadrenal-Axis Modulation in Alzheimer's Disease: A Narrative Review of Pharmacological and Lifestyle Interventions. *Frontiers in Neuroendocrinology* 2021;60(100877)

Agents: UE2316 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose: (5 mg/kg/d); Controls received mp w/ vehicle; behavioral testing: Y maze test; open field test; spontaneous alternation; morris water maze; neurodegenerative (Alzheimer's disease);

Q10773: R. Wang, *et al.* Lycopene Can Modulate The LRP1 and RAGE Transporters Expression at the Choroid Plexus in Alzheimer's Disease Rat. *Journal of Functional Foods* 2021;85(**Agents:** Amyloid beta (1-42) **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Strain:** Wistar; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose: (10 mM); animal info: adult male rats (SPF class, 8 weeks of age, weighing 250–300 g; Brain coordinates (0.8 mm posterior to bregma, 1.5 mm lateral to sagittal suture and 3.6 mm beneath the surface of the brain); dental cement used; 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 μ M); 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."

Q11333: H. Tanaka, *et al.* HMGB1 signaling phosphorylates Ku70 and impairs DNA damage repair in Alzheimer's disease pathology. *Communications Biology* 2021;4(1):1175

Agents: Go6976 **Vehicle:** Not Stated; **Route:** CSF/CNS (intrathecal); **Species:** Mice; **Strain:** 5xFAD; C57BL/6SJL background; **Pump:** 2006; **Duration:** 4.5 months;

ALZET Comments: Dose: 6.6 μ M; behavioral testing (Y-maze Test); PKC inhibitor; neurodegenerative (Alzheimer's Disease);



Q10321: S. Schemmert, *et al.* In Vitro and In Vivo Efficacies of the Linear and the Cyclic Version of an All-d-Enantiomeric Peptide Developed for the Treatment of Alzheimer's Disease. *International Journal of Molecular Sciences* 2021;22(12):

Agents: RD2D3; cRD2D3 **Vehicle:** PBS; **Route:** IP; **Species:** Mice; **Strain:** Tg-SwDI; **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: Dose: (8 mg/kg/d); Controls received mp w/ vehicle; animal info: Eleven months old, post op. care: Medetomidine; Ketamine; behavioral testing: nesting behavior, marble burying, open field test and MWM; peptides; neurodegenerative (Alzheimer's Disease)

Q9406: S. Park, *et al.* Intermittent fasting with a high-protein diet mitigated osteoarthritis symptoms by increasing lean body mass and reducing inflammation in osteoarthritic rats with Alzheimer's disease-like dementia. *British Journal of Nutrition* 2021;1-13

Agents: Amyloid protein, beta (25-35) **Vehicle:** Saline, sterile; **Route:** CSF/CNS (hippocampus); **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (3 to 6 nmol/d); animal info (female rats, 10 weeks, 235 g); Brain coordinates (lateral, -3.3 mm from the bregma; posterior, 2.0 mm from the midline; ventral, -2.5 mm from the dura); neurodegenerative (Alzheimer's disease);

Q10619: T. Nagase, *et al.* Skeletal Muscle Atrophy-Induced Hemopexin Accelerates Onset of Cognitive Impairment in Alzheimer's Disease. *Journal of Cachexia, Sarcopenia and Muscle* 2021;12(6):2199-2210

Agents: Hemopexin, recombinant **Vehicle:** CSF, artificial; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** Wildtype; 5XFAD; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info: 6–7 weeks old, male and female; behavioral testing: Object location test; Brain coordinates (A/P: 0.2 mm, M/L: +1.0 mm, depth: 3.0 mm); neurodegenerative (Alzheimer's disease);

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);

R0399: S. Mitra, *et al.* A Review of Techniques for Biodelivery of Nerve Growth Factor (NGF) to the Brain in Relation to Alzheimer's Disease. *Advances in Experimental Medicine and Biology* 2021;1331(171-191

Agents: Nerve growth factor; Brain-derived neurotropic factor **Vehicle:** Not Stated; **Route:** CSF/CNS (intracerebral); **Species:** Rat; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Nerve growth factor aka (NGF); dependence; "Different invasive strategies of NGF delivery to the brain have been reported to show that indeed NGF could be a promising therapeutic in AD, either intracerebroventricular administration" (pg.194)

Q9335: J. K. Y. Lau, *et al.* Melanocortin receptor activation alleviates amyloid pathology and glial reactivity in an Alzheimer's disease transgenic mouse model. *Scientific Reports* 2021;11(1):4359

Agents: Melanotan II **Vehicle:** dPBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** APP/PS1; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (2.4 nmol/day); Controls received mp w/ vehicle; animal info: 6–7-month-old; neurodegenerative (Alzheimer's Disease);

Q10577: C. Kondak, *et al.* Hydromethylthionine Enhancement of Central Cholinergic Signaling is Blocked by Rivastigmine and Memantine. *Journal of Neurochemistry* 2021;160(2):172-184

Agents: Rivastigmine; Memantine **Vehicle:** Aqua ad injectabilia; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (Rivastigmine 0.5 mg/kg/d; Memantine 1 mg/kg/d); dose-response (see p. 174); animal info (60 of each species so 120 mice total; Female; 6-8 months old; NMRI); enzyme inhibitor (Rivastigmine); wound clips used; neurodegenerative (Alzheimer's Disease);



Q12220: O. Khannous-Lleiffe, *et al.* A Mouse Model Suggests That Heart Failure and Its Common Comorbidity Sleep Fragmentation Have No Synergistic Impacts on the Gut Microbiome. *Microorganisms* 2021;9(3):

Agents: Isoproterenol **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 1004; **Duration:** 28 days; **ALZET Comments:** Dose (30 mg/kg/d); 0.9% used; controls received mp w/ vehicle; animal info (male; 10 weeks old; isoflurane anesthesia); post op. care (Buprenorphine 0.3 mg/kg, i.p.); cardiovascular; heart failure model;

Q8510: M. Gonzalez-Prieto, *et al.* Microglial CX3CR1 production increases in Alzheimer's disease and is regulated by noradrenaline. *Glia* 2021;69(1):73-90

Agents: Reboxetine **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** WT; heterozygous 5xFAD; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose (10 mg/kg/day); Controls received mp w/ vehicle; animal info (7 month old male); half-life (p. 2; 12.5 hr); neurodegenerative (Alzheimer's);

Q12163: G. Fonar, *et al.* Modified Snake alpha-Neurotoxin Averts beta-Amyloid Binding to alpha7 Nicotinic Acetylcholine Receptor and Reverses Cognitive Deficits in Alzheimer's Disease Mice. *Molecular Neurobiology* 2021;58(5):2322-2341

Agents: Cobratoxin, modified snake alpha **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** C57BL/6, 3xTg; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (0.05 mM); controls received mp w/ aCSF; animal info (female 7-month-old); ALZET brain infusion kit used; brain coordinates (−0.2 mm caudal, 0.9 mm lateral to bregma, 2.5 mm dorsoventral); cyanoacrylate adhesive; Loctite 454; behavioral testing (open field maze; rotarod); neurodegenerative (Alzheimer's); "Since α-neurotoxins do not pass the BBB, we bypassed the barrier and delivered the substance directly into the ventricles using osmotic minipumps. This methodology of chronic slow release ensured a constant concentration of the compound in the brain for about a month." pg. 2338; therapeutic indication (Alzheimer's);

Q10152: J. Di, *et al.* The molecular tweezer CLR01 improves behavioral deficits and reduces tau pathology in P301S-tau transgenic mice. *Alzheimer's Research & Therapy* 2021;13(1):6

Agents: CLR01 **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Strain:** P301S-tau transgenic mice; Homozygous P301S-tau and wild-type; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose: (0.3 or 1.0 mg/kg per day); 0.9% sterile saline vehicle used; Controls received mp w/ vehicle; animal info: littermates; behavioral testing: Open field test; Grip-strength test; CLR01, is a broad-spectrum inhibitor of amyloid proteins' toxicity; neurodegenerative (Alzheimer's disease); CLR01 is a promising drug candidate for the prevention and possibly treatment of (AD) and other tauopathies. CLR01 reduces early behavioral deficits in the P301S-tau model, suggesting that similar therapeutic effects could be translated to human therapy. (see pg. 17)

Q12097: Y. Decker, *et al.* Decreased pH in the aging brain and Alzheimer's disease. *Neurobiol Aging* 2021;101(40-49

Agents: CSF, artificial **Vehicle:** Not Stated; **Route:** CSF/CNS (right parenchyma); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: ALZET brain infusion kit used; brain coordinates (1.3 mm right lateral and 1.8 mm posterior to bregma, 2.0 mm deep); neurodegenerative (Alzheimer's disease);

Q9893: I. J. Yeo, *et al.* Antifungal drug miconazole ameliorated memory deficits in a mouse model of LPS-induced memory loss through targeting iNOS. *Cell Death & Disease* 2020;11(8):623

Agents: Amyloid beta 1-42 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL6/N; **Pump:** 1002; **Duration:** 2 weeks;

ALZET Comments: Dose (300 pmol); 0.9% Saline used; Controls received mp w/ vehicle; animal info (8-10 weeks old, C57BL/N); ALZET brain infusion kit 1 used; Brain coordinates (−1.0 mm anterior/posterior, +0.5 mm medial/lateral, and −2.5 mm dorsal/ventral); neurodegenerative (Alzheimer's Disease);



Q9897: L. Yang, *et al.* The Regulatory Functionality of Exosomes Derived from hUMSCs in 3D Culture for Alzheimer's Disease Therapy. *Small* 2020;16(3):e1906273

Agents: Exosome, 3D-cultured; Exosome, 2D-cultured; **Vehicle:** Saline; **Route:** CSF/CNS (right hippocampus); **Species:** Mice; **Strain:** APP/PS1; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Dose (2 mg protein per mL); Controls received mp w/ vehicle; animal info (nine-month-old male); behavioral testing (Morris water maze); 3D-cultured Exosome aka 3D-Exo, 2D-cultured Exosome aka 2D-Exo; ALZET brain infusion kit 3 used; Brain coordinates (anteroposterior, -2.0 mm; mediolateral, -1.0 mm; dorsoventral, -2.0 mm); neurodegenerative (Alzheimer's Disease);

Q9910: T. Yan, *et al.* FAM222A encodes a protein which accumulates in plaques in Alzheimer's disease. *Nature Communications* 2020;11(1):411

Agents: Amyloid protein, beta **Vehicle:** CSF, Artificial; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** 5xFAD transgenic; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Animal info (mice); behavioral testing (Barnes maze test; Y maze test); Amyloid protein, beta aka AB; ALZET brain infusion kit 3 used; Brain coordinates (relative to bregma: anteroposterior -0.5 mm, medial lateral 0.75 mm); cyanoacrylate adhesive; neurodegenerative (Alzheimer's disease);

Q11810: Y. Wu, *et al.* BHBA treatment improves cognitive function by targeting pleiotropic mechanisms in transgenic mouse model of Alzheimer's disease. *The FASEB Journal* 2020;34(1):1412-1429

Agents: Hydroxybutyrate, beta- **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** 5XFAD; **Pump:** Not Stated; **Duration:** 21 days;

ALZET Comments: Dose (1.5 mmol/kg/d); animal info (3.5 month old female); behavioral testing (Morris water maze, nesting construction, passive avoidance); neurodegenerative (Alzheimer's);

Q9506: S. T. Tsai, *et al.* Rostral intralaminar thalamic deep brain stimulation ameliorates memory deficits and dendritic regression in beta-amyloid-infused rats. *Brain Structure and Function* 2020;225(2):751-761

Agents: Amyloid protein, beta (1-40); Amyloid protein, beta (1-42) **Vehicle:** Saline, Isotonic; **Route:** CSF/CNS (left ventricle); **Species:** Rat; **Strain:** Wistar; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Dose (300 pmol/day); animal info (Male Wistar rats (250–350 g body weight)); behavioral testing (Morris water maze test); Amyloid protein, beta (1-40) aka Aβ1–40; Amyloid protein, beta (1-42) aka Aβ1–42; Brain coordinates (AP: -0.3 mm; ML 2.5 mm; DV: -4.0 mm); dental cement used; neurodegenerative (Alzheimer's disease);

Q9494: H. Tanaka, *et al.* YAP-dependent necrosis occurs in early stages of Alzheimer's disease and regulates mouse model pathology. *Nature Communications* 2020;11(1):507

Agents: Sphingosine-1-phosphate **Vehicle:** CSF, artificial; **Route:** CSF/CNS (subarachnoid space); **Species:** Mice; **Strain:** Not Stated; **Pump:** 2006; **Duration:** 28 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (4 week old mice); behavioral testing (Y-shape maze test); Sphingosine-1-phosphate aka S1P; neurodegenerative (Alzheimer's disease);

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

Agents: Fibroblast Growth Factor 21 **Vehicle:** Not Stated; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (0.4 ug/day); Controls received mp w/ vehicle; animal info (6 month old); Fibroblast Growth Factor 21 aka FGF21; Brain coordinates (0.1 mm anteroposterior to bregma; 0.9 mm lateral from midline; 2.5 mm below the dura); bilateral cannula used; neurodegenerative (Alzheimer's Disease);

Q9486: D. Spieler, *et al.* Donepezil, a cholinesterase inhibitor used in Alzheimer's disease therapy, is actively exported out of the brain by abcb1ab p-glycoproteins in mice. *Journal of Psychiatric Research* 2020;124(29-33

Agents: Donepezil HCl **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice; **Strain:** abcb1ab(-/-); FVB/N wildtype; **Pump:** Not Stated; **Duration:** 11 days;

ALZET Comments: Dose (0.2 mg donepezil hydrochloride/kg bodyweight/day); 0.9% NaCl used; animal info (Male) mice and mice); Resultant plasma level (0.47 ng/ml donepezil); neurodegenerative (Alzheimer's disease);



Q9441: W. Sakuma, *et al.* Antidepressant effect of BE360, a new selective estrogen receptor modulator, activated via CREB/BDNF, Bcl-2 signaling pathways in ovariectomized mice. *Behavioural Brain Research* 2020;393(112764)

Agents: Estradiol, 17B-; Tamoxifen; Raloxifene; BE360 **Vehicle:** PEG 300; **Route:** SC; **Species:** Mice; **Strain:** ddY; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Dose (0.1 µg/day 17B-Estradiol; 1000 µg/day Tamoxifen; 1000 µg/day Raloxifene; 30 and 100 µg/day BE360); animal info (Female mice (8 weeks old)); behavioral testing (Forced swimming test); 17B-Estradiol aka E2, Tamoxifen aka TAM, Raloxifene aka RAL; replacement therapy (estradiol);

Q10314: N. H. M. Rosli, *et al.* Serum Metabolomics Profiling of Commercially Mixed Functional Foods-Effects in Beta-Amyloid Induced Rats Measured Using (1)H NMR Spectroscopy. *Nutrients* 2020;12(12):

Agents: AB-42 **Vehicle:** PBS; **Route:** SC; **Species:** Rat; **Strain:** albino Wistar; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose: (0.040 µg/200 µL); Controls received mp w/ vehicle; animal info: Adult male of three–four months of age; post op. care: Betadine antiseptic cream given topically to prevent infection to the wound; behavioral testing: Morris Water Maze; Open Field Test; Y-Maze Test; amyloid-beta 1-42 aka (AB-42); Brain coordinates (0.9 mm posterior to bregma, 1.4 mm from the midline, 3.5 mm ventral to dura); neurodegenerative (Alzheimer's disease);

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

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

ALZET Comments: Dose (10 µM); Controls received mp w/ vehicle; animal info (NR1 flox); D-4- [(2E)-3-phosphono-2-propenyl]-2-piperazinecarboxylic acid aka NMDAR antagonist; Brain coordinates (-0.22 mm posterior, 1 mm lateral from bregma to target the lateral cerebral ventricle); bilateral cannula used; dental cement used; neurodegenerative (Synaptic scaling and sliding threshold); "these data support the utility of long-term CNO delivery in indwelling osmotic minipumps to activate DREADDs in vivo (see also [83]). Importantly, percentage theta power was further reduced in EC-Tau/hAPP mice following chronic hM4Di DREADDs activation."

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

Agents: Clozapine-N-Oxide **Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Strain:** EC-Tau/hAPP; **Pump:** 2006; **Duration:** 6 weeks;

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

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

Agents: p75 NTR metalloprotease inhibitor **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** APP/PS1; **Pump:** Not Stated; **Duration:** 7 days;

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

Q8361: E. E. Parks, *et al.* Interleukin 6 reduces allopregnanolone synthesis in the brain and contributes to age-related cognitive decline in mice. *J Lipid Res* 2020;61(10):1308-1319

Agents: Interleukin-6 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL/6N; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Dose (100 ng/day); Controls received mp w/ vehicle; animal info (Male); neurodegenerative (Alzheimer's Disease);

Q8494: L. Park, *et al.* tPA Deficiency Underlies Neurovascular Coupling Dysfunction by Amyloid-beta. *Journal of Neuroscience* 2020;40(42):8160-8173

Agents: PAI-039 **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Strain:** Not Stated; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: Dose (42 ng/kg/min); Controls received mp w/ vehicle; animal info (10-11 months old); behavioral testing (Maze Test, Novel Object Recognition Test); enzyme inhibitor (PAI-1 inhibitor); Brain coordinates (-0.22 mm lateral, 0.8 mm, dorsal 2 mm); neurodegenerative (Alzheimer's Disease);



Q8927: J. C. Palmer, *et al.* Zibotentan, an Endothelin A Receptor Antagonist, Prevents Amyloid-beta-Induced Hypertension and Maintains Cerebral Perfusion. *Journal of Alzheimer's Disease* 2020;73(3):1185-1199

Agents: Amyloid protein, beta (1-40) **Vehicle:** Saline; **Route:** CSF/CNS (parenchyma); **Species:** Rat; **Strain:** Wistar; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Dose 6 ug/d; Controls received mp w/ vehicle; animal info (Male rats, aged 12–14 weeks, mean initial weight of 343 g); Blood pressure measured via telemetry system; 102 mmHg - 105 mmHg; Amyloid protein, beta (1-40) aka AB1-40; ALZET brain infusion kit 1 used; Brain coordinates (AP –1.0 mm, L –3.0 mm, D 5.0 mm); dental cement used; neurodegenerative (Alzheimer's disease);

Q8923: T. C. Ooi, *et al.* Neuroprotection of Tropical Fruit Juice Mixture via the Reduction of iNOS Expression and CRH Level in beta-Amyloid-Induced Rats Model of Alzheimer's Disease. *Evidence-Based Complementary and Alternative Medicine* 2020;2020(5126457)

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

ALZET Comments: Dose (0.5µl/hour); Controls received mp w/ vehicle; animal info (male rats weighing 200 to 250 g); behavioral testing (Open Field Test); Amyloid beta 1-42 aka AB1-42; Brain coordinates (anteroposterior +1.2 mm from Bregma, mediolateral +2.0 mm, dorsoventral +4.0 mm); cyanoacrylate adhesive; neurodegenerative (Alzheimer's Disease);

Q8915: A. Nyul-Toth, *et al.* Increases in hypertension-induced cerebral microhemorrhages exacerbate gait dysfunction in a mouse model of Alzheimer's disease. *Geroscience* 2020;42(6):1685-1698

Agents: Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** TG2576; **Pump:** 2006; **Duration:** 10 days;

ALZET Comments: Dose (1 ug/min/kg); Controls received mp w/ vehicle; animal info (12-month-old male mice); Blood pressure measured via tail-cuff method; 155 mmHg - 170 mmHg; neurodegenerative (Alzheimer's disease)

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

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

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

Q8659: P. J. Meakin, *et al.* Elevated circulating amyloid concentrations in obesity and diabetes promote vascular dysfunction. *Journal of Clinical Investigation* 2020;130(8):4104-4117

Agents: M-3 **Vehicle:** DMSO; PBS; **Route:** SC; **Species:** Mice; **Strain:** WT; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose (10 mg/kg/day); Controls received mp w/ vehicle; animal info (12-week-old mice); Blood pressure measured via CODA noninvasive blood pressure system; 97.2 mmHg - 82.5 mmHg; M-3 aka BACE1 inhibitor; cardiovascular;

Q10244: X. Lu, *et al.* Hypertension accelerates cerebral tissue PO2 disruption in Alzheimer's disease. *Neuroscience Letters* 2020;715(134626)

Agents: Angiotensin II **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** hypertensive; **Pump:** 2006; **Duration:** 3 months;

ALZET Comments: Dose: (1000 ng/kg/min); animal info: 3 months old; post op. care: To alleviate pain, buprenorphine (at 0.1 mg/kg) was administered subcutaneously 30 min before the surgery; neurodegenerative (Alzheimer disease); cardiovascular; Hypertension

Q8628: A. Levit, *et al.* Hypertension and Pathogenic hAPP Independently Induce White Matter Astrocytosis and Cognitive Impairment in the Rat. *Frontiers in Aging Neuroscience* 2020;12(82)

Agents: Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Strain:** Not Stated; **Pump:** 2004; **Duration:** 8 weeks;

ALZET Comments: Dose (10,000 ng/kg/h); Controls received mp w/ vehicle; animal info (male Rats, 7.25 months old, 367 g); behavioral testing (Morris Water Maze, Open Field Test); pumps replaced every 4 weeks; Blood pressure measured via tail cuff method; 120 mmHg - 170 mmHg; cardiovascular;



Q8624: N. Lax, *et al.* Systemic microbial TLR2 agonists induce neurodegeneration in Alzheimer's disease mice. *Journal of Neuroinflammation* 2020;17(1):55

Agents: Zymosan; CU-CPT22 **Vehicle:** Not Stated; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** 5xFAD;

Pump: 1007D; 1004; 1002; **Duration:** 28 days; 1 week; 2 weeks;

ALZET Comments: Dose (25 ug zymosan; 10 ug/day CU-CPT22); animal info: male and female; CU-CPT22 aka Toll-like receptor 2 antagonist; Brain coordinates (A = 0, L = 1, H = 2.5); neurodegenerative (Alzheimer's disease);

Q8611: M. Krishnan, *et al.* beta-hydroxybutyrate Impedes the Progression of Alzheimer's Disease and Atherosclerosis in ApoE-Deficient Mice. *Nutrients* 2020;12(2):

Agents: Butyrate, B-hydroxy- **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Strain:** ApoE-/-; C57BL/6J; **Pump:** 1004; **Duration:** 8 w;

ALZET Comments: Dose (1.5 mmol/kg/day); Controls received mp w/ vehicle; animal info (Six-week-old male mice); pumps replaced every 4 weeks; half-life (p.10); Beta-hydroxybutyrate aka (B-OHB); neurodegenerative (Alzheimer's disease)

R0446: A. K. Kraeuter, *et al.* Ketogenic therapy in neurodegenerative and psychiatric disorders: From mice to men. *Progress in Neuropsychopharmacology & Biological Psychiatry* 2020;101(109913

Agents: D-BHB **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice; **Strain:** C57Bl/6; 3NP; R6/2J; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Review, compilation of Huntington's disease research

Q8575: D. S. Kim, *et al.* Tetragonia tetragonioides Protected against Memory Dysfunction by Elevating Hippocampal Amyloid-beta Deposition through Potentiating Insulin Signaling and Altering Gut Microbiome Composition. *Int J Mol Sci* 2020;21(8):

Agents: Amyloid protein, beta (25-35); **Vehicle:** Saline; **Route:** CSF/CNS (hippocampus); **Species:** Rat; **Strain:** Sprague Dawley; **Pump:** Not stated; **Duration:** 14 days;

ALZET Comments: Dose (3.6 nmol/day); Controls received mp w/ vehicle; animal info (male Sprague Dawley rats, weighing 209 ± 13 g); behavioral testing (Y maze; Passive Avoidance Test); Brain coordinates (lateral, -3.3 mm from the bregma; posterior, 2.0 mm from the midline; ventral, -2.5 mm from dura); neurodegenerative (Alzheimer's disease);

Q8599: L. Katsouri, *et al.* Ablation of reactive astrocytes exacerbates disease pathology in a model of Alzheimer's disease. *Glia* 2020;68(5):1017-1030

Agents: Ganciclovir **Vehicle:** Saline; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** APP23/GFAP-TK double transgenic; **Pump:** Not stated; **Duration:** 2 weeks;

ALZET Comments: Dose (11 µg/ul/hr); Controls received mp w/ vehicle; animal info (mice, 9 months old); behavioral testing (Object location task; Y maze); Ganciclovir aka GCV; neurodegenerative (Alzheimer's disease);

Q9277: A. K. E. Hornsby, *et al.* Unacylated-Ghrelin Impairs Hippocampal Neurogenesis and Memory in Mice and Is Altered in Parkinson's Dementia in Humans. *Cell Report Medicine* 2020;1(7):100120

Agents: Ghrelin, unacylated **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Strain:** GOAT -/-; C57BL/6 (WT); Ghrelin -/-;

Pump: 1007D; **Duration:** 7 days;

ALZET Comments: Dose (48 ug/day); Controls received mp w/ vehicle; animal info (six-month old); unacylated Ghrelin aka UAG; neurodegenerative (Parkinson's Dementia);

Q8528: E. D. Hamlett, *et al.* RvE1 treatment prevents memory loss and neuroinflammation in the Ts65Dn mouse model of Down syndrome. *Glia* 2020;68(7):1347-1360

Agents: SPM resolvin E1 **Vehicle:** EtOH; Saline; **Route:** SC; **Species:** Mice; **Strain:** Ts65Dn; **Pump:** Not stated; **Duration:** 35 d;

ALZET Comments: Dose (10 ng/g body weight/day); 5% EtOH, 95% saline used; Controls received mp w/ vehicle; animal info (Male Ts65Dn mice); SPM resolvin E1 aka RvE1; neurodegenerative (Alzheimer's disease);

Q9255: A. C. Guyot, *et al.* A Small Compound Targeting Prohibitin with Potential Interest for Cognitive Deficit Rescue in Aging mice and Tau Pathology Treatment. *Scientific Reports* 2020;10(1):1143

Agents: PDD005 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** C57Bl/6J; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Dose (8 mg/kg/day); Controls received mp w/ vehicle; animal info (Male 2- to 3-month-old and 12-month-old); behavioral testing (Y-maze test); PDD005 aka purine derivative drug; neurodegenerative



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);

Q8467: E. Fielder, *et al.* Anti-inflammatory treatment rescues memory deficits during aging in *nfk1(-/-)* mice. *Aging Cell* 2020;19(10):e13188

Agents: Ibuprofen **Vehicle:** DMSO; PEG; **Route:** SC; **Species:** Mice; **Strain:** *nfk1(-/-)*; C57BL/6; **Pump:** 2004; **Duration:** 2 mo; **ALZET Comments:** Dose (50 mg/kg/day); Controls received mp w/ vehicle; animal info (male C57BL/6 mice, 6 months old); pumps replaced every 28 days; dependence;

Q8463: A. K. Evans, *et al.* Beta-adrenergic receptor antagonism is proinflammatory and exacerbates neuroinflammation in a mouse model of Alzheimer's Disease. *Neurobiology of Disease* 2020;146(105089

Agents: Metoprolol **Vehicle:** Not stated; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6J; *Adrb1-flox+/+/Cx3cr1-CreER+/ -*; *Adrb2-flox+/+/Cx3cr1-CreER+/ -*; **Pump:** 1004; **Duration:** 3 months; 2 months;

ALZET Comments: Dose (5 mg/kg/day); Controls received mp w/ vehicle; animal info (male mice, 3.5 months old; female mice, 6 months old); behavioral testing (Morris Water Maze; Fear Conditioning); pumps replaced every 4 weeks; long-term study; neurodegenerative (Alzheimer's);

Q8456: F. El Gaamouch, *et al.* VGF-derived peptide TLQP-21 modulates microglial function through C3aR1 signaling pathways and reduces neuropathology in 5xFAD mice. *Molecular Neurodegeneration* 2020;15(1):4

Agents: TLQP-21 **Vehicle:** CSF, artificial; **Route:** CSF/CNS (intracerebroventricular); **Species:** Mice; **Strain:** Wild-type C57BL/6 J; **Pump:** Not Stated; **Duration:** 28 days;

ALZET Comments: Dose (15 µg/day); Controls received mp w/ vehicle; animal info (mice, 3 months); Brain coordinates (P = - 0.1, ML = ±1.0 and DV = - 3.0 from bregma (mm)); neurodegenerative (Alzheimer's disease);

Q8450: N. Drost, *et al.* The Amyloid-beta rich CNS environment alters myeloid cell functionality independent of their origin. *Scientific Reports* 2020;10(1):7152

Agents: Ganciclovir **Vehicle:** CSF, Artificial; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** APPPS1; CX3CR1-GFP; CD11b-HSVTK+/-; **Pump:** 2001; 2004; **Duration:** 6 weeks;

ALZET Comments: Dose (2.5 mg); Ganciclovir aka Cymeven; pump replaced after 1 week; neurodegenerative

Q8384: S. K. S. Bengtsson, *et al.* GABA-A receptor modulating steroids in acute and chronic stress; relevance for cognition and dementia? *Neurobiology of Stress* 2020;12(**Agents:** Allopregnanolone **Vehicle:** Not stated; **Route:** SC; **Species:** Mice; **Strain:** wild-type; **Pump:** Not stated; **Duration:** 4 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (mice, 10 weeks old); Allopregnanolone aka APα; neurodegenerative (Cognitive dysfunction, dementia and Alzheimer's disease);

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 ug/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; 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);

Q7654: I. A. Zhuravin, *et al.* Regulation of Neprilysin Activity and Cognitive Functions in Rats After Prenatal Hypoxia. *Neurochem Res* 2019;44(6):1387-1398

Agents: epigallocatechin-3-gallate **Vehicle:** Saline; **Route:** CSF/CNS (parietal cortex); **Species:** Rat; **Strain:** Wistar; **Pump:** Not Stated; **Duration:** 4 weeks;

ALZET Comments: Dose (0.25 µL/h of 10^{–3} M); Controls received mp w/ vehicle; animal info (4 months,); behavioral testing (novel object recognition test); comparison of oral administration vs mp; EGCG is a green tea catechin; Brain coordinates (Bregma=+0.20; L=3; H=1 mm); neurodegenerative (Alzheimer's); organisms used were offspring of rats submitted to prenatal hypoxia. Oral EGCG administration via drinking water was more beneficial than intracranial injection resulting in better cognitive outcome on memory test; Therapeutic indication (protect hippocampal formation and spatial memory in aged rats through an increase in NEP activity in blood plasma, Cx and Hip along with increased number of labile dendritic spines in their hippocampal CA1 area.);

Q6991: N. Yousefi, *et al.* Prestimulation of Microglia Through TLR4 Pathway Promotes Interferon Beta Expression in a Rat Model of Alzheimer's Disease. *J Mol Neurosci* 2019;

Agents: Amyloid beta oligomers; High-density lipoprotein, human **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Strain:** Wistar; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Dose (25 µg- Aβ oligomer, 250 µg/ml human high-density lipoprotein); Controls received mp w/ vehicle; animal info (Male rats, 220–250 g); Brain coordinates (AP, – 0.96; L, ± 1.8; DV, – 3.4); neurodegenerative (Alzheimer's);

Q9112: J. Yang, *et al.* Age- and Nicotine-Associated Gene Expression Changes in the Hippocampus of APP/PS1 Mice. *Journal of Molecular Neuroscience* 2019;69(4):608-622

Agents: Nicotine Hydrogen Tartrate **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** Not Stated; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose (48 mg/kg/hour); Controls received mp w/ vehicle; animal info (Male, 4-6 months old); neurodegenerative (Alzheimer's Disease);

Q6992: R. A. Whittington, *et al.* Administration of the benzodiazepine midazolam increases tau phosphorylation in the mouse brain. *Neurobiology of Aging* 2019;75(11-24

Agents: Midazolam **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6; **Pump:** 2001D; **Duration:** Not Stated;

ALZET Comments: Dose (10 mg/kg or 25 mg/kg); 0.9% Saline used; Controls received mp w/ vehicle; animal info (Male, 8-10-week-old); post op. care (preemptive analgesia with carprofen 5 mg/kg s.c.); midazolam is a benzodiazepine; neurodegenerative (Alzheimer's);

Q9052: M. Wang, *et al.* Astrocytic connexin 43 potentiates myelin injury in ischemic white matter disease. *Theranostics* 2019;9(15):4474-4493

Agents: Cabenexolone; Meclofenamic Acid; Gap 26; Gap 19 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: Dose (CBX- 0.1, 0.5 or 2.5 µg/ul, MFA- 0.1, 1, or 10 mM, Gap 26- 2.0 µg/ul, Gap 19 2.0 µg/ul); Controls received mp w/ vehicle; animal info (Male 10-12 weeks old, 22-27 g); ALZET brain infusion kit 3 used; Brain coordinates (anterior-posterior = –0.4 mm, medial-lateral = 1.0 mm, and dorsal-ventral = 3.0 mm); dental cement used; neurodegenerative (Dementia);



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

Agents: AB42 peptide **Vehicle:** CSF, artificial; **Route:** SC; **Species:** Rat; **Strain:** Sprague Dawley; **Pump:** 2004; **Duration:** 7 days; **ALZET Comments:** Dose (0.5 ul/h); animal info (Male, 300 g); peptides; Brain coordinates (Bregma 1.3 mm; midline 1.8 mm; depth 3.0 mm from the brain surface); bilateral cannula used; cyanoacrylate adhesive; neurodegenerative (Alzheimer's Disease);

Q7669: I. C. Stancu, *et al.* Aggregated Tau activates NLRP3-ASC inflammasome exacerbating exogenously seeded and non-exogenously seeded Tau pathology in vivo. *Acta Neuropathologica* 2019;137(4):599-617

Agents: MCC950 **Vehicle:** Saline; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** Not Stated; **Pump:** 2006; **Duration:** 6 weeks;

ALZET Comments: Dose (0.15 ul/h); Controls received mp w/ vehicle; enzyme inhibitor (inflammasome inhibitor); ALZET brain infusion kit 3 used; Brain coordinates (A/P, - 0.5; L, - 1.1; relative to bregma); cyanoacrylate adhesive; neurodegenerative (Alzheimer's Disease);

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

Agents: B-amyloid inhibitor **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** Not Stated; **Pump:** 2002; **Duration:** 2 weeks;

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

Q8824: N. Reichenbach, *et al.* Inhibition of Stat3-mediated astrogliosis ameliorates pathology in an Alzheimer's disease model. *EMBO Molecular Medicine* 2019;11(2):

Agents: P2Y1R inhibitor **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Strain:** C57BL/6N; **Pump:** 2006; **Duration:** 42 days;

ALZET Comments: Controls received mp w/ vehicle; post op. care (Buprenorphine); behavioral testing (Morris Water Maze Test); P2Y1R inhibitor aka MRS2179; ALZET brain infusion kit 3 used; Brain coordinates (anteroposterior -0.2 mm, medial lateral +1 mm relative to bregma; dorsal ventral +2.5 mm from the brain surface); neurodegenerative (Alzheimer's Disease);

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

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

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

Q8270: M. Luisetto*, *et al.* Role of plants, environmental toxins and physical neurotoxicological factors in Amyotrophic lateral sclerosis, Alzheimer Disease and other Neurodegenerative Diseases. *Journal of Neuroscience and Neurological Disorders* 2019;3(1):001-086

Agents: Rotenone **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Rat; **Strain:** Lewis; **Pump:** Not stated; **Duration:** 6 days;

ALZET Comments: Dose (3 mg/kg/day); Controls received mp w/ vehicle; Rotenone aka Rot; neurodegenerative (Alzheimer's Disease, Parkinson's Disease, Lou Gehrig's Disease);

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);