



Recent References on Neurodegenerative Diseases  
Using ALZET® Osmotic Pumps

ALS (2019-Present)

**Q10963:** S. Minamiyama, *et al.* Efficacy of oligodendrocyte precursor cells as delivery vehicles for single-chain variable fragment to misfolded SOD1 in ALS rat model. *Molecular Therapy: Methods and Clinical Development* 2023;28(312-329)  
**Agents:** D3-1 antibody, mouse **Vehicle:** PBS; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Strain:** SOD1H46R; **Pump:** 2ML4;  
**Duration:** 4 weeks;  
**ALZET Comments:** Dose (1 mg/mL); Controls received mp w/ vehicle; animal info: 1- to 2-day-old Sprague-Dawley rats; behavioral testing (Hindfoot reflex test; Inclined plate test; Grip test); func of mp verified by D3-1 concentrations with ELISA;

**Q11099:** F. De Lorenzo, *et al.* CDFN rescues motor neurons in models of amyotrophic lateral sclerosis by targeting endoplasmic reticulum stress. *Brain* 2023;146(9):3783-3799  
**Agents:** Cerebral dopamine neurotrophic factor **Vehicle:** PBS; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat;  
**Strain:** TDP43-M337V **Pump:** Not Stated; **Duration:** 28 days;  
**ALZET Comments:** Dose (6 ug/day); Controls received mp w/ vehicle; catheter; behavioral testing (Rotarod test);

**Q11248:** M. Bolborea, *et al.* Loss of hypothalamic MCH decreases food intake in amyotrophic lateral sclerosis. *Acta Neuropathologica* 2023;145(6):773-791  
**Agents:** Melanin-concentrating hormone **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice;  
**Strain:** Sod1G86R; WT; **Pump:** Not Stated; **Duration:** 15 days;  
**ALZET Comments:** Dose (1.2 µg/day); 0.9% NaCl used; Controls received mp w/ vehicle; animal info (75 days old); post op. care (Bup inject, meloxicam in H2O); ALZET BIK3 used; Brain coordinates (Bregma -0.8 mm; M 0.4 mm; D -2 mm); cyanoacrylate

**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;  
**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 BIK 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); FTD Therapeutic indication (ALS, FTD); "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

**Q10538:** E. E. Handley, *et al.* Estrogen Enhances Dendrite Spine Function and Recovers Deficits in Neuroplasticity in the prpTDP-43(A315T) Mouse Model of Amyotrophic Lateral Sclerosis. *Molecular Neurobiology* 2022;59(5):2962-2976  
**Agents:** Estradiol **Vehicle:** Saline; DMSO; **Route:** SC; **Species:** Mice; **Strain:** Wild-type; TDP-43; **Pump:** 2004; **Duration:** 60 d  
**ALZET Comments:** Dose (10 mg/ml); 50% DMSO used; Controls received mp w/ vehicle; animal info (Female; ; Ovariectomy); wound clips used; pumps replaced every 4 weeks; replacement therapy (Estrogen); neurodegenerative (ALS)

**Q10066:** R. A. Smith, *et al.* Development of a molecular therapy for the SOD1 familial variant of ALS. *Neurotherapeutics in the Era of Translational Medicine* 2021;1-18  
**Agents:** Oligonucleotides; Methylene blue **Vehicle:** Not Stated; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat;  
**Strain:** G93A SOD1 transgenic; **Pump:** Not Stated; **Duration:** 14 days;  
**ALZET Comments:** Animal info ( rats, 2-3 months of age);

**Q9420:** J. Post, *et al.* A Novel Anti-Inflammatory d-Peptide Inhibits Disease Phenotype Progression in an ALS Mouse Model. *Molecules* 2021;26(6):  
**Agents:** All-D-peptide RD2 **Vehicle:** Saline; **Route:** IP; **Species:** Mice; **Strain:** SOD1\*G93A; **Pump:** 1004; **Duration:** 28 days;  
**ALZET Comments:** Dose (19 mg/kg/d); Controls received mp w/ vehicle; animal info (Twelve weeks old female);



**Q10356:** A. Arnoux, *et al.* Evaluation of a 5-HT<sub>2B</sub> receptor agonist in a murine model of amyotrophic lateral sclerosis. *Scientific Reports* 2021;11(1):23582

**Agents:** BW723C86 **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** 1004; **Duration:** Not Stated;  
**ALZET Comments:** Dose (1 mg/kg/d; 3 mg/kg/d); 20% DMSO used; animal info (Female; Male; 75 days old); pumps replaced every month; neurodegenerative (Amyotrophic lateral sclerosis); Therapeutic indication (Amyotrophic lateral sclerosis);

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

**Agents:** MAb 5261; Immunoglobulin G **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Strain:** SOD1G93A; C57BL/6J; 129SvHsd; **Pump:** 1004; **Duration:** Not Stated;  
**ALZET Comments:** Dose: (7.2 mg/ml CSCL13 antibody); animal info: Female transgenic; MAb 5261, anti-CSCL13 antibody;

**Q8668:** P. S. Mishra, *et al.* Transmission of ALS pathogenesis by the cerebrospinal fluid. *Acta Neuropathologica Communications* 2020;8(1):65

**Agents:** CSF, amyotrophic lateral sclerosis **Vehicle:** CSF, artificial; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** hTDP43 WT; **Pump:** 1002; **Duration:** 14 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (mice (mean age 230.41 ± 37.7 days)); behavioral testing (open-field test); amyotrophic lateral sclerosis CSF aka ALS-CSF; Brain coordinates (1.50 mm lateral, – 1.00 mm antero-posterior and – 2.00 dorsoventral from Bregma); neurodegenerative (Amyotrophic Lateral Sclerosis);

**Q7006:** R. Malik, *et al.* The molecular tweezer CLR01 inhibits aberrant superoxide dismutase 1 (SOD1) self-assembly in vitro and in the G93A-SOD1 mouse model of ALS. *J Biol Chem* 2019;294(10):3501-3513

**Agents:** CLR01 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** B6SJL-Tg; **Pump:** 1004; **Duration:** 6 weeks;  
**ALZET Comments:** Dose (0, 0.5, or 5.0 mg/kg); 0.9% saline used; Controls received mp w/ vehicle; behavioral testing (grip-strength test, rotarod test); half-life: 1-2 hours (p.5); CLR01 is a broad-spectrum inhibitor of the self-assembly and toxicity of amyloid proteins ; enzyme inhibitor (superoxide dismutase 1 (SOD1)); neurodegenerative (amyotrophic lateral sclerosis);

**Q9161:** E. Blacher, *et al.* Potential roles of gut microbiome and metabolites in modulating ALS in mice. *Nature* 2019;572(7770):474-480

**Agents:** Nicotinamide; Phenol Sulfate **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** Sod1-Tg; **Pump:** 1004;  
**Duration:** 4m  
**ALZET Comments:** Dose (NAM- 30.8 mg/kg/week or 49.28 mg/kg/week); Controls received mp w/ vehicle; animal info (40-180 days old); pumps replaced every 4 weeks; Nicotinamide aka NAM ; neurodegenerative (Amyotrophic Lateral Sclerosis);

### Alzheimer's (2022-Present)

**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;

**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: 6/9 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);

**Q11213:** M. A. Pedrosa, *et al.* AT1 receptor autoantibodies mediate effects of metabolic syndrome on dopaminergic vulnerability. *Brain Behavior and Immunity* 2023;108(255-268)

**Agents:** AT1-AA **Vehicle:** Saline; **Route:** IP; **Species:** Rat; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 14 days;

**ALZET Comments:** Dose (0.15 ug/ul, 0.25 ug/ul); Controls received mp w/ vehicle; animal info: Male young adult rats 2–3-month-old; Blood pressure measured via non-invasive pressure system meter; Blood pressure measurement (p.261) Fig.4; AAT1-AA are agonistic autoantibodies to the ang II type 1 receptor; neurodegenerative (Parkinson's, Alzheimer's); "Our data using osmotic minipump infusions suggest that circulating AT1-AA can disrupt BBB, enter CSF and affect brain." p.11

**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); dental cement used; neurodegenerative (Alzheimer's disease and Lewy body dementia.);

**Q11086:** C.-W. Lin, *et al.* Monascus-fermented metabolites repressed amyloid  $\beta$ -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 oA $\beta$ (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  $\mu$ g/day); peptides; review of different approaches for AD prevention and therapy

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

**Agents:** Amyloid beta (1-42) **Vehicle:** Acetonitrile; trifluoroacetic acid; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat;

**Strain:** Wistar; **Pump:** Not Stated; **Duration:** 2 weeks;

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



**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 (intraventricular); **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);

**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);

**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:** 4w **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:** Ang 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; 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; **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; 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, WT **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 BIK used; Brain coordinates (right ventricle (-0.8 mm mid/lateral, -0.1 mm antero/posterior and -3.0 mm dorso/ventral from Bregma);

## Ataxia

**Q10692:** S. Talele, *et al.* Central Nervous System Distribution of the Ataxia-Telangiectasia Mutated Kinase Inhibitor AZD1390: Implications for the Treatment of Brain Tumors. *Journal of Pharmacology and Experimental Therapeutics* 2022;383(1):91-102

**Agents:** AZD1390 **Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Strain:** Wild-type, TKO; **Pump:** 1003D; **Duration:** 24 hours;

**ALZET Comments:** Dose (10 mg/ml); Controls received mp w/ vehicle; animal info (Male; Female; 8-14 weeks old; ); enzyme inhibitor (AZD1390 is a ataxia telangiectasia mutant kinase inhibitor); cancer (Glioblastoma);

**Q1073:** C. R. Foster, *et al.* Ataxia telangiectasia mutated kinase plays a protective role in beta-adrenergic receptor-stimulated cardiac myocyte apoptosis and myocardial remodeling. *Molecular and Cellular Biochemistry* 2011;353(1-2):13-22

**Agents:** Isoproterenol, I- **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** WT hKO; **Pump:** Not Stated; **Duration:** 7 days;

**ALZET Comments:** Animal info (4 mo old, male, female)

**P6477:** S. E. Browne, *et al.* Treatment with a catalytic antioxidant corrects the neurobehavioral defect in ataxia-telangiectasia mice. *Free Radical Biology and Medicine* 2004;36(7):938-942

**Agents:** EUK-189 **Vehicle:** Mannitol; **Route:** SC; **Species:** Mice; **Strain:** Atm -/-; 129S6/SvEvTac; **Pump:** 2004; **Duration:** 56, 84d

**ALZET Comments:** Controls received mp w/ vehicle; long-term study; pumps replaced every 28 days; no stress (see pg.941); cancer (thymoma); EUK-189 is a synthetic catalytic antioxidant w/ both catalase & superoxide dismutase activities;

## Huntington's (2019-Present)

**Q11006:** P. Stepanova, *et al.* Beneficial behavioral effects of chronic cerebral dopamine neurotrophic factor (CDNF) infusion in the N171-82Q transgenic model of Huntington's disease. *Scientific Reports* 2023;13(1):2953

**Agents:** Neurotrophic factor, cerebral dopamine **Vehicle:** PBS; **Route:** CSF/CNS (right striatum); **Species:** Mice; **Strain:** C57BL/6JRccHsd × B6C3-Tg (HD82Gln)81Gschi/J; **Pump:** 1004; **Duration:** 4 weeks;

**ALZET Comments:** Dose (9.6 ug/ul); Controls received mp w/ vehicle; animal info: Adult female and male 9 weeks; Brain coordinates: A/P + 0.86; M/L - 1.8; D/V - 3.0; cyanoacrylate adhesive; behavioral testing (Rotarod test; Digigait test; The balance beam test); neurodegenerative (Huntington's disease); brain tissue distribution



**Q11190:** C. Liu, *et al.* Mitochondrial HSF1 triggers mitochondrial dysfunction and neurodegeneration in Huntington's disease. *EMBO Molecular Medicine* 2022;14(7):e15851

**Agents:** DH1 peptide; TAT peptide, control **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** YAC128 (transgenic); **Pump:** 2006; **Duration:** 3 months;

**ALZET Comments:** Dose (3 mg/kg/day); Controls received mp w/ vehicle; animal info: Male; Wild-type; 6 months old; behavioral testing (Open-field test; Rotarod test); pumps replaced every 6 weeks; long-term study; peptides; "Of note, continuous treatment of DH1 improved motor deficits, as tested by open-field test." p. 10

**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:** 4w **ALZET Comments:** animal info (Male ); neurodegenerative (Alzheimer's; Parkinson's; Huntington's disease);

**Q9411:** B. Martinez, *et al.* Altered microRNA expression in animal models of Huntington's disease and potential therapeutic strategies. *Neural Regeneration Research* 2021;16(11):2159-2169

**Agents:** 3-nitropropionic acid **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Strain:** Lewis; **Pump:** Not Stated; **Duration:** Not Stated;

**ALZET Comments:** Animal info (male rats, 12 weeks old); 3-nitropropionic acid aka 3NP; neurodegenerative

**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; **Strain:** Not Stated; **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))"

**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

**Q8479:** J. Ganz, *et al.* A novel specific PERK activator reduces toxicity and extends survival in Huntington's disease models. *Scientific Reports* 2020;10(1):6875

**Agents:** MK-28 **Vehicle:** DMSO; PEG-400; **Route:** SC; **Species:** Mice; **Strain:** B6 wild type; **Pump:** 1004; **Duration:** 2 weeks; 28 d

**ALZET Comments:** Dose (6 mg/kg; 1 mg/kg); Controls received mp w/ vehicle; animal info ( mice; four-week-old mice); behavioral testing (Rotarod test); MK-28 aka small molecule PERK activator; neurodegenerative (Huntington's disease);

**Q8389:** G. Birolini, *et al.* Striatal infusion of cholesterol promotes dose-dependent behavioral benefits and exerts disease-modifying effects in Huntington's disease mice. *EMBO Mol Med* 2020;12(10):e12519

**Agents:** cholesterol (cyclodextrin, methyl-b balanced) **Vehicle:** CSF, Artificial; **Route:** CSF/CNS (corpus striatum); **Species:** Mice; **Strain:** R6/2; B6CBAF1/J; **Pump:** 1004; **Duration:** 28 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (wild-type mice, 5 weeks old); behavioral testing (Rotarod, Activity Cage, Novel object recognition (NOR) test); methyl-b-cyclodextrin aka MBCD; ALZET brain infusion kit 3 used; Brain coordinates (stereotaxic coordinates 1.75 mm mediolateral, 0.5 mm anteroposterior, 3 mm dorsoventral);

**Q8971:** Y. Zhao, *et al.* ATAD3A oligomerization causes neurodegeneration by coupling mitochondrial fragmentation and bioenergetics defects. *Nature Communications* 2019;10(1):1371

**Agents:** TAT control peptide; DA1 peptide **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** R6/2 (Tg); WT; YAC128 (Tg); **Pump:** 2004; **Duration:** 6, 8 weeks;

**ALZET Comments:** Dose (1 mg/kg/day); animal info (Male, YAC128, 3 month old); behavioral testing (Tail Suspension Test); pumps replaced every 4 weeks; peptides; neurodegenerative (Huntington's Disease);



**Q7602:** E. Paldino, *et al.* Modulation of Phospho-CREB by Systemically Administered Recombinant BDNF in the Hippocampus of the R6/2 Mouse Model of Huntington's Disease. *Neurosci J* 2019;2019(8363274)

**Agents:** neurotrophic factor, Recombinant brain derived **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** R6/2; WT; **Pump:** 1004; **Duration:** 4 weeks;

**ALZET Comments:** Dose (4 ug/d); Controls received mp w/ vehicle; animal info (4 week old, Male); neurodegenerative (Huntington's Disease);

**Q6969:** A. U. Joshi, *et al.* Drp1/Fis1-mediated mitochondrial fragmentation leads to lysosomal dysfunction in cardiac models of Huntington's disease. *J Mol Cell Cardiol* 2019;127(125-133)

**Agents:** P110 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** R6/2 HD, hemizygous; **Pump:** Not Stated; **Duration:** 8 weeks;

**ALZET Comments:** Dose ((3 mg/Kg/day); animal info (5-week old); P110 is a Drp1/Fis1 interaction peptide inhibitor; neurodegenerative (Huntington's);

**Q7587:** Y. T. Hsu, *et al.* Enhanced Na(+) -K(+) -2Cl(-) cotransporter 1 underlies motor dysfunction in huntington's disease. *Mov Disord* 2019;34(6):845-857

**Agents:** XPro1595 **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Strain:** Transgenic R6/2; **Pump:** 1004; **Duration:** 4 weeks;

**ALZET Comments:** "Dose (0.08 mg/kg/day); Controls received mp w/ vehicle; animal info (6.5 weeks); XPro1595 is a dominant-negative inhibitor of soluble TNF-alpha; ALZET brain infusion kit 3 used; neurodegenerative (Huntington's); Therapeutic indication (disease progression in HD due to inflammation); "

### Niemann-Pick's

**Q3736:** L. Trovo, *et al.* Improvement of biochemical and behavioral defects in the Niemann-Pick type A mouse by intraventricular infusion of MARCKS. *NEUROBIOLOGY OF DISEASE* 2015;73(319-326)

**Agents:** MARCKS peptide **Vehicle:** Saline, sterile; **Route:** CSF/CNS; **Species:** Mice; **Strain:** ASMko; **Pump:** 1004; **Duration:** Not Stated;

**ALZET Comments:** Control animals received mp w/ vehicle; animal info (4 mo old); peptides; ALZET brain infusion kit 3 used; cyanoacrylate used; behavioral testing (accelerating rotarod); MARCKS is a protein required for PI(4,5)P2 membrane clustering and hydrolysis

**Q3991:** N. Marschalek, *et al.* The natural history of cerebellar degeneration of Niemann-Pick C mice monitored in vitro. *Neuropathology and Applied Neurobiology* 2014;40(933-945)

**Agents:** Cyclodextrin, 2-hydroxypropyl-B- **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Mice; **Strain:** NPC; **Pump:** Not Stated; **Duration:** Not Stated;

**ALZET Comments:** pumps mentioned in introduction

**Q1986:** C. Cabeza, *et al.* Cholinergic Abnormalities, Endosomal Alterations and Up-Regulation of Nerve Growth Factor Signaling in Niemann-Pick Type C Disease. *Molecular Neurodegeneration* 2012;7(1):U1-U18

**Agents:** Nerve growth factor **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Strain:** BALB/c, NPC/1 -/-; **Pump:** 1002; **Duration:** 7 days;

**ALZET Comments:** Controls received mp w/ vehicle; aCSF recipe; brain infusion kit used

**P9265:** M. Zhang, *et al.* Mitogen-activated protein kinase activity may not be necessary for the neuropathology of Niemann-Pick type C mice. *Journal of Neurochemistry* 2008;107(3):814-822

**Agents:** PD-98059 **Vehicle:** DMSO; Saline; dye, Evan's blue; **Route:** CSF/CNS; **Species:** Mice; **Strain:** BALB/c; Nctr-Npc; **Pump:** 1002; **Duration:** 2 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; functionality of mp verified by dye infusion; dose-response (fig. 1); enzyme inhibitor (MAPK/ERK 1); brain tissue distribution; animal info (female, 5 wks old); 50% DMSO used; behavioral testing (limb motor activity/coat hanger test)



**P6916:** M. Zhang, *et al.* Cyclin-dependent kinase inhibitors attenuate protein hyperphosphorylation, cytoskeletal lesion formation, and motor defects in Niemann-Pick type C mice. *American Journal of Pathology* 2004;165(3):843-853

**Agents:** Roscovitine; olomoucine; iso-olomoucine **Vehicle:** DMSO; **Route:** CSF/CNS; **Species:** Mice;

**Strain:** npc1m1N (BALB/c nih); **Pump:** 1002; **Duration:** 2, 4 weeks;

**ALZET Comments:** Pumps replaced every 2 weeks for 4 week infusions; enzyme inhibitor (CDK); neurodegenerative (Alzheimer's disease, ALS, Niemann-Pick Type C disease); lynch coil used to accommodate 75% DMSO

**P5859:** F. Camargo, *et al.* Cyclodextrins in the treatment of a mouse model of Niemann-Pick C disease. *Life Sci* 2001;70(2):131-142

**Agents:** Cyclodextrin, 2-hydroxypropyl- $\beta$ - **Vehicle:** Saline, sterile; **Route:** CSF/CNS; **Species:** Mice (knockout); **Strain:** npc1-/- (BALB/c); mdr1a-/-; **Pump:** 2004; **Duration:** 28 days;

**ALZET Comments:** stress/adverse reaction: (see pg.139) mice were active & broke the cemented cannulae away from the skull; ALZET brain infusion kit 2 used (per Dr. Erickson); 2-Hydroxypropyl- $\beta$ -cyclodextrin is (HPBCD); methylene blue dye infused (probably not by pump) after cyclodextrin infusion to confirm the intraventricular location; delivery route somewhat confusing - paper refers to the route alternately as intrathecal and intraventricular; neurodegenerative (Niemann-Pick Type C disease)

### Parkinson (2021-Present)

**Q11004:** S. Song, *et al.* Dysfunction of the noradrenergic system drives inflammation, alpha-synucleinopathy, and neuronal loss in mouse colon. *Frontiers in Immunology* 2023;14(1083513)

**Agents:** Salmeterol; dipheyleineiodonim **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** SNCA; **Pump:** Not Stated;

**Duration:** 28 days;

**ALZET Comments:** Dose: (salmeterol: 10 ug/kg/day, dipheyleineiodonim: 10 mg/kg/day); animal info: 8-week-old male; Controls received mp w/ vehicle; salmeterol: B2-adrenoreceptor agonist, DPI: NADPH oxidase inhibitor; behavioral testing (Accelerated Rotarod behavioral test); neurodegenerative (Parkinson's disease);

**Q11213:** M. A. Pedrosa, *et al.* AT1 receptor autoantibodies mediate effects of metabolic syndrome on dopaminergic vulnerability. *Brain Behavior and Immunity* 2023;108(255-268)

**Agents:** AT1-AA **Vehicle:** Saline; **Route:** IP; **Species:** Rat; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 14 days;

**ALZET Comments:** Dose (0.15 ug/ul, 0.25 ug/ul); Controls received mp w/ vehicle; animal info: Male young adult rats 2-3-month-old; Blood pressure measured via non-invasive pressure system meter; Blood pressure measurement (p.261) Fig,4; AAT1-AA are agonistic autoantibodies to the ang II type 1 receptor; neurodegenerative (Parkinson's, Alzheimer's); "Our data using osmotic minipump infusions suggest that circulating AT1-AA can disrupt BBB, enter CSF and affect brain." p.11

**Q11045:** T. P. Kilpelainen, *et al.* Nonpeptidic Oxazole-Based Prolyl Oligopeptidase Ligands with Disease-Modifying Effects on alpha-Synuclein Mouse Models of Parkinson's Disease. *Journal of Medicinal Chemistry* 2023;66(11):7475-7496

**Agents:** KYP-2047; HUP-55 **Vehicle:** DMSO; Tween 20; **Route:** IP; CSF/CNS (lateral ventricle); **Species:** Mice;

**Strain:** C57BL/6JRccHsd; **Pump:** 1004; **Duration:** 28 days;

**ALZET Comments:** Dose: 10 mg/kg/day; 0.2% dimethyl sulfoxide; 5% Tween in saline used; animal info (10 to 11 weeks old male); post op. care: Topical lidocaine (10 mg/mL), buprenorphine, (0.1 mg/kg) and carprofen (5 mg/kg) s.c. injections; KYP-2047 is a peptide-like PREP inhibitor; ALZET brain infusion kit 3 used; brain coordinates: 0.7 mm anterior and 1.4 mm lateral to bregma; behavioral testing (Cylinder Test.); neurodegenerative (Parkinson's);

**Q10612:** M. Morissette, *et al.* Prevention of L-Dopa-Induced Dyskinesias by MPEP Blockade of Metabotropic Glutamate Receptor 5 Is Associated with Reduced Inflammation in the Brain of Parkinsonian Monkeys. *Cells* 2022;11(4):

**Agents:** MPTP **Vehicle:** Not Stated; **Route:** SC; **Species:** Monkey (cynomologus); **Strain:** Cynomologus; **Pump:** Not Stated;

**Duration:** 24 hrs;

**ALZET Comments:** animal info (Drug-naïve; Ovariectomized; Female); behavioral testing (Motor Behavior Measures); MPTP aka 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine; neurodegenerative (Parkinson's Disease);





**Q10608:** E. Montalban, *et al.* Translational Profiling of Mouse Dopaminergic Neurons Reveals Region-Specific Gene Expression, Exon Usage, and Striatal Prostaglandin E2 Modulatory Effects. *Molecular Psychiatry* 2022;27(4):2068-2079

**Agents:** Misoprostol; Haloperidol **Vehicle:** PBS; Saline; **Route:** IP; CSF/CNS (intracerebral); **Species:** Mice; **Strain:** Wild-type; **Pump:** 1004; 2004; **Duration:** Not Stated;

**ALZET Comments:** animal info (D2-TRAP; C57BL/6 mice Male; Female; Transgenic); behavioral testing (rotarod/food-cued Y maze); bilateral cannula used; neurodegenerative (Parkinson's; Addiction; Schizophrenia); Therapeutic indication (Neuromodulators);

**Q10588:** R. Landau, *et al.* The Rat Rotenone Model Reproduces the Abnormal Pattern of Central Catecholamine Metabolism Found in Parkinson's Disease. *Disease Models & Mechanisms* 2022;15(1):

**Agents:** Rotenone **Vehicle:** DMSO; PEG; **Route:** SC; **Species:** Rat; **Strain:** Sprague Dawley; **Pump:** Not Stated; **Duration:** 10d

**ALZET Comments:** Dose (2 mg/kg/day); 1:1 DMSO:PEG used; animal info (Male ; 10 weeks old; Acclimated for at least 3 days before mp implantation); enzyme inhibitor (Rotenone); neurodegenerative (Parkinson'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:** 4w

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

**Q10552:** F. Imafuku, *et al.* Central and Enteric Neuroprotective Effects by *Eucommia ulmoides* Extracts on Neurodegeneration in Rotenone-induced Parkinsonian Mouse. *Acta Medica Okayama* 2022;

**Agents:** Rotenone **Vehicle:** DMSO; PEG; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6J; **Pump:** 2004; **Duration:** 4 weeks;

**ALZET Comments:** Dose: (2.5 mg/kg/day) Controls received mp w/ vehicle; animal info: Eight-week-old male, behavioral testing: open field test; neurodegenerative (Parkinson's disease);

**Q10166:** Q. Gao, *et al.* Angiotensin-(1-7) reduces alpha-synuclein aggregation by enhancing autophagic activity in Parkinson's disease. *Neural Regeneration Research* 2022;17(5):1138-1145

**Agents:** Angiotensin (1-7) **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Strain:** SD; **Pump:** 2004; **Duration:** 4 weeks;

**ALZET Comments:** Dose: (1.1 nmol/0.25 uL/hr); Controls received mp w/ vehicle; animal info: male (SD) rats, aged 7 weeks and weighing 250–280 g; behavioral testing: The grid test and bar test; Blood pressure measured via Tail cuff; 1 mmHg = 0.133 kPa.; Angiotensin (1-7) aka (Ang 1-7); Brain coordinates ((anteroposterior, –5.2 mm; mediolateral, –2.1 mm; dorsoventral, –7.8 mm from bregma); neurodegenerative (Parkinson's disease); "Our current study shows that the Ang-(1–7)/MasR axis reduces  $\alpha$ -syn pathology in a rotenone-induced cell model by reducing dysfunctional autophagic activity. More importantly, our results imply potential of Ang-(1–7) for (PD) therapy in vivo. These findings deepen our insight into the protective mechanisms of the Ang-(1–7)/MasR axis during (PD) progression and support the development of related therapeutic strategies for the treatment of (PD) and other  $\alpha$ -synucleinopathies."

**Q10745:** T. S. Eteläinen, *et al.* Removal of Proteinase K Resistant  $\alpha$ Syn Species Does Not Correlate With Cell Survival in a Virus Vector-Based Parkinson's Disease Mouse Model. *Neuropharmacology* 2022;218(Agents: KYP-2047 **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1002; **Duration:** 2 weeks; 4 weeks;

**ALZET Comments:** Dose: (10 mg/kg/day.); Controls received mp w/ vehicle; animal info: Male 10–11 weeks old post op. care: Topical lidocaine (10 mg/ml), s.c. buprenorphine (0.1 mg/kg) and s.c. carprofen (5 mg/kg); pumps replaced after 2 weeks; KYP-2047 is a enzyme inhibitor (PREP); neurodegenerative (Parkinson's disease); good methods (pg. 3)

**Q10502:** M. Bourque, *et al.* AV-101, a Pro-Drug Antagonist at the NMDA Receptor Glycine Site, Reduces L-Dopa Induced Dyskinesias in MPTP Monkeys. *Cells* 2022;11(22):

**Agents:** 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine **Vehicle:** Not Stated; **Route:** SC; **Species:** Monkey; **Strain:** Cynomolgus; **Pump:** Not Stated; **Duration:** 24 hours;

**ALZET Comments:** Dose (0.5 mg/24 h); animal info (Female; Ovariectomized; Monkey; 9.2-12.7 years old; Weighed 3.6-5.2 kg); behavioral testing (Motor responses); 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine aka MPTP;



**Q10310:** J.-M. Renko, *et al.* Neuroprotective Potential of a Small Molecule RET Agonist in Cultured Dopamine Neurons and Hemiparkinsonian Rats. *Journal of Parkinson's Disease* 2021;11(3):1023-1046

**Agents:** BT44; Neurotrophic factor, glial cell-line derived **Vehicle:** PBS; Propylene glycol; **Route:** CSF/CNS; **Species:** Rat; **Strain:** C57BL/6J; BALB/c; **Pump:** 2002; **Duration:** 14 days;

**ALZET Comments:** Dose: BT44 (1 ug/24 h); (0.3 ug/24 h); Controls received mp w/ vehicle; animal info; and BALB/c mice 6–8 week old female; post op. care: buprenorphine; 0.05 mg/kg; Temgesic®, 0.3 mg/ml; Carprofen 5 mg/kg. Additional doses of buprenorphine and carprofen were given 1 day after the surgeries; behavioral testing: Rotational assay; Cylinder test; BT44 is a RET agonist, GDNF aka glial line-derived neurotrophic factor; (Alzet Brain infusion kit no. 2, Durect, USA) used; Brain coordinates (bregma A/P + 0.2; L/M –3.0;D/V –5.0mm); dental cement used; polycarboxylate cement;

**Q10297:** Z. Ou, *et al.* NLRP3 Inflammasome Inhibition Prevents alpha-Synuclein Pathology by Relieving Autophagy Dysfunction in Chronic MPTP-Treated NLRP3 Knockout Mice. *Molecular Neurobiology* 2021;58(4):1303-1311

**Agents:** MPTP **Vehicle:** Saline; **Route:** IP; **Species:** Mice; **Strain:** (NLRP3–/–) KO; Wild-type (NLRP3+/+); **Pump:** 2002; **Duration:** 28 days;

**ALZET Comments:** Dose: (40 mg/kg/day); Controls received mp w/ vehicle; animal info: Male and their counterparts (both 6–8 weeks old) in a C57BL/6; MPTP aka (1-methyl-4-phenyl-1,2,3,6-tetrahydropyridin); neurodegenerative (Parkinson's disease);

**Q10170:** S. M. Graves, *et al.* Mitochondrial oxidant stress mediates methamphetamine neurotoxicity in substantia nigra dopaminergic neurons. *Neurobiology of Disease* 2021;156(105409

**Agents:** Isradipine **Vehicle:** DMSO; PEG300; saline; **Route:** SC; **Species:** Mice; **Strain:** Wild-type, (C57/Bl6); **Pump:** 2002; **Duration:** 28 days; 14 days;

**ALZET Comments:** Dose: Isradipine (3 mg/kg/day); 50% DMSO; 15% PEG300; 0.9% Saline vehicle used; Controls received mp w/ vehicle; animal info: Male mice; Brain coordinates (coordinates: AP: -3.05, ML: 1.20, and DV -4.30.); neurodegenerative

**R0403:** A. des Rieux. Stem Cells and Their Extracellular Vesicles as Natural and Bioinspired Carriers for the Treatment of Neurological Disorders. *Current Opinion in Colloid & Interface Science* 2021;54(**Agents:** Not Stated **Vehicle:** Not Stated;

**Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 2 weeks;

**ALZET Comments:** Different EV and cell administration routes to the nervous system (p.17) fig. 6; neurodegenerative

**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; **Strain:** Not Stated; **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))"