



**Recent References (2018-2020) on Extended Duration Studies  
Using ALZET® Osmotic Pumps**

- Q8628:** A. Levit, *et al.* Hypertension and Pathogenic hAPP Independently Induce White Matter Astrocytosis and Cognitive Impairment in the Rat. *Front Aging Neurosci* 2020;12(82)  
**Agents:** Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **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; Angiotensin II aka Ang II; cardiovascular;
- Q8618:** J. Kwun, *et al.* Cultured thymus tissue implantation promotes donor-specific tolerance to allogeneic heart transplants. *JCI Insight* 2020;5(11):  
**Agents:** Cyclosporine A **Vehicle:** Not stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 4 months;  
**ALZET Comments:** Dose (2.5 mg/kg/d); animal info (LW (RT-1l) and BN (RT-1n) rats); pumps replaced every month; Cyclosporine A aka CsA; immunology;
- 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<sup>-/-</sup> and C57BL/6J mice); pumps replaced every 4 weeks; Beta-hydroxybutyrate aka B-OHB; neurodegenerative (Alzheimer's Disease);
- Q8572:** E. Kim, *et al.* Preventative, but not post-stroke, inhibition of CD36 attenuates brain swelling in hyperlipidemic stroke. *J Cereb Blood Flow Metab* 2020;40(4):885-894  
**Agents:** salvianolic acid B **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** Not stated; **Duration:** 8 weeks;  
**ALZET Comments:** Dose (100 mg/kg/day); Controls received mp w/ vehicle; animal info (Six-week-old ApoE KO mice); pumps replaced every 4 weeks; salvianolic acid B aka SAB; neurodegenerative (Stroke);
- Q8603:** D. Kerkhofs, *et al.* Pharmacological depletion of microglia and perivascular macrophages prevents Vascular Cognitive Impairment in Ang II-induced hypertension. *Theranostics* 2020;10(21):9512-9527  
**Agents:** Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2006; **Duration:** 12 weeks;  
**ALZET Comments:** Dose (1 ug/kg/min); Controls received mp w/ vehicle; animal info (3 month old male Tg mice); pumps replaced every 12 weeks; Blood pressure measured via tail-cuff; Angiotensin II aka Ang II; cardiovascular;
- Q8467:** E. Fielder, *et al.* Anti-inflammatory treatment rescues memory deficits during aging in nfkb1(-/-) mice. *Aging Cell* 2020;19(10):e13188  
**Agents:** Ibuprofen **Vehicle:** PEG; DMSO; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 2 months;  
**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. *Neurobiol Dis* 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);
- Q8439:** T. Develi, *et al.* Preventive and therapeutic effects of relaxin on bisphosphonate-related osteonecrosis of the jaw: an experimental study in rats. *Brazilian Dental Science* 2020;23(1):  
**Agents:** Relaxin **Vehicle:** Saline; **Route:** IP; **Species:** Rat; **Pump:** Not stated; **Duration:** 12 weeks;



**ALZET Comments:** Dose (0.17 µg/hr); Controls received mp w/ vehicle; animal info (Sprague Dawley rats); pumps replaced every 4 weeks; long-term study; dependence;

**Q7642:** W. Yan, *et al.* Treatment with a brain-selective prodrug of 17beta-estradiol improves cognitive function in Alzheimer's disease mice by regulating klf5-NF-kappaB pathway. *Naunyn Schmiedebergs Arch Pharmacol* 2019;392(7):879-886

**Agents:** dihydroxyestra-1,4-dien-3-one, 10β,17β- **Vehicle:** propylene glycol; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 8 weeks;

**ALZET Comments:** Dose (2 µg/day); Controls received sham surgery and mp w/ vehicle; animal info (6 months, female, Tg2576); behavioral testing (Morris Water Maze); pumps replaced every 4 weeks; 17beta-dihydroxyestra-1,4-diene-3-one (DHED) is a brain-selective prodrug of 17beta-estradiol; neurodegenerative (Alzheimer's); replacement therapy (estradiol); treatment groups received bilateral ovariectomies; Therapeutic indication (hinder the progression of AD and improving cognitive functions through inhibiting klf5-NF-κB pathway and restraining oxidative and inflammatory stress in the hippocampus);

**Q7560:** K. P. Melo, *et al.* Mild Exercise Differently Affects Proteostasis and Oxidative Stress on Motor Areas During Neurodegeneration: A Comparative Study of Three Treadmill Running Protocols. *Neurotox Res* 2019;35(2):410-420

**Agents:** Rotenone **Vehicle:** DMSO, Polyethylene glycol; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 4 weeks; 8 weeks; **ALZET Comments:** Dose (1 mg/kg/day); 50% DMSO:50% PEG used; Controls received mp w/ vehicle; animal info (Male, Lewis, 8 or 9 months old); pumps replaced every 4 weeks; spinal cord injury; neurodegenerative (Motorcortex);

**Q8282:** C. S. McAlpine, *et al.* Sleep modulates haematopoiesis and protects against atherosclerosis. *Nature* 2019;566(7744):383-387

**Agents:** Hypocretin-1 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not stated; **Duration:** 8 weeks; **ALZET Comments:** Dose (50 nmol/h/kg); Controls received mp w/ vehicle; pumps replaced every 4 weeks; Hypocretin-1 aka HCRT-1; cardiovascular;

**Q7531:** R. M. Lataro, *et al.* Chronic Treatment With Acetylcholinesterase Inhibitors Attenuates Vascular Dysfunction in Spontaneously Hypertensive Rats. *American Journal of Hypertension* 2019;32(6):579-587

**Agents:** Pyridostigmine Bromide; Donepezil **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 16 weeks; **ALZET Comments:** Dose (Pyridostigmine bromide at 1.5 mg/kg/day; Donepezil at 1.4 mg/kg/day); animal info (5 week old male SHR and Wistar Kyoto rats); pumps replaced every 4 weeks; long-term study; enzyme inhibitor (Pyridostigmine Bromide inhibits plasma acetylcholinesterase activity; Donepezil inhibits brain acetylcholinesterase activity); cardiovascular; Four pump replacements were performed; BP measured via Tail-cuff method;

**Q7616:** A. Kurdi, *et al.* Everolimus depletes plaque macrophages, abolishes intraplaque neovascularization and improves survival in mice with advanced atherosclerosis. *Vascul Pharmacol* 2019;113(70-76

**Agents:** everolimus **Vehicle:** DMSO; propylene glycol; ethanol, buffered; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 12 weeks;

**ALZET Comments:** "Dose (1.5 mg/kg/day); 50% DMSO, 40% propylene glycol, 10% absolute ethanol supplemented with 0.4 µl/ml Tween 20 used; animal info (6 weeks, female, ApoE(-/-)Fbnl(C1039G+/-)); pumps replaced every 4 weeks; long-term study; cardiovascular; ""Four out of 12 control animals died abruptly during the experiment, which is a phenomenon that started at 21 weeks of WD (corresponding with 9 weeks of treatment with vehicle solution)."" p.72; Therapeutic indication (stabilizes atherosclerotic plaques and reduce atherosclerosis-driven complications such as cardiac hypertrophy and fibrosis, brain hypoxia and sudden death); "

**Q7618:** M. Koshibu, *et al.* Antiatherogenic effects of liraglutide in hyperglycemic apolipoprotein E-null mice via AMP-activated protein kinase-independent mechanisms. *American Journal of Physiology Gastrointestinal and Liver Physiology* 2019;316(5):E895-E907

**Agents:** liraglutide; dorsomorphin **Vehicle:** Saline; **Route:** SC; **Species:** Mice (hyperglycemic); **Pump:** 1002; **Duration:** 4 weeks;



**ALZET Comments:** Dose ((liraglutide 17, 107 nmol/kg/day), (dorsomorphin 52.9 μmol/kg/day); Controls were normoglycemic and received mp w/ vehicle; animal info (20 week, male, ApoE<sup>-/-</sup>); pumps replaced every 2 weeks; liraglutide is a Glucagon-like peptide-1 receptor agonist; dorsomorphin is an enzyme inhibitor (AMPK); cardiovascular; Therapeutic indication (AMPK-independent anti-atherogenic effects through reduced lipid deposition);

**Q8316:** D. Knappe, *et al.* Continuous Subcutaneous Delivery of Proline-Rich Antimicrobial Peptide Api137 Provides Superior Efficacy to Intravenous Administration in a Mouse Infection Model. *Front Microbiol* 2019;10(2283

**Agents:** Api137 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2001D; **Duration:** 48 hours;

**ALZET Comments:** Dose (6.4, 12.8, and 19.2 mg/kg/h); dose-response (tolerance study); 0.9% saline used; animal info (Female CD-1 mice, 18–26 g.); functionality of mp verified by residual volume; pumps replaced after 48 hours; apidaecin derivative aka Api137; peptides;

**Q8220:** D. V. Keulen, *et al.* Oncostatin M reduces atherosclerosis development in APOE<sup>\*3</sup>Leiden.CETP mice and is associated with increased survival probability in humans. *PLoS One* 2019;14(8):e0221477

**Agents:** Murine Oncostatin M **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 16 weeks;

**ALZET Comments:** Dose (10 or 30 μg/kg/day); Controls received mp w/ vehicle; animal info (female APOE3Leiden.CETP transgenic mice (10–15 weeks of age)); pumps replaced every 5.5 weeks; long-term study; Murine Oncostatin M aka Murine OSM; cardiovascular;

**Q7626:** S. Kalavalapalli, *et al.* Impact of exenatide on mitochondrial lipid metabolism in mice with nonalcoholic steatohepatitis. *J Endocrinol* 2019;241(3):293-305

**Agents:** exenatide **Vehicle:** Saline, DMSO Buffered; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 8 weeks;

**ALZET Comments:** Dose (30 μg/kg/day); 10% DMSO in saline used; Controls received mp w/ vehicle; animal info (7 weeks, male, C57BL/6); pumps replaced every 4 weeks; Exenatide (Exe) is a GLP-1 receptor agonist; pump model not stated but maximum use duration listed at 4 weeks; Therapeutic indication (may improve nonalcoholic steatohepatitis as it ameliorates mitochondrial TCA cycle flux while decreasing insulin resistance, steatosis and hepatocyte lipotoxicity);

**Q8033:** E. Heikkila, *et al.* The plant product quinic acid activates Ca(2+) -dependent mitochondrial function and promotes insulin secretion from pancreatic beta cells. *Br J Pharmacol* 2019;176(17):3250-3263

**Agents:** Quinic acid **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not stated; **Duration:** 12 weeks;

**ALZET Comments:** Dose (75 mg/kg/day); Controls received mp w/ vehicle; animal info (12 weeks old, Male, C57BL/6N); pumps replaced every ? weeks; Multiple pumps per animal (); long-term study; Quinic acid aka QA ; dependence;

**Q7526:** A. B. Hawkey, *et al.* Paternal nicotine exposure in rats produces long-lasting neurobehavioral effects in the offspring. *Neurotoxicol Teratol* 2019;74(106808

**Agents:** Nicotine **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 56 days;

**ALZET Comments:** Dose (2 mg/kg/day); Controls received mp w/ vehicle; animal info (Male, Sprague Dawley, 200-250 g); behavioral testing (Housing and behavioral test, Elevated plus maze test, Figure 8 apparatus test); pumps replaced every 4 weeks; dependence;

**Q7525:** C. Hartmann, *et al.* Angiotensin II-induced hypertension increases the mutant frequency in rat kidney. *Archives of Toxicology* 2019;93(7):2045-2055

**Agents:** Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2004, 2006; **Duration:** 20 weeks;

**ALZET Comments:** Dose (400 ug/kg/day); Controls received mp w/ PBS; animal info (5-8 weeks old, Male); pumps replaced every 7 weeks; long-term study; cardiovascular;

**Q8002:** X. Gao, *et al.* Interaction of N-acetyl-seryl-aspartyl-lysyl-proline with the angiotensin-converting enzyme 2-angiotensin-(1-7)-Mas axis attenuates pulmonary fibrosis in silicotic rats. *Exp Physiol* 2019;104(10):1562-1574

**Agents:** Antifibrotic peptide acetyl-seryl-aspartyl-lysyl-proline **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 8 weeks;



**ALZET Comments:** Dose (800 mg/kg/day); 0.9% Saline used; Controls received mp w/ vehicle; animal info (Male, Wistar, 3 week sold, 80 g); pumps replaced every 4 weeks; Antifibrotic peptide acetyl-seryl-aspartyl-lysyl-proline aka Ac-SDKP ; peptides; cardiovascular;

**Q7996:** J. C. B. Ferreira, *et al.* A selective inhibitor of mitofusin 1-betaIIIPKC association improves heart failure outcome in rats. *Nat Commun* 2019;10(1):329

**Agents:** Global  $\beta$ IIIPKC inhibitor; TAT47–57-SAM $\beta$ A peptide Mfn1- $\beta$ IIIPKC inhibitor **Vehicle:** Not stated; **Route:** SC; **Species:** Rat; **Pump:** Not stated; **Duration:** 6 weeks;

**ALZET Comments:** Dose (3 mg/kg/day); animal info (Male); pumps replaced every 2 weeks; cardiovascular;

**Q7990:** J. Ezpeleta, *et al.* Production of seedable Amyloid-beta peptides in model of prion diseases upon PrP(Sc)-induced PDK1 overactivation. *Nat Commun* 2019;10(1):3442

**Agents:** BX912 **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** Not stated;

**ALZET Comments:** Dose (5 mg/kg/day); 1% used; animal info (Male, C57BL/6J, 8 weeks old); pumps replaced every 4 weeks; PDK1 inhibitor aka BX912 ; enzyme inhibitor (PDK1 inhibitor); neurodegenerative (Cruetzfeldt-Jakob, Gertsman-Strasussler-Scheinker disease);

**Q7282:** D. A. Duricki, *et al.* Stroke Recovery in Rats after 24-Hour-Delayed Intramuscular Neurotrophin-3 Infusion. *Annals of Oncology* 2019;85(1):32-46

**Agents:** Neurotrophin-3, recomb. human **Vehicle:** Saline; bovine serum, albumin; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 4 weeks;

**ALZET Comments:** Dose (100  $\mu$ g/ml); 0.1% bovine serum albumin used; Controls received mp w/ vehicle; animal info (Lister Hooded outbred female rats, ~4 months old, 200-300g); pumps replaced every 2 weeks; ischemia (ischemic stroke); no stress (see pg. 34); Pumps made MRI compatible

**Q7275:** A. N. Cheema, *et al.* Nicotine impairs intra-substance tendon healing after full thickness injury in a rat model. *J Orthop Res* 2019;37(1):94-103

**Agents:** Nicotine **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 3 months;

**ALZET Comments:** Dose (61 mg/mL); Controls received mp w/ vehicle; animal info (adult male Sprague-Dawley rats 400-450g); pumps replaced every 4 weeks;

**Q7949:** E. Butti, *et al.* Neural Stem Cells of the Subventricular Zone Contribute to Neuroprotection of the Corpus Callosum after Cuprizone-Induced Demyelination. *J Neurosci* 2019;39(28):5481-5492

**Agents:** ganciclovir **Vehicle:** water, double distilled; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 4 weeks;

**ALZET Comments:** Dose (100 mg/kg/d); Controls were WT and received mp w/ agent; animal info (6-8 weeks, female, C57BL/6 and NestinTK); pumps replaced every 2 weeks; neurodegenerative (multiple sclerosis);

**Q8163:** Z. Bao, *et al.* Promotion of microglial phagocytosis by tuftsin stimulates remyelination in experimental autoimmune encephalomyelitis. *Mol Med Rep* 2019;20(6):5190-5196

**Agents:** Tuftsin **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** Not stated; **Duration:** 28 days;

**ALZET Comments:** Dose (0.25 ml/h); Controls received mp w/ vehicle; animal info (adult (8-9 weeks old and 18-20 g) female c57Bl/6 mice); pumps replaced on day 15; neurodegenerative (determine if the effect of microglia could promote the recovery of EAE and attenuate symptoms in EAE);

**Q7370:** B. Balla, *et al.* Long-term selective estrogen receptor-beta agonist treatment modulates gene expression in bone and bone marrow of ovariectomized rats. *J Steroid Biochem Mol Biol* 2019;188(185-194

**Agents:** Diarylpropionitrile **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 84 days;

**ALZET Comments:** Dose (20  $\mu$ g/day); Controls received mp w/ vehicle; animal info (Female, Harlan-Wistar, 8 months old); pumps replaced every 4 weeks; dependence;

**Q6879:** B. Badzyska, *et al.* Evidence against a crucial role of renal medullary perfusion in blood pressure control of hypertensive rats. *J Physiol* 2019;597(1):211-223



**Agents:** Angiotensin II; bradykinin **Vehicle:** Saline; **Route:** SC; kidney (left renal medulla); **Species:** Rat; **Pump:** 2002;  
**Duration:** 14 days; 28 days;

**ALZET Comments:** Dose (Angiotensin II (35µg/kg/d), bradykinin (0.27 mg/kg/hr; animal info (S-D rats (n = 16), aged 12 weeks, weighing 280–340 g); pumps replaced every 2 weeks; ALZET microcannula set used; cardiovascular; “Extending bradykinin-induced medullary vasodilatation over 2weeks was evenmore challenging:we found that this can indeed be accomplished by chronic intramedullary infusion of Bk using implanted osmotic minipumps.” P.219

**Q7366:** G. Aubertin, *et al.* Effects of imidazoline-like drugs on liver and adipose tissues, and their role in preventing obesity and associated cardio-metabolic disorders. *Int J Obes (Lond)* 2019;

**Agents:** LNP599 **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 12 weeks;

**ALZET Comments:** Dose (10 mg/kg/day); animal info (Male, 12 week old, Zucker); pumps replaced every 4 weeks; LNP599 aka 3-chloro-2-methyl-phenyl)-(4-methyl-4,5-dihydro-3H-pyrrol-2-yl)-amine hydrochloride); enzyme inhibitor (selective agonists of the sympatho-inhibitory I1 imidazoline receptors (LNP ligands)); cardiovascular

**Q7161:** X. Yu, *et al.* Zinc Metallochaperones Reactivate Mutant p53 Using an ON/OFF Switch Mechanism: A New Paradigm in Cancer Therapeutics. *Clin Cancer Res* 2018;24(18):4505-4517

**Agents:** Zinc metallochaperone 1 **Vehicle:** DMSO; **Route:** IV (jugular); **Species:** Mice (nude); **Pump:** 2001; **Duration:** 7, 17 days;

**ALZET Comments:** Dose (1 mg/kg/d); Controls received mp w/ vehicle; animal info (8-12 week old mice); pumps replaced after 1 week; comparison of IV bolus injection vs continuous pump infusion; half-life: <30 min (p. 4505); cancer (therapeutics);

**Q7324:** J. Yang, *et al.* Inhibition of the CD36 receptor reduces visceral fat accumulation and improves insulin resistance in obese mice carrying the BDNF-Val66Met variant. *J Biol Chem* 2018;293(34):13338-13348

**Agents:** Salvionolic acid B **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 8 weeks;

**ALZET Comments:** Dose (50 mg/kg/day); Controls received mp w/ vehicle; animal info (C57BL/6, 6-weeks old, control 23.9 +/- 0.5 g, SAB treatment 23.3 +/- 0.6 g); pumps replaced after 4 weeks; stability verified by (measured effect of neutralized SAB on macrophage oxLDL uptake);

**Q7542:** Q. Wu, *et al.* Human menstrual blood-derived stem cells promote functional recovery in a rat spinal cord hemisection model. *Cell Death & Disease* 2018;9(9):882

**Agents:** TrkB-IgG; immunoglobulin G, human **Vehicle:** PBS; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 2002; **Duration:** 4 weeks;

**ALZET Comments:** Dose (3 µg/day); Controls received mp w/ vehicle; animal info (adult, female, Sprague-Dawley, 220-250g); behavioral testing (BBB locomotion scale); pumps replaced at 3 weeks; enzyme inhibitor (BDNF-TrkB signaling); spinal cord injury;

**Q7269:** A. Vujic, *et al.* Exercise induces new cardiomyocyte generation in the adult mammalian heart. *Nat Commun* 2018;9(1):1659

**Agents:** Thymidine, 15-; Radio-isotope **Vehicle:** 15N tracer; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 8 weeks;

**ALZET Comments:** Dose (20 ug/h); animal info (2 months old, C57Bl/6, male); pumps replaced weekly for 8 weeks; cardiovascular;

**Q7312:** N. Tsuburaya, *et al.* A small-molecule inhibitor of SOD1-Derlin-1 interaction ameliorates pathology in an ALS mouse model. *Nat Commun* 2018;9(1):2668

**Agents:** SOD1-Derlin-1 inhibitor #56-40, SOD1-Derlin-1 inhibitor #56-59 **Vehicle:** DMSO; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Pump:** 2006; **Duration:** 58 weeks;

**ALZET Comments:** Dose (1 mM #56-40 or 3 mM #56-59); Controls received mp w/ vehicle; animal info (22 weeks, male, C57BL/6); behavioral testing (rotarod performance); behavioral testing (rotarod performance); pumps replaced every 6 weeks until mouse showed paralysis onset; long-term study; stability verified by (in-vitro immunoprecipitation assay); 3-Amino-N-(4-pyridyl)-6-(3-pyridyl)thieno[2,3-b]pyridine-2-carboxamide aka #56-40;



N-Allyl-3-amino-N-phenyl-6-(pyridin-3-yl)thieno[2,3-b]pyridine-2-carboxamide aka #56-59; enzyme inhibitor (SOD1-Derlin-1 interaction); ALZET brain infusion kit 3 used; neurodegenerative (Amyotrophic lateral sclerosis);

**Q7245:** M. Tsoli, *et al.* Dual targeting of mitochondrial function and mTOR pathway as a therapeutic strategy for diffuse intrinsic pontine glioma. *Oncotarget* 2018;9(7541-7556

**Agents:** Temsirolimus; Phenylarsonous acid, 4-(N-(S-penicillaminylacetyl)-amino) **Vehicle:** Saline; **Route:** SC, IP; **Species:** Mice; **Pump:** 2002; **Duration:** 4 weeks;

**ALZET Comments:** Dose (PEMAO-3 mg/kg/day, Temsirolimus-10 mg/kg/day and 5 mg/kg/day); Controls received mp w/ vehicle; animal info (5 week-old, female, NOD/SCID); pumps replaced every 2 weeks;

4-(N-(S-penicillaminylacetyl)-amino)phenylarsonous acid aka Anti-cancer compound (PENAO); enzyme inhibitor (PENAO Inhibits adenine nucleotide translocase, Temsirolimus inhibits mTOR; cancer (Glioma); );

**Q7875:** A. E. Tschiffely, *et al.* An exploratory investigation of brain-selective estrogen treatment in males using a mouse model of Alzheimer's disease. *Horm Behav* 2018;98(16-21

**Agents:** estradiol, 17-beta-; DHED **Vehicle:** PEG; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 8 weeks;

**ALZET Comments:** Dose ((E2 2 µg/day), (DHED 2 µg/day)); Controls received mp w/ vehicle; animal info (5.5-6 months, male, C57BL/6 and APP<sup>swE</sup>/PS1<sup>dE9</sup>); behavioral testing (radial-arm water maze); pumps replaced every 4 weeks;

10beta,17beta-dihydroxyestra-1,4-dien-3-one (DHED) is a brain-selective prodrug of E2; neurodegenerative (Alzheimer's); pump model not stated but flow rate listed as 0.025 µL/min; Therapeutic indication (DHED-based estrogen treatment shown to decrease APP and Aβ peptide levels concomitantly improving learning in male animals at an early stage of the neuropathology.);

**Q7311:** L. J. Trigiani, *et al.* Pleiotropic Benefits of the Angiotensin Receptor Blocker Candesartan in a Mouse Model of Alzheimer Disease. *Hypertension* 2018;72(5):1217-1226

**Agents:** Candesartan **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 2 months;

**ALZET Comments:** Dose (1 mg/kg per day,); 25% DMSO used; 25% DMSO used; animal info (male and female, C57BL6 mice with APP mutations, 3-4 months old); behavioral testing (Morris water maze); pumps replaced at 34 days;

comparison of oral delivery via drinking water vs mp; neurodegenerative (Alzheimer disease); "It is thus possible that delivery of candesartan through osmotic minipumps (cohort 1) compared with drinking water (cohort 2) allowed for better control of drug concentration and steady-state levels that conferred a better drug efficacy despite a shorter treatment, " pg. 1224;

**Q7306:** M. L. Sulciner, *et al.* Resolvins suppress tumor growth and enhance cancer therapy. *J Exp Med* 2018;215(1):115-140

**Agents:** Resolvin D1, Resolvin D2, Resolvin E1, Annexin V recombinant protein, **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (SCID); **Pump:** pump model not stated; **Duration:** 28 days, 2 and 3 months;

**ALZET Comments:** Dose: Resolvins (15 ng/d), Annexin V recombinant protein (4 µg/kg/d); Controls received mp w/ vehicle; animal info (C57BL/6J, SCID); pumps replaced after 14 days for the 28 day studies and every 28 days for the 2 and 3 month studies; cancer (prostate);

**Q7154:** S. R. Subramaniam, *et al.* Chronic nicotine improves cognitive and social impairment in mice overexpressing wild type alpha-synuclein. *Neurobiol Dis* 2018;117(170-180

**Agents:** Nicotine **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 1 or 6 months;

**ALZET Comments:** Dose (0.4 mg/kg/h and 2.0 mg/kg/h); dose-response (); dose-response (); pumps replaced every 4 weeks; long-term study; stress/adverse reaction: Mice treated with the higher nicotine dose (2.0 mg/kg/h) lost weight after surgery and 50% died after one week. This was as a result of combined toxic effects of isoflurane and a higher dose of nicotine. Therefore, pentobarbital was used instead of isoflurane for induction of anesthesia, which reduced the mortality rate and improved weight gain in the higher dose group. (see pg. 172);

**Q7047:** M. Shi, *et al.* Cisplatin nephrotoxicity as a model of chronic kidney disease. *Lab Invest* 2018;98(8):1105-1121

**Agents:** αKlotho protein, recomb. **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 20 weeks;

**ALZET Comments:** Dose (0.3 mg/kg/month); Controls received mp w/ vehicle; pumps replaced every 4 weeks; long-term study; Therapeutic indication (Acute kidney injury);



**Q6895:** Y. Sato, *et al.* Inhibitory effects of vasostatin-1 against atherogenesis. *Clinical Science* 2018;132(23):2493-2507

**Agents:** Vasostatin-1 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (knockout); **Pump:** 1002; **Duration:** 4 weeks;  
**ALZET Comments:** Dose (0, 45, 90 ng/kg/min); animal info (male spontaneously hyperlipidemic ApoE<sup>-/-</sup> mice); pumps replaced every 2 weeks; cardiovascular;

**Q7298:** K. Sato, *et al.* Adropin Contributes to Anti-Atherosclerosis by Suppressing Monocyte-Endothelial Cell Adhesion and Smooth Muscle Cell Proliferation. *Int J Mol Sci* 2018;19(5):

**Agents:** Adropin **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 4 weeks;  
**ALZET Comments:** Dose (0, 5, and 10 µg/kg/h); Controls received mp w/ vehicle; animal info (male, 17 weeks, ApoE<sup>-/-</sup>); pumps replaced every 2 weeks; cardiovascular; Adropin is a peptide hormone expressed in liver and brain;

**Q7299:** K. Sato, *et al.* Anti-Atherogenic Effects of Vaspin on Human Aortic Smooth Muscle Cell/Macrophage Responses and Hyperlipidemic Mouse Plaque Phenotype. *Int J Mol Sci* 2018;19(6):

**Agents:** Vaspin **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 4 weeks;  
**ALZET Comments:** Dose (0, 50, 100 µg/mouse); animal info (male, 17 weeks, ApoE<sup>-/-</sup>); pumps replaced every 2 weeks; Vaspin (visceral adipose tissue-derived serine protease inhibitor) is a 45.2-kDa adipocytokine; enzyme inhibitor (serine protease); cardiovascular;

**Q7861:** S. Ruoss, *et al.* Inhibition of calpain delays early muscle atrophy after rotator cuff tendon release in sheep. *Physiol Rep* 2018;6(21):e13833

**Agents:** calpeptin **Vehicle:** DMSO; **Route:** intramuscular (infraspinatus); **Species:** Sheep; **Pump:** 2ML4; **Duration:** 6 weeks;  
**ALZET Comments:** Dose (0.75 mg/day); animal info (26.7±1.4 months, female, Swiss Alpine); pumps replaced at 2 weeks; calpeptin is a synthetic calpain inhibitor; enzyme inhibitor (calpain); tissue perfusion (m. infraspinatus); good methods (detailed pump implantation procedure on page 3.); Therapeutic indication (calpain inhibition prevented the early unloading adaptations, but not the subsequent initiation of rotator cuff disease); 75% DMSO used;

**Q7847:** A. Ramadan, *et al.* Loss of vascular smooth muscle cell autophagy exacerbates angiotensin II-associated aortic remodeling. *J Vasc Surg* 2018;68(3):859-871

**Agents:** angiotensin II **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 4, 12 weeks;  
**ALZET Comments:** Dose (1.5mg/kg/d); Controls received mp w/ agent; animal info (8-14 weeks, male, SMC-ATG7-KO or SMC-ATG7-WT); pumps replaced every 4 weeks; cardiovascular;

**Q7053:** K. R. Qurania, *et al.* Systemic inhibition of Janus kinase induces browning of white adipose tissue and ameliorates obesity-related metabolic disorders. *Biochemical and Biophysical Research Communications* 2018;502(1):123-128

**Agents:** Tofacitinib **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 10 weeks;  
**ALZET Comments:** Dose (100 µg/day); Controls received mp w/ vehicle; animal info (C57BL6 mice); pumps replaced every 35 days; long-term study; tofacitinib is a JAK3 inhibitor; enzyme inhibitor (JAK3)

**Q7735:** E. H. Phillips, *et al.* Angiotensin II Infusion Does Not Cause Abdominal Aortic Aneurysms in Apolipoprotein E-Deficient Rats. *J Vasc Res* 2018;55(1):1-12

**Agents:** Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 28 days; 8 weeks;  
**ALZET Comments:** Dose (200 ng/kg/min); animal info ((9 weeks old: 315 ± 12.9g; 217 g; 224 g; 319 ± 7.8g)(28 weeks: 493 ± 40.2g)); behavioral testing (tail-cuff to measure BP); pumps replaced every 4 weeks weeks; cardiovascular;

**Q8307:** G. Oldani, *et al.* Chimeric liver transplantation reveals interspecific graft remodelling. *J Hepatol* 2018;69(5):1025-1036

**Agents:** Tacrolimus **Vehicle:** Not stated; **Route:** SC; **Species:** Mice and Rat; **Pump:** 1002 or 2002; **Duration:** 14 days or 28 days;  
**ALZET Comments:** Dose (0.3, 0.6, or 1.2 mg/kg); animal info (C57BL/6J, 23-31 g, Male; Lewis. Male, 47-60 g); pumps replaced every 2 weeks; dependence;



**Q7249:** L. Nusrat, *et al.* Cyclosporin A-Mediated Activation of Endogenous Neural Precursor Cells Promotes Cognitive Recovery in a Mouse Model of Stroke. *Front Aging Neurosci* 2018;10(93)

**Agents:** Cyclosporin A **Vehicle:** Ethanol, Cremaphor; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 4-49 days; **ALZET Comments:** Dose (15 mg/kg/day); ; animal info (adult male C57BL/6 mice 6–8 weeks of age; 20–25 g); pumps replaced; ischemia (cerebral); 65% ethanol and 35% cremaphor used

**Q7210:** M. Maier, *et al.* A human-derived antibody targets misfolded SOD1 and ameliorates motor symptoms in mouse models of amyotrophic lateral sclerosis. *Sci Transl Med* 2018;10(470):

**Agents:** miSOD1, alpha- **Vehicle:** PBS; **Route:** CSF/CNS (left ventricle); **Species:** Mice; **Pump:** 1004; **Duration:** 20, 30, 40, 55, 70, 80 days;

**ALZET Comments:** Dose (0.1 mg/kg/day); Controls received mp w/ vehicle; animal info (Mice, 60 days of age); pumps replaced every 28 days; ALZET brain infusion kit used; neurodegenerative (amyotrophic lateral sclerosis); Therapeutic indication (amyotrophic lateral sclerosis);

**Q8100:** M. Lorenzo Pisarello, *et al.* Combination of a Histone Deacetylase 6 Inhibitor and a Somatostatin Receptor Agonist Synergistically Reduces Hepatorenal Cystogenesis in an Animal Model of Polycystic Liver Disease. *Am J Pathol* 2018;188(4):981-994

**Agents:** Pasireotide **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 6 weeks;

**ALZET Comments:** Dose (20 ug/kg/day); Controls received mp w/ vehicle; animal info (PCK, 4-5 weeks old); pumps replaced every 2 weeks; dependence;

**Q7772:** B. Liu, *et al.* ALDH2 protects against alcoholic cardiomyopathy through a mechanism involving the p38 MAPK/CREB pathway and local renin-angiotensin system inhibition in cardiomyocytes. *Int J Cardiol* 2018;257(150-159)

**Agents:** Alda-1; Daidzin **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice; **Pump:** 2004; **Duration:** 2 months;

**ALZET Comments:** Dose ((Alda-1 10mg/kg/day), (Daidzin 50 mg/kg/day)); Controls received mp w/ vehicle; animal info (8 weeks, male, C57BL/6J); pumps replaced every 4 weeks; Alda-1 is an ALDH2 activator; Daidzin is an enzyme inhibitor (aldehyde dehydrogenase 2); cardiovascular; Vehicle control was used but identity of vehicle not stated;

**Q7198:** O. Le, *et al.* INK4a/ARF Expression Impairs Neurogenesis in the Brain of Irradiated Mice. *Stem Cell Reports* 2018;10(6):1721-1733

**Agents:** Porphyrin-based superoxide dismutase mimetic (MnHex) **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 8 weeks;

**ALZET Comments:** Dose (450 ug/kg/day); pumps replaced every 4 weeks; Porphyrin-based potent superoxide dismutase mimetic aka (Mn(III) meso-tetrakis-(n-hexylpyridinium-2-yl) porphyrin (MnTnHex-2-PyP5+ ); neurodegenerative (Ionizing radiation);

**Q8056:** D. Kumar, *et al.* Chronic hyperinsulinemia promotes meta-inflammation and extracellular matrix deposition in adipose tissue: Implications of nitric oxide. *Mol Cell Endocrinol* 2018;477(15-28)

**Agents:** Insulin **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not stated; **Duration:** 8 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (8-10 weeks old, 20-24 g, C57BL/6J, Male); pumps replaced every 4 weeks; diabetes;

**Q7079:** B. Kuhn, *et al.* Anti-inflammatory nitro-fatty acids suppress tumor growth by triggering mitochondrial dysfunction and activation of the intrinsic apoptotic pathway in colorectal cancer cells. *Biochemical Pharmacology* 2018;155(48-60)

**Agents:** Nitrooleate, 9- **Vehicle:** PEG 400, ethanol; **Route:** SC; **Species:** Mice (SCID); **Pump:** 2001; **Duration:** 5 days;

**ALZET Comments:** Dose (16 mg/kg/day); 10% ethanol and 90% PEG400 used; animal info (5–6 week old SCID mice); pumps replaced after 7 days; 9-NOA is a Nitro-fatty acids; cancer (colorectal); “we have chosen a continuous application of NFAs via ALZET® osmotic pumps giving the advantage of a reduction of interindividual variations in mice due to a diverse oral chow consumption behavior and therefore kept the number of animals needed as low as possible.” pg. 57; Due to poor solubility of 9-NOA and limited pump size in consequence of the weight of the mice, pumps were surgically removed and replaced with new ones on day 8 of the experiment;





**Q7010:** O. S. Kornfeld, *et al.* Interaction of mitochondrial fission factor with dynamin related protein 1 governs physiological mitochondrial function in vivo. *Sci Rep* 2018;8(1):14034

**Agents:** P259-TAT **Vehicle:** TAT control peptide; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 8 weeks; 12 weeks; **ALZET Comments:** Dose (3 mg/Kg/day); Controls received mp w/ vehicle; animal info (5-week old R6/2 HD and wild-type mice); pumps replaced every 4 weeks; long-term study;

**Q7189:** A. U. Joshi, *et al.* Inhibition of Drp1/Fis1 interaction slows progression of amyotrophic lateral sclerosis. *EMBO Molecular Medicine* 2018;10(3):

**Agents:** P110-TAT (47-57) **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 28 day pump; **Duration:** 60 days; **ALZET Comments:** Dose (3 mg/kg/day); animal info (4–6 weeks old AdultB6SJL Tg (SOD1G93A) 1 Gur/J male mice); behavioral testing (Activity chamber); pumps replaced after 30 days; long-term study; P110 is a selective peptide inhibitor of Drp1/Fis1; neurodegenerative (amyotrophic lateral sclerosis); neurodegenerative (amyotrophic lateral sclerosis); stress/adverse reaction: (see pg. 14 );

**Q7758:** B. M. Inouye, *et al.* Diabetic bladder dysfunction is associated with bladder inflammation triggered through hyperglycemia, not polyuria. *Res Rep Urol* 2018;10(219-225

**Agents:** phlorizin **Vehicle:** propylene glycol; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 11 weeks; **ALZET Comments:** Dose (120 mg/kg/day); 40% w/v of agent in propylene glycol used; Controls received mp w/ agent; animal info (4 weeks, female, C57BL/6 or Akita); pumps replaced every 4 weeks; phlorizin is an inhibitor of sodium-glucose linked transporter types 1 and 2 that prevents glucose reabsorption in the kidney; enzyme inhibitor (sodium-glucose linked transporter types 1 and 2 (SGLT1 and SGLT2)); diabetes; Therapeutic indication (normalized serum glucose in diabetic-prone mice while increasing the urine output and reducing inflammation in the bladder);

**Q7185:** S. E. Iismaa, *et al.* Cardiac hypertrophy limits infarct expansion after myocardial infarction in mice. *Sci Rep* 2018;8(1):6114

**Agents:** Uridine, 5-bromo-2'-deoxy **Vehicle:** DMSO, Water; **Route:** SC; **Species:** Mice; **Pump:** 2002, 2006; **Duration:** 9 days and 12 weeks; **ALZET Comments:** Dose (10 mg/kg/day); 50% DMSO/water used; animal info (16 weeks old male mice); post op. care (bupivacaine, 8 mg/kg, buprenorphine, 0.075 mg/kg); Model 2006 pumps replaced after 6 weeks; long-term study; 5-bromo-2'-deoxyuridine aka BrdU; cardiovascular;

**Q7183:** P. Huehnchen, *et al.* Fingolimod therapy is not effective in a mouse model of spontaneous autoimmune peripheral polyneuropathy. *Sci Rep* 2018;8(1):5648

**Agents:** Fingolimod **Vehicle:** Saline; **Route:** IP; **Species:** Mice; **Pump:** 1004; **Duration:** 8 weeks; **ALZET Comments:** Dose (1 mg/kg/day); Controls received mp w/ vehicle; animal info (CD86-/- non-obese diabetic (NOD) mice); pumps replaced every 4 weeks; long-term study; Fingolimod is a sphingosine-1-phosphate analogue; neurodegenerative (autoimmune polyneuropathy); stress/adverse reaction: (see pg. 2);

**Q7911:** K. Hirota, *et al.* Exogenous C-type natriuretic peptide restores normal growth and prevents early growth plate closure in its deficient rats. *PLoS One* 2018;13(9):e0204172

**Agents:** Peptide 53, C-type natriuretic **Vehicle:** acetate buffer; benzyl alcohol; purified sucrose; **Route:** SC; **Species:** Rat; **Pump:** 1002; **Duration:** 4 weeks; **ALZET Comments:** Dose (0.15, 0.5 mg/kg/day); 0.03 M acetate buffer (pH 4.0), 1% benzyl alcohol, and 10% purified sucrose used; Controls received mp w/ vehicle; animal info (4 weeks, male and female, WT or CNP-KO); pumps replaced every 2 weeks; CNP-53 is an endogenous 53-amino acid form of CNP; peptides;

**Q7910:** S. Hiratsuka, *et al.* Drug therapy targeting pyrophosphate slows the ossification of spinal ligaments in twy mice. *J Orthop Res* 2018;36(4):1256-1261

**Agents:** Levamisole hydrochloride; sodium pyrophosphate decahydrate **Vehicle:** Propylene Glycol; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 4 weeks; **ALZET Comments:** Dose (Levamisole 5 mg/kg/d), (PPi 160 μmolg/kg/d)); Controls received mp w/ vehicle; animal info (5 weeks, male, Twy); pumps replaced every 2 weeks; sodium pyrophosphate decahydrate used as a source of exogenous PPi;



levamisole is an enzyme inhibitor (alkaline phosphatase); "However, owing to the short half-life of PPI, exogenous PPI therapy could not maintain the activity when preserved in the osmotic minipump in our preliminary study (data not shown) and therefore be considered ineffectual in sufficiently maintaining the concentration of PPI to inhibit OSL." p.1260; Therapeutic indication (increased serum PPI level in the twy mouse model of OSL, which slowed the progression of OSL without producing adverse effect on bone.);

**Q7179:** Y. Henning, *et al.* Retinal S-opsin dominance in Ansell's mole-rats (*Fukomys anelli*) is a consequence of naturally low serum thyroxine. *Sci Rep* 2018;8(1):4337

**Agents:** Thyroxine, 3,5,3'-triiodothyronine **Vehicle:** NaOH, propylenglycol, PBS; **Route:** SC; **Species:** Rat (mole); **Pump:** 2006; **Duration:** 12 weeks;

**ALZET Comments:** Dose (90 ng/g of T4, 2 ng/g of T3); 15 mM NaOH, 50% propylenglycol and PBS containing 5% BSA used; Controls received mp w/ vehicle; animal info (Ansell's mole rats, mean age  $2.6 \pm 0.92$  years); post op. care (Carprofen, 5 mg/kg for at least 3 days; animals were isolated for 24–48 h for recovery then housed as family group); pumps replaced every 6 weeks; long-term study; "Osmotic pumps deliver the test agents with a constant flow rate, thus being well-suited for long-term hormone treatments" pg. 9 ;

**Q7902:** B. Giam, *et al.* Serelaxin attenuates renal inflammation and fibrosis in a mouse model of dilated cardiomyopathy. *Experimental Physiology* 2018;103(12):1593-1602

**Agents:** Serelaxin **Vehicle:** Sodium Acetate; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 8 weeks;

**ALZET Comments:** Dose (500 ug/kg/day); Controls received mp w/ vehicle; animal info (Male, 18 weeks old); pumps replaced every 4 weeks; cardiovascular;

**Q7139:** Y. Gao, *et al.* The histone methyltransferase DOT1L inhibits osteoclastogenesis and protects against osteoporosis. *Cell Death & Disease* 2018;9(2):33

**Agents:** EPZ5676 **Vehicle:** DMSO, Water; **Route:** SC; **Species:** Mouse; **Pump:** 2006, 2002; **Duration:** 8 weeks;

**ALZET Comments:** Dose (1.6 mg/d); 50% DMSO used; Controls received mp w/ vehicle; animal info (Eight-week-old, female, FVB/N); Model 2006 pumps replaced with Model 2002 after six weeks; long-term study; EPZ5676 aka small molecule inhibitor; gene therapy;

**Q7813:** T. Fuhrmann, *et al.* Combined delivery of chondroitinase ABC and human induced pluripotent stem cell-derived neuroepithelial cells promote tissue repair in an animal model of spinal cord injury. *Biomedical Research* 2018;13(2):024103

**Agents:** Cyclosporin A **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; 2ML4; **Duration:** 2 weeks; 8 weeks;

**ALZET Comments:** Dose (10 mg/kg/day); animal info (female, Sprague-Dawley, 300g); post op. care (Buprenorphine (0.05 mg/kg) every 12 h for 48 h); behavioral testing (BBB locomotor rating scale, ladder walk test); pumps replaced every 4 weeks; spinal cord injury; mp used to deliver cyclosporin A to aid transplant survival, implanted one day prior to cell transplantation.;

**Q7810:** W. R. Fitzgibbon, *et al.* Attenuation of accelerated renal cystogenesis in Pkd1 mice by renin-angiotensin system blockade. *American Journal of Physiology Renal Physiology* 2018;314(2):F210-F218

**Agents:** Aliskiren **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks, 8 weeks;

**ALZET Comments:** Dose (20 mg/kg/day); Controls received mp w/ vehicle; animal info (4-6 weeks, male and female, Pkd1 conditional floxed-allele); post op. care (buprenorphine every 12 h until recovered fully); pumps replaced every 4 weeks; For the 8-wk study, 5 of the 13 control mice died before the treatments were completed (Fig. 2A). In contrast, 2 of 9 Agt-ASO and 1 of 8 AliskirenAgt ASO treated mice died. However, the survival curves did not differ between the three groups. All the mice that died before the end of the 8-wk treatment period were found to have large cystic kidneys." p.F212;

**Q5587:** Y. Fang, *et al.* The adhesion and migration of microglia to beta-amyloid (A $\beta$ ) is decreased with aging and inhibited by Nogo/NgR pathway. *J Neuroinflammation* 2018;15(1):210

**Agents:** NEP1-40 **Vehicle:** PBS, DMSO; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice (transgenic); **Pump:** 2004; **Duration:** 2 months;



**ALZET Comments:** Dose (500  $\mu$ M); Dose (500  $\mu$ M); 2.5% DMSO used; animal info (6 month old APP/PS1 transgenic mice); pumps replaced after 28 days; NEP1-40 is a competitive antagonist of Nogo/NgR pathway; ALZET brain infusion kit 2 used; neurodegenerative (Alzheimer's);

**Q7802:** D. A. Duricki, *et al.* Corticospinal neuroplasticity and sensorimotor recovery in rats treated by infusion of neurotrophin-3 into disabled forelimb muscles started 24 h after stroke. *bioRxiv* 2018;

**Agents:** Neurotrophin-3, human recombinant **Vehicle:** saline, BSA buffered; **Route:** Intramuscular (triceps brachii); **Species:** Rat; **Pump:** 2ML2; **Duration:** 4 weeks;

**ALZET Comments:** Dose (12  $\mu$ g/day at 5  $\mu$ l/hour); saline with 0.1% bovine serum albumin used; Controls received sham surgery; animal info (4 months, female, Lister hooded, 200-300g); behavioral testing (cylinder test, adhesive patch test, horizontal ladder, grip strength test, cold allodynia test); pumps replaced every 2 weeks; ischemia (sensorimotor recovery after ischemic cortical stroke);

**Q7124:** M. Cusimano, *et al.* Selective killing of spinal cord neural stem cells impairs locomotor recovery in a mouse model of spinal cord injury. *J Neuroinflammation* 2018;15(1):58

**Agents:** Ganciclovir **Vehicle:** Water; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 28 days;

**ALZET Comments:** Dose (100 mg/kg/day); animal info (NestinTK); pumps replaced every 2 weeks; neurodegenerative (Spinal Chord);

**Q7103:** A. Calevro, *et al.* Effects of chronic antipsychotic drug exposure on the expression of Translocator Protein and inflammatory markers in rat adipose tissue. *Psychoneuroendocrinology* 2018;95(28-33

**Agents:** Haloperidol, olanzapine **Vehicle:** Cyclodextrin, 2-Hydroxypropyl-B-; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 8 weeks;

**ALZET Comments:** Dose (Haloperidol- 2mg/ kg/ day, Olanzapine-10 mg/kg/ day ); Controls received mp w/ vehicle; animal info (10-week old, male, Sprague-Dawley, 240–250 g); pumps replaced every 4 weeks; long-term study; dependence;

**Q7101:** M. W. Burke, *et al.* Perinatal MAO Inhibition Produces Long-Lasting Impairment of Serotonin Function in Offspring. *Brain Research Reviews* 2018;8(6):

**Agents:** Clorgyline, deprenyl, L- **Vehicle:** Saline; **Route:** SC; **Species:** Mice (pregnant); **Pump:** 1002, 2004; **Duration:** 6 weeks;

**ALZET Comments:** Dose (0.25 mg/kg/day-deprenyl, 1 mg/kg/day-clorgyline, or both); 0.9% saline used; Controls received mp w/ vehicle; animal info (Male, MAO-A/B knockout); behavioral testing (Locomotor test); Model 1002 pumps replaced with Model 2004 pumps on E17; MOA aka Monoamine oxidase; enzyme inhibitor (clorgyline, L-deprenyl ); dependence;