Recent References (2017-Present) on Transplantation Research Using ALZET® Osmotic Pumps

**Agents:** Uridine, bromodeoxy-
**Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 2 weeks;
**ALZET Comments:** Dose: (50 μg per day); animal info: 8- to 10-week-old female and male mice WT background; bromodeoxyuridine aka (BrdU); cardiovascular

**Q10200:** A. Jacob, *et al.* Human adrenomedullin and its binding protein attenuate tissue injury and inflammation following hepatic ischemia reperfusion in rabbits. Heliyon 2021;7(8):e07845
**Agents:** Adrenomedullin
**Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Rabbit; **Pump:** Not Stated; **Duration:** 20 hours;
**ALZET Comments:** Dose: (12 μg/kg)Controls received mp w/ vehicle; animal info: New Zealand white rabbits (4-month old males weighing approximately 3.0 kg); post op. care: buprenorphine; Adrenomedullin aka (AM) is a 52 amino-acid peptide; ischemia (Hepathic ischemia reperfusion);

**Agents:** Cyclosporine A; Candesartan; Celecoxib
**Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 3 weeks;
**ALZET Comments:** Dose: Cyclosporine (25 mg/kg); Candesartan (5 mg/kg); Celecoxib ((50 mg/kg) Controls received mp w/ vehicle; animal info: Adult (10 to 12 weeks) male Wistar rats; Cyclosporine A aka (CsA); Candesartan aka (RAS); Celecoxib aka (COX-2);

**Agents:** DMG; Varenicline; Trigonelline
**Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;
**ALZET Comments:** Dose (DMG 100 mg/kg/day; Varenicline 0.5 mg/kg/day; Trigonelline 70 mg/kg/day); dose-response (weight change during smoke exposure and cessation graph d pg 15); (weight change in HFD-fed mice administered with PBS or nicotine graph j page 18); Controls received mp w/ vehicle; control mice received mp w/ PBS; animal info (8-week old male mice, fed a high-fat or normal chow diet, exposed to cigarette smoke and given 4 antibiotics through their drinking water); Resultant plasma level (plasma DMG levels in HFD-fed mice exposed to smoke reduced after antibiotic treatment); (higher plasma DMG levels in HFD-fed mice that received FMT from donors that underwent cessation of smoke exposure; dependence;

**Q10113:** P. Bonilla, *et al.* Human-Induced Neural and Mesenchymal Stem Cell Therapy Combined with a Curcumin Nanoconjugate as a Spinal Cord Injury Treatment. International Journal of Molecular Sciences 2021;22(11):
**Agents:** Polyacetal-curcumin nanoconjugate
**Vehicle:** Saline; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 1007D; **Duration:** 7 days;
**ALZET Comments:** Saline 0.9% vehicle used; Controls received mp w/ vehicle; animal info: Female Sprague–Dawley weighing 300g; post op. care: buprenorphine; behavioral testing: open-field BBB locomotor scale and video-based system for automated gait analysis; PA-C aka polyacetal-curcumin nonconjugate; spinal cord injury

**Agents:** CVT2584
**Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Pump:** Not Stated; **Duration:** 16 days;
**ALZET Comments:** Dose (2.5 mg/kg/hour); Controls received mp w/ vehicle; animal info (Transplanted BALB/c or C57BL/6 mice); CVT2584 aka CDK2 inhibitor; cancer (cancer therapy; MYC-driven tumors);

**Agents:** Platelet-derived growth factor, human recombinant; Epidermal Growth Factor; Basic fibroblast growth factor, recominant human; **Vehicle:** Not Stated; **Route:** CSF/CNS (spinal cord); **Species:** Rat;

**ALZET Comments:** Dose (1 ug/ml Platelet-derived growth factor, human recombinant; 30 ug/ml Epidermal Growth Factor; 30 ug/ml Basic fibroblast growth factor, recominant human); Controls received mp w/ vehicle; animal info (female Wistar rats (250 g); Platelet-derived growth factor, human recominant aka PDGF-AA; Epidermal Growth Factor aka EGF; Basic fibroblast growth factor, recominant human aka bFGF; spinal cord injury;


**Agents:** Tacrolimus **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 15 days;

**ALZET Comments:** Dose (1.5 mg/kg body weight); animal info (Adult male BALB/c mice (6–7 weeks old, 17–22 g)); pumps replaced every 13 days; immunology;

Q9566: H. Xu, et al. Limited efficacy of rapamycin monotherapy in vascularized composite allotransplantation. Transplant Immunology 2020;61(101308

**Agents:** Rapamycin; Tacrolimus **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 28 days;

**ALZET Comments:** Dose (0.5-2 mg/kg/day Rapamycin; 2 mg/kg/day Tacrolimus); animal info (Inbred male mice); Rapamycin aka RPM, Tacrolimus aka FK506; cardiovascular;

Q9560: J. Xiao, et al. Experimental abdominal aortic aneurysm growth is inhibited by blocking the JAK2/STAT3 pathway. International Journal of Cardiology 2020;312(100-106

**Agents:** Angiotensin II **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 28 days;

**ALZET Comments:** Dose (1000 ng/kg/min); 0.5% DMSO used; Controls received mp w/ vehicle; animal info (Sixteen-week-old male ApoE−/-- mice weighing 25 to 30 g); Angiotensin II aka Ang II; cardiovascular;


**Agents:** Rapamycin **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Pump:** Not Stated; **Duration:** 4 weeks;

**ALZET Comments:** Dose (2 mg/kg/d); animal info (WT BALB/c and WT C57BL/6 mice, 8-12 weeks old); dependence;


**Agents:** Cyclosporine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 28 days;

**ALZET Comments:** Dose (15 mg/ kg/d); animal info (spastic Han Wistar rat); behavioral testing (Motor Activity Testing); pumps replaced every 23 days; gene therapy;


**Agents:** Imatinib **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (Pathogen-free, male C57BL/6 and Balb/c mice, 20-24 g); Imatinib aka GNP-HClm; toxicology;


**Agents:** C-peptide **Vehicle:** Saline; **Route:** Abdomen; **Species:** Rat; **Pump:** 2ML4; **Duration:** 4 weeks;

**ALZET Comments:** Dose (50 pmol/kg/min); Controls received mp w/ vehicle; animal info (male Sprague–Dawley rats, 180-200 g); diabetes;
Agents: Angiotensin II Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 2004; Duration: 4 weeks;
ALZET Comments: Dose (1 ug/kg/min); animal info (Male, 8-week-old mice); Angiotensin II aka Ang II; cardiovascular;

Q9275: M. Honda, et al. Inhibition of receptor activity-modifying protein 1 suppresses the development of endometriosis and the formation of blood and lymphatic vessels. Journal of Cellular and Molecular Medicine 2020;24(20):11984-11997
Agents: CGRP8-37 Vehicle: Saline; Route: SC; Species: Mice; Pump: Not Stated; Duration: 14 days;
ALZET Comments: Dose (80 ug/d); Controls received mp w/ vehicle; animal info (Female C57BL/6 WT mice (8-week-old)); CGRP8-37 aka Calcitonin gene-related peptide antagonist; peptides; dependence;

Agents: Isoproterenol Vehicle: Not stated; Route: SC; Species: Mice; Pump: 2004; Duration: 4 weeks;
ALZET Comments: Dose (30 mg/kg/day); animal info (adult (10-week-old) PLN-R14Δ/+ mice); cardiovascular;

Agents: Adrenomedulin Vehicle: Saline; Route: SC; Species: Rat; Pump: 2004; Duration: 4 weeks;
ALZET Comments: Dose (300 ng/kg/hour); Controls received mp w/ vehicle; animal info (male Sprague-Dawley rats, 200-250 g); Adrenomedulin aka ADM; dependence;

Agents: Tacrolimus Vehicle: Saline; Route: SC; Species: Mice; Pump: 1004; Duration: 4 weeks;
ALZET Comments: Dose (0.25 mg/kg/day); Controls received mp w/ vehicle; animal info (Male NSG mice, age 12–18 weeks); Tacrolimus aka TAC; dependence;

Agents: Warfarin Vehicle: PBS; Route: SC; Species: Mice; Pump: Not Stated; Duration: Not Stated;
ALZET Comments: Dose (0.5 mg/kg/d or 0.05 mg/kg/d);

Agents: Integrin antagonist Vehicle: DMSO; Route: SC; Species: Mice; Pump: Not Stated; Duration: 4 weeks;
ALZET Comments: Dose (100 mg/kg/day); 50% DMSO used; Controls received mp w/ vehicle; animal info (C57BL/6J, 5 weeks old, Male); Integrin antagonist aka CWHM-12; dependence;

Agents: Integrin antagonist Vehicle: DMSO; Route: SC; Species: Mice; Pump: Not Stated; Duration: 4 weeks;
ALZET Comments: Dose (100 mg/kg/day); 50% DMSO used; Controls received mp w/ vehicle; animal info (C57BL/6J, 5 weeks old, Male); Integrin antagonist aka CWHM-12; dependence;

Agents: Propanoic acid, (3S)-3-(3-bromo-5-(tert-butyl)phenyl)-3-(2-(3-hydroxy-5-((5-Hydroxy-1,4,5,6-tetrahydropyrimidin-2-yl)amino)benzamido)acetamido) Vehicle: DMSO, Water; Route: SC; Species: Mice; Pump: Not Stated; Duration: 4 weeks;
ALZET Comments: Dose (100 mg/kg/day); 50% DMSO used; animal info (C57BL/6J 5-week-old male mice); enzyme inhibitor (integrin inhibitor); Therapeutic indication (nonalcoholic steatohepatitis; liver fibrosis);
**Agents:** Follicle stimulating hormone, recomb. human  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 2002;  
**Duration:** 2 weeks;  
**ALZET Comments:** Dose (5 IU/day); Controls received sham surgery; animal info (7-9 weeks, male, C57BL/6Law and nude); replacement therapy (FSH);

Q8814: L. E. Ragle, et al. Long-label-retaining mammary epithelial cells are created early in ductal development and distributed throughout the branching ducts. Mechanisms of Development 2019;159(103565
**Agents:** 5-bromodeoxyuridine  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** Not Stated;  
**Duration:** 14 days;  
**ALZET Comments:** Dose (0.1 mg); animal info (3 weeks old); 5-bromodeoxyuridine aka 5BrdU; dependence;

**Agents:** Cyclosporine A  
**Vehicle:** Ethanol, Cremophor;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML4;  
**Duration:** 56 days;  
**ALZET Comments:** Dose (15 mg/kg/day); animal info (Male, Sprague-Dawley rats, 350 g); post op. care (3 mg/kg- ketoprofen); behavioral testing (Montoya staircase and tapered beam test); long-term study; ischemia (stroke);

**Agents:** Acetate; Butyrate  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 2001;  
**Duration:** 7 days;  
**ALZET Comments:** Dose (1 ul/h); Controls received mp w/ vehicle; animal info (Male, 10 week old, C57BL/6J); dependence;

**Agents:** Tacrolimus  
**Vehicle:** Not stated;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** Not stated;  
**Duration:** 7 days;  
**ALZET Comments:** Dose (0.5 mg/kg/day); animal info (C57BL/6 male mice, 10 weeks old, 20-25 g); cardiovascular;

**Agents:** Soluble Nogo66 receptor-Fc protein  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 1003D;  
**Duration:** 3 days;  
**ALZET Comments:** Dose (400 ug/kg); Controls received mp w/ vehicle; animal info (Sprague Dawley, 250-350 g, 10-12 weeks old); behavioral testing (Morris Water Maze Test); Soluble Nogo66 receptor-Fc protein aka sNgR-Fc; ischemia (Stroke);

**Agents:** Porphyromonas gingivalis lipopolysaccharide  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1002, 2004;  
**Duration:** 2, 4 weeks;  
**ALZET Comments:** Dose (2 ug/day); Controls received mp w/ vehicle; animal info (6 or 13 months old); ALZET brain infusion kit 3 used; bilateral cannula used; cyanoacrylate adhesive; neurodegenerative (Alzheimer’s Disease);

Q8737: V. Hartwig, et al. Human skin-derived ABCB5(+) stem cell injection improves liver disease parameters in Mdr2KO mice. Archives of Toxicology 2019;93(9):2645-2660
**Agents:** Tacrolimus  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1002, 2004;  
**Duration:** 2, 4 weeks;  
**ALZET Comments:** Dose (1 mg/kg/day); 0.9% Saline used; Controls received mp w/ vehicle; animal info (Balb/c, 16 weeks old);

**Agents:** Testosterone  
**Vehicle:** Not stated;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** Not stated;  
**Duration:** 3-4 weeks;

**ALZET Comments:** Dose (1.875 g/hour); animal info (Male, C57BL6);

---


**Agents:** Uridine, 5-bromo-2’-deoxy-; Uridine, 5-Ethynyl-2’-deoxy-; Uracil, 5-fluoro-  
**Vehicle:** Water, Deionized, DMSO buffered;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** Not stated;  
**Duration:** 7, 25, 28 days;

**ALZET Comments:** Dose ((BrdU 50 mg/kg/day), (EdU 50 mg/kg/day), (5-FU 15 mg/kg/day)); 50% deionized water and 50% DMSO used; Controls received mp w/ vehicle; animal info (12 weeks, male, C57BL/6J, Tg-myh6(MCM), and Tg-myh6MCM: R26(mT-mG/+)); cardiovascular; mp used for BrdU and EdU labeling or for ISO + 5-FU induced cardiomyopathy;

---


**Agents:** Cyclosporin A  
**Vehicle:** Ethanol, Cremophor buffered;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1002;  
**Duration:** 1, 2 weeks;

**ALZET Comments:** Dose (10 mg/kg/day); 65% ethanol: 35% Cremaphor used; Controls received mp w/ vehicle; animal info (8 weeks, Shi(−/−)); mp with CsA used to induce immunosuppression in Shiverer mice;

---


**Agents:** Rapamycin  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** Not Stated;  
**Duration:** 28 days;

**ALZET Comments:** Dose (2 mg/kg/day); Controls did not receive mp; animal info (male, C57BL/6 and BALB/c); comparison of IP injection of FK506 vs mp; immunology; RPM monotherapy was about as effective as post-Tx IL-2C in prolonging survival. Co-administration of IL-2C and post-Tx RPM had additional benefits, with pre-Tx IL-C plus RPM causing a fivefold increase in survival, and post-Tx IL-2C plus RPM causing a threefold increase in survival;

---


**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;

---


**Agents:** acetylneuraminic acid, 2,3-dehydro-2-deoxy-N-  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 2004;  
**Duration:** 6 weeks;

**ALZET Comments:** Dose (0.06 μg/h); Controls received mp w/ vehicle; animal info (8 months, male, Apoe/-/-); enzyme inhibitor (sialidase); cardiovascular;

---


**Agents:** Tacrolimus  
**Vehicle:** Serum, physiological;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 2004;  
**Duration:** 28 days;

**ALZET Comments:** Dose (1 mg/kg/d); Controls received mp w/ vehicle; animal info (4 weeks, male, CD-1, 30-40g); enzyme inhibitor (Calcineurin); toxicology; Tacrolimus actively participates to chronic allograft dysfunction through miR-21-5p modulation;

**Agents:** Platelet-Derived Growth Factor, Epidermal Growth Factor, Basic Fibroblast Growth Factor  
**Vehicle:** Platelet-Derived Growth Factor, Epidermal Growth Factor, Basic Fibroblast Growth Factor  
**Route:** CSF/CNS(Intrathecal)  
**Species:** Rat  
**Pump:** 1007D  
**Duration:** 7 days  
**ALZET Comments:** Dose (PDGF-AA, 1 μg/100 μL; EGF, 3 μg/100 μL; bFGF, 3 μg/100mL); 0.1% rat serum albumin used; animal info (female Wistar rats 250 g); post op. care (moxfloxacin, buprenorphine); spinal cord injury;


**Agents:** Cyclosporine A  
**Vehicle:** Saline  
**Route:** SC  
**Species:** Rat  
**Pump:** 2ML4  
**Duration:** 7 days  
**ALZET Comments:** Dose (15 mg/kg/day); Controls received mp w/ vehicle; animal info (10 weeks old, Male, Sprague Dawley); post op. care (ketoprofen); Cyclosporine A aka CsA; neurodegenerative (Stroke);


**Agents:** Angiotensin II  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Mice (knockout)  
**Pump:** Not Stated  
**Duration:** 14 days  
**ALZET Comments:** Dose (0.8, 1.5, or 3 mg/kg/day); animal info (BMT or non BMT male mice); cardiovascular;


**Agents:** Tlr4 competitive inhibitor  
**Vehicle:** Not stated  
**Route:** SC  
**Species:** Mice  
**Pump:** 2004  
**Duration:** 2 weeks  
**ALZET Comments:** Dose (15 mg/kg/week); animal info (Male, C57BL/6J); CyP aka cyanobaceterial LPS-like Tlr4 inhibitor; enzyme inhibitor (Tlr4 inhibitor); ischemia (liver);


**Agents:** Tacrolimus  
**Vehicle:** Not stated  
**Route:** SC  
**Species:** Mice; 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;


**Agents:** Fibroblast growth factor 21, mouse recomb.  
**Vehicle:** Saline  
**Route:** SC  
**Species:** Mice  
**Duration:** 4 weeks  
**ALZET Comments:** Dose (0.1 mg/kg/day); Controls received mp w/ vehicle; animal info (8 week old, FGF21KO); Resultant plasma level (1.5 ng/ml, which was 2–3 times of the 8-week HFD-induced endogenous FGF21 level of 0.6 ng/ml (Fig. 3f)); dependence;


**Agents:** Bone marrow Stromal Cells  
**Vehicle:** Saline  
**Route:** CSF/CNS (lateral ventricle)  
**Species:** Rat  
**Pump:** Not Stated  
**Duration:** 2 weeks  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (Sprague Dawley, Female, 8 week old); Bone marrow stromal cells aka BMSCs; Brain coordinates (3mm caudal to bregma and 2mm to the left of midline); bilateral cannula used; spinal cord injury;


**Agents:** Insulin, recomb. human  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Rat  
**Pump:** Not Stated  
**Duration:** 3-5 days  
**ALZET Comments:** Dose ((female 1.5-2.0 U/day), (males 3.0-4.5 U/day)); Controls consisted of rats that did not become diabetic during the initial study period; animal info (male and female, BioBreeding diabetes-prone); Multiple pumps per animal (2 if hyperglycemic state observed. see p.4); comparison of macrobead implant vs mp; diabetes; Pilot study for CGM calibration 3-5 days followed by 1 or 3 month study using microbeads. Pump models not stated but duration length was listed at 7 or 14 days;
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.;

Q7808: S. Fabiano, et al. Functional Gut Microbiota Remodeling Contributes to the Caloric Restriction-Induced Metabolic Improvements. Cell Metabolism 2018;28(6):907-921 e7 Agents: lipopolysaccharide Vehicle: Not stated; Route: SC; Species: Mice; Pump: 2004; Duration: 28 days; ALZET Comments: Dose (200, 300 μg/kg/day); Controls received ad libitum diet and mp w/ agent; animal info (8 weeks, male, C57BL/10J, C57BL/10ScNJ, or C57BL/6JR); Lipopolysaccharides (LPS) from Escherichia coli 0127:B8;

Q7128: L. Detti, et al. Xenotransplantation of pre-pubertal ovarian cortex and prevention of follicle depletion with anti-Mullerian hormone (AMH). J Assist Reprod Genet 2018;35(10):1831-1841 Agents: anti-Müllerian hormone, recomb. Vehicle: Saline; Route: IP; Species: Mice (nude); Pump: 1002; Duration: 2 weeks; ALZET Comments: Dose (1.23 ug/d); Controls received mp w/ vehicle; animal info (10-week-old NU/J mice, or nude mice,); functionality of mp verified by residual volume;

Q7790: A. Citro, et al. Anti-Inflammatory Strategies in Intrahepatic Islet Transplantation: A Comparative Study in Preclinical Models. Transplantation 2018;102(2):240-248 Agents: Reparixin Vehicle: Not Stated; Route: SC; Species: Mice; Pump: Not Stated; Duration: 7 days; ALZET Comments: Dose (5.4 mg/h/kg); animal info (Male, C57BL/6, Balb/c, 8-9 weeks old, 24-6 g ); Reparixin aka CXCR1/2 inhibitor; enzyme inhibitor (CXCR1/2 inhibitor); diabetes;

Q7097: A. Alastrue-Agudo, et al. FM19G11 and Ependymal Progenitor/Stem Cell Combinatory Treatment Enhances Neurolonal Preservation and Oligodendrogenesis after Severe Spinal Cord Injury. Int J Mol Sci 2018;19(5):1539 Agents: FM19G11 Vehicle: DMSO; Route: CSF/CNS (intrathecal); Species: Rat; Pump: 1007D; Duration: 3 days; ALZET Comments: Controls received mp w/ vehicle; animal info (2-month-old Sprague Dawley rats weighing ~200 g); FM19G11 is an inhibitor of Hypoxia inducible factor-alpha protein expression; spinal cord injury;

Q5919: K. M. Williams, et al. FLT3 ligand regulates thymic precursor cells and hematopoietic stem cells through interactions with CXCR4 and the marrow niche. Experimental Hematology 2017;52(40-49 Agents: FLT3L, recombinant human Vehicle: Not Stated; Route: Not Stated; Species: Mice; Pump: Not Stated; Duration: 7 days; ALZET Comments: Controls received mp w/ PBS; animal info (male, C57BL/6(B6)-Ly5.1 or B6, post-pubertal); Dose (5 ug/day);

Q5695: T. L. Uhrendorf, et al. Efficacy of Two Delivery Routes for Transplanting Human Neural Progenitor Cells (NPCs) Into the Spastic Han-Wistar Rat, a Model of Ataxia. Cell Transplantation 2017;26(2):259-269 Agents: Cyclosporine Vehicle: Not Stated, Route: SC; Species: Rat; Pump: 2004; Duration: Not Stated; ALZET Comments: animal info (spastic Han-Wistar, 30 days); no stress (see pg. 268); behavioral testing (locomotor activity); cardiovascular;"This method of chronic delivery prevents painful daily injection and subsequent behavioral changes in treated animals. We did not detect any negative effects of cyclosporine, and no behavioral alterations were observed in treated mutants other than natural disease progression" pg 268; Dose (15 mg/kg/day);

Q6772: S. Seiler, et al. Antagonization of the Nogo-Receptor 1 Enhances Dopaminergic Fiber Outgrowth of Transplants in a Rat Model of Parkinson’s Disease. Front Cell Neurosci 2017;11(151 Agents: NEP1-40 Vehicle: Saline; Route: CSF/CNS (right lateral ventricle); Species: Rat; Pump: 2ML2; Duration: 2 weeks; ALZET Comments: Dose (75 mg/kg/day); Controls received mp w/ vehicle; animal info (Adult female hemi-parkinsonian Wistar rats); ALZET brain infusion kit 2 used; Brain coordinates (posterior 0.8 mm, lateral 1.6 mm and 3.5 mm ventral to the dura, the incisor bar was set at 0.0 mm.); neurodegenerative (Parkinson’s disease);
**Agents:** Angiotensin II  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Mice  
**Pump:** 2004  
**Duration:** 28 days  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (ApoE 12-14 weeks old); cardiovascular; immunology; peptides; BP measured using tail cuff; Dose (1000 ng/kg/min);

**Agents:** SYL-001, ARL67156 Trisodium Salt  
**Vehicle:** Propylene Glycol  
**Route:** Not Stated  
**Species:** Mouse  
**Pump:** 1007D  
**Duration:** Not Stated  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (8-10 weeks old); 10% Propylene Glycol; cardiovascular; enzyme inhibitor (ectonucleotide pyrophosphatase/phosphodiesterase-1 (ENPP1)); Therapeutic indication (Heart calcification); Dose (SYL-001: 10 mg/kg/day, ARL67156 Trisodium Salt: 1 mg/kg/day);

**Agents:** Cyclosporine  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Rat  
**Pump:** 2004  
**Duration:** 28 days  
**ALZET Comments:** Dose (15 mg/kg/day); animal info (30 days of age, male sHW mutant rats); neurodegenerative (replacement/augmentation);

**Agents:** Relaxin-2, recomb. human  
**Vehicle:** Saline  
**Route:** Not Stated  
**Species:** Mice  
**Pump:** Not Stated  
**Duration:** Not Stated  
**ALZET Comments:** Dose (0.5mg/kg); Controls received mp w/ vehicle; animal info (wild type or B6.126-Ptger2tm1Brey/J C57BL/6J mice); cardiovascular;

**Agents:** Isoproterenol; Metoprolol  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Mice  
**Pump:** Not Stated  
**Duration:** 3 days  
**ALZET Comments:** Dose (Isoproterenol: 0.025 g/ml; Metoprolol: 0.0684 g/ml); animal info (CD1 and C57BL/6 (BL6) mice);

**Agents:** Vascular Endothelial Growth Factor  
**Vehicle:** Saline  
**Route:** CSF/CNS (Left Lateral Ventricle)  
**Species:** Rat  
**Pump:** Not Stated  
**Duration:** 7 days  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (17 weeks); behavioral testing (Morris water maze); Therapeutic indication (Hypoxia-inducible factor-1α Cobalt chloride Hypoxic-ischemic encephalopathy);

**Agents:** Cyclosporine  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Rat  
**Pump:** Not Stated  
**Duration:** Not Stated  
**ALZET Comments:** Dose (10 mg/kg/day); animal info (adult female Fischer 344 rats); pumps replaced every 2 weeks;