



References (2019-Present) on the Alzheimer's Research
Using ALZET® Osmotic Pumps

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;

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);

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 (cerebral ventricle); **Species:** Mice; **Strain:** HCNP-pp cKO; **Pump:** 1002; **Duration:** 2 weeks;

ALZET Comments: animal info: 87-91 weeks; brain coordinates (0.6 mm posterior and 1.2 mm lateral from the bregma); bilateral cannula used; dental cement used; neurodegenerative (Alzheimer's disease 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(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

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 **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Duration:** 7 days;

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

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 **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);



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); "

Q10715: 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);

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);

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)

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; aCSF; **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);

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; **Pump:** Not Stated; **Duration:** 28 days;
ALZET Comments: Dose: (1 mg/kg/day). Controls received mp w/ vehicle; animal info: 11-month-old male B6/129 wild-type (WT) mice' 3xTgAD mutant mice (B6;129-Tg); 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; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Dose: (25 μ M); animal info: Three-month old 5xFAD mice along with age-matched wild-type (WT) 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; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: animal info (12-months old; male Wistar 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);

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; **Pump:** 2004; **Duration:** 7 days;

ALZET Comments: Dose: (20 mg/kg/day); 0.9% sterile saline vehicle used; animal info: APP/PS1 (Jax, 34,832) and hAPP-J20 mice (Jax MMRRC, 034836); behavioral testing (MWM and Y-maze tests); Ganciclovir aka (GCV)neurodegenerative (Alzheimer's disease);

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; **Pump:** 2006; **Duration:** Not Stated;

ALZET Comments: Dose: (3 mg/kg/day); Controls received mp w/ vehicle; animal info: 6 months of age, APP/PS1 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: Amyloid beta 1-42 **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Rat; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose: 3 nmol/3ml; Controls received mp w/ vehicle; animal info: adult male Wistar 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 NTTU 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; **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 Sprague Dawley rats, 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-Pituitary-Adrenal-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; **Pump:** Not Stated; **Duration:** 14 days;
ALZET Comments: Dose: (5 mg/kg/d); Controls received mp w/ vehicle; animal info: C57BL/6 mice; 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:** AB (1-42) **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Pump:** Not Stated; **Duration:** 14 days;
ALZET Comments: "Dose: (10 mM); animal info: adult male Wistar 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); "

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; **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: Dose: (8 mg/kg/d); Controls received mp w/ vehicle; animal info: Eleven months old Tg-SwDI mice, 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; **Pump:** Not Stated; **Duration:** 14 days;
ALZET Comments: Dose (3 to 6 nmol/d); animal info (Sprague-Dawley 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

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; **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info: Wildtype and 5XFAD mice (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);

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; **Route:** CSF/CNS (intracerebral); **Species:** Rat;
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; **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: Dose (2.4 nmol/day); Controls received mp w/ vehicle; animal info (6–7-month-old APP/PS1 mice); neurodegenerative (Alzheimer's Disease);



Q10577: C. Kondak, *et al.* Hydromethylthionine Enhancement of Central Cholinergic Signalling 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; **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;

Q9297: Q. Jin, *et al.* Extracellular Vesicles: Novel Roles in Neurological Disorders. *Stem Cells International* 2021;2021(6640836

Agents: HSP70; HSP90 **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Pump:** Not Stated; **Duration:** 14 days; **ALZET Comments:** Dose (12 ug/day); neurodegenerative (Alzheimer's Disease);

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; **Pump:** 2004; **Duration:** 28 days; **ALZET Comments:** Dose (10 mg/kg/day); Controls received mp w/ vehicle; animal info (7 month old male WT and heterozygous 5xFAD mice); half-life (p. 2; 12.5 hr); neurodegenerative (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; **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:P301S-tau transgenic mice; Homozygous P301S-tau and wild-type 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)

Q10148: K. Cho, *et al.* Selective striatal cell loss is ameliorated by regulated autophagy of the cortex. *Life Sciences* 2021;282(119822

Agents: 3-nitropropionic Acid; NQDI-1 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days; **ALZET Comments:** Dose:3-NP (0.5 µl/h); NQDI-1 (2.5 mg/kg/day); 3-nitropropionic acid aka (3-NP); NQDI-1 aka ASK1 inhibitor; "Neurodegenerative (Alzheimer's disease; Parkinson's disease (PD); Huntington's disease (HD))"

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

Agents: AB 1-42 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** 2 weeks; **ALZET Comments:** Dose (300 pmol); 0.9% Saline used; Controls received mp w/ vehicle; animal info (8-10 weeks old, C57BL/N); ALZET brain infusion kit 1 used; Brain coordinates (-1.0 mm anterior/posterior, +0.5 mm medial/lateral, and -2.5 mm dorsal/ventral); neurodegenerative (Alzheimer's Disease);

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; **Pump:** 1002; **Duration:** 14 days; **ALZET Comments:** Dose (2 mg protein per mL); Controls received mp w/ vehicle; animal info (nine-month-old male APP/PS1 mice); 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; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Animal info (5x FAD transgenic 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);

Q9772: N. J. D. Wright. 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; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (160 pmol/day); animal info (Male, Wistar,); 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);

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; **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 $A\beta$ 1–40; Amyloid protein, beta (1-42) aka $A\beta$ 1–42; 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; **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; **Species:** Mice; **Pump:** Not Stated; **Duration:** 14 days;

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

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; **Pump:** Not Stated; **Duration:** 11 days;

ALZET Comments: Dose (0.2 mg donepezil hydrochloride/kg bodyweight/day); 0.9% NaCl used; animal info (Male abcb1ab(-/-) mice and FVB/N wildtype mice); Resultant plasma level (0.47 ng/ml donepezil); neurodegenerative (Alzheimer's disease);

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

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

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



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

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

ALZET Comments: Dose (0.25 ul/hr); Controls received mp w/ vehicle; animal info (APP/PS1, 4-10 months old); p75 NTR metalloprotease inhibitor aka TAPI-2; enzyme inhibitor (p75 NTR metalloprotease inhibitor); Brain coordinates (0.3 mm posterior, 1.0 mm lateral, and 2.3 mm ventral to Bregma); bilateral cannula used; neurodegenerative (Alzheimer's Disease);

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

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

ALZET Comments: Dose (100 ng/day); Controls received mp w/ vehicle; animal info (Male, C57BL/6N); neurodegenerative (Alzheimer's Disease);

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

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

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

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; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Dose 6 ug/d; Controls received mp w/ vehicle; animal info (Male Wistar 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; **Pump:** Not Stated; **Duration:** 2 weeks;

ALZET Comments: Dose (0.5µl/hour); Controls received mp w/ vehicle; animal info (Wistar 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; **Pump:** 2006; **Duration:** 10 days;

ALZET Comments: Dose (1 ug/min/kg); Controls received mp w/ vehicle; animal info (12-month-old male TG2576 mice); Blood pressure measured via tail-cuff method; 155 mmHg - 170 mmHg; Angiotensin II aka Ang II; neurodegenerative (Alzheimer's disease);

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

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

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



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; **Pump:** 2006; **Duration:** 3 months;
ALZET Comments: Dose: (1000 ng/kg/min); animal info: hypertensive mice, 3 months old; post op. care: To alleviate pain, buprenorphine (at 0.1 mg/kg) was administered subcutaneously 30 min before the surgery; Angiotensin II aka (Ang II); neurodegenerative (Alzheimer disease); cardiovascular; Hypertension"

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; **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 5xFAD mice); 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: Beta-hydroxybutyrate **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 8 weeks;
ALZET Comments: Dose (1.5 mmol/kg/day); Controls received mp w/ vehicle; animal info (Six-week-old male ApoE^{-/-} and C57BL/6J mice); pumps replaced every 4 weeks; half-life (p.10); Beta-hydroxybutyrate aka (B-OHB); neurodegenerative (Alzheimer's disease)

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; **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; **Pump:** Not stated; **Duration:** 2 weeks;
ALZET Comments: Dose (11 µg/ul/hr); Controls received mp w/ vehicle; animal info (APP23/GFAP-TK double transgenic mice, 9 months old); behavioral testing (Object location task; Y maze); Ganciclovir aka GCV; neurodegenerative (Alzheimer's disease);

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

Agents: HspB5, human recomb.; Myoglobin **Vehicle:** PBS; **Route:** CSF/CSN; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Dose (12.5 mg/mL); Controls received mp w/ vehicle; animal info (P301S transgenic mice (female, 8 weeks age)); ALZET brain infusion kit 3 used; Brain coordinates (0.5 mm deep, resting onto the surface of the cortex 0.75 mm laterally from the midline and 1.2 mm forward from bregma); neurodegenerative (Alzheimer's disease);

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; **Pump:** Not stated; **Duration:** 35 days;
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; **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 C57Bl/6 J and 12-month-old C57Bl/6 J mice); behavioral testing (Y-maze test); PDD005 aka purine derivative drug; neurodegenerative (Alzheimer's and Parkinson's disease);

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

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

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

Q10155: O. V. Fedorova, *et al.* Steroidal inhibitor of Na/K-ATPase marinobufagenin in a mouse model of Alzheimer's disease. *Alzheimer's & Dementia* 2020;16(S4):

Agents: Marinobufagen **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 3 months;

ALZET Comments: Dose: (100µg/day/kg); animal info: Fifteen-month old male AD and WT mice; behavioral testing: Open field test; Blood pressure measured via (tail cuff plethysmography); 98+-4 mmHg -100+-4 mmHg; 92+-1mmHg-104+-6mmHg; Marinobufagenin aka (MBG); neurodegenerative (Alzheimer's disease);

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; **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; **Pump:** Not Stated;

Duration: 28 days;

ALZET Comments: Dose (15 µg/day); Controls received mp w/ vehicle; animal info (wild-type C57BL/6 J 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; **Pump:** 2001; 2004;

Duration: 6 weeks;

ALZET Comments: Dose (2.5 mg); animal info (APPPS1 mice; CX3CR1-GFP mice; CD11b-HSVTK+/- mice); Ganciclovir aka Cymeven; neurodegenerative (Alzheimer's disease);

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; **Pump:** Not stated; **Duration:** 4 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (wild-type 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; **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);

Q8160: K. Arnaud, *et al.* Non-cell autonomous choroid plexus-derived sAPP α regulates adult hippocampus proliferation and plasticity. *Hyper Articles en Ligne* 2020;

Agents: Cre recombinase protein, Vected **Vehicle:** Saline, DMSO; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Pump:** Not stated; **Duration:** 15 days;
ALZET Comments: Dose (3.5 μ g); 1.8% NaCl, 15% DMSO used; Controls received mp w/ vehicle; animal info (Janvier Mice); behavioral testing (water maze); Vected Cre recombinase protein aka Cre-Tat; Brain coordinates (x, -0.58 mm; y, +1.28 mm; z, -2 mm); neurodegenerative (Alzheimer disease);

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; **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 Sprague-Dawley rats, 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; **Pump:** Not Stated; **Duration:** 4 weeks;

ALZET Comments: Dose (0.25 μ L/h of 10⁻³ M); Controls received mp w/ vehicle; animal info (4 months, Wistar); 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; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Dose (25 μ g- A β oligomer, 250 μ g/ml human high-density lipoprotein); Controls received mp w/ vehicle; animal info (Male Wistar 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; **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);