### Recent References (2017-Present) on Spinal Cord Injury Research Using ALZET® Osmotic Pumps

**Agents**: recombinant mouse Shh (Sonic Hedgehog)  
**Vehicle**: Saline;  
**Route**: SC;  
**Species**: Rat;  
**Pump**: 1007D;  
**Duration**: 7 days;  
**ALZET Comments**: 0.9% NaCl used; Controls received mp w/ vehicle; animal info (female Wistar rats, 160 g); spinal cord injury;

**Q9919**: H. Yamanaka, *et al.* Aberrant Axo-Axonic Synaptic Reorganization in the Phosphorylated L1-CAM/Calcium Channel Subunit alpha2delta-1-Containing Central Terminals of Injured c-Fibers in the Spinal Cord of a Neuropathic Pain Model. eNeuro 2021;8(2)  
**Agents**: Pregabalin  
**Vehicle**: Saline;  
**Route**: Saline;  
**Species**: Rat;  
**Pump**: 2001;  
**Duration**: 14 days;  
**ALZET Comments**: Dose (30 or 300 ug/day); Controls received mp w/ vehicle; animal info (male Sprague Dawley rats, 200–250 g); spinal cord injury;

**Q9501**: I. K. Timotius, *et al.* Combination of Defined CatWalk Gait Parameters for Predictive Locomotion Recovery in Experimental Spinal Cord Injury Rat Models. eNeuro 2021;8(2)  
**Agents**: Not stated  
**Vehicle**: Saline;  
**Route**: SC;  
**Species**: Rat;  
**Pump**: 2002;  
**Duration**: 2 weeks;  
**ALZET Comments**: Controls received mp w/ vehicle; animal info (adult female Wistar rats, 220–250 g); behavioral testing (Open Field Test); spinal cord injury;

**Agents**: Fractalkine  
**Vehicle**: CSF, artificial;  
**Route**: CSF/CNS (spinal cord);  
**Species**: Rat;  
**Pump**: 2002;  
**Duration**: 5 days;  
**ALZET Comments**: Dose (20 or 200 ng/mL); Controls received mp w/ vehicle; animal info (Adult male Sprague-Dawley rats, 300-460 g); spinal cord injury;

**Agents**: XPro1595  
**Vehicle**: CSF/CNS (spinal cord);  
**Species**: Rat;  
**Pump**: 2006;  
**Duration**: 42 days;  
**ALZET Comments**: Dose (60 ug/day); Controls received mp w/ vehicle; animal info (Adult, female Wistar rats, 225–250g); spinal cord injury;

**Agents**: Ganciclovir  
**Vehicle**: PBS;  
**Route**: SC;  
**Species**: Mice;  
**Pump**: 1004;  
**Duration**: 28 days;  
**ALZET Comments**: Dose (50 mg/ml); animal info (three-month-old female TK mice); spinal cord injury;

**Q9759**: Z. Ding, *et al.* Neuregulin-1 converts reactive astrocytes toward oligodendrocyte lineage cells via upregulating the PI3K-AKT-mTOR pathway to repair spinal cord injury. Biomedicine & Pharmacotherapy 2021;134(111168  
**Agents**: Nrg1  
**Vehicle**: Not stated;  
**Route**: SC;  
**Species**: Rat;  
**Pump**: Not Stated;  
**Duration**: Not Stated;  
**ALZET Comments**: Dose (0.3 ug/day); animal info (Female, 200-230 g); spinal cord injury;

**Q10122**: A. S. Brown, *et al.* Intrauterine Growth Restriction Causes Abnormal Embryonic Dentate Gyrus Neurogenesis in Mouse Offspring That Leads to Adult Learning and Memory Deficits. eNeuro 2021;8(5)  
**Agents**: U-46 619  
**Vehicle**: Ethanol;  
**Route**: Not Stated;  
**Species**: Mice;  
**Pump**: 1007D;  
**Duration**: Not Stated;  
**ALZET Comments**: Dose: (0.3 ug/day); animal info (Female, 200–230 g); spinal cord injury;

**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:** miR-384-5p Agomir  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** 3 days;  

**ALZET Comments:** Dose (14 nmol); animal info (Seven to eight week-old female Sprague-Dawley rats); post op. care (cefazolin); spinal cord injury;


**Agents:** Ropivacaine  
**Vehicle:** Saline;  
**Route:** CSF/CNS (sciatic nerve);  
**Species:** Rat;  
**Pump:** 2ML1;  
**Duration:** 7 days;  

**ALZET Comments:** Dose (10 μl/hour); 0.9% NaCl used; animal info (male Sprague-Dawley rats, 200–250 g, aged 6–8 weeks); spinal cord injury;


**Agents:** Platelet-derived growth factor, human recombinant; Epidermal Growth Factor; Basic fibroblast growth factor, recombinant human;  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 1007D;  
**Duration:** 7 days;  

**ALZET Comments:** Dose (1 ug/100uL Platelet-derived growth factor, human recombinant; 3 ug/100uLEpidermal Growth Factor; 3 ug/100mL Basic fibroblast growth factor, recombinant human); Controls received mp w/ vehicle; animal info (female Wistar rats, 250 g); behavioral testing (Basso-Beattie- Bresnan locomotor rating scale); Platelet-derived growth factor, human recombinant aka PDGF-AA; Epidermal Growth Factor aka EGF; Basic fibroblast growth factor, recombinant human aka bFGF; spinal cord injury;


**Agents:** Platelet-derived growth factor, human recombinant; Epidermal Growth Factor; Basic fibroblast growth factor, recombinant human;  
**Vehicle:** Not Stated;  
**Route:** CSF/CNS (spinal cord);  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** 10.1155/2020/5674921;

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


**Agents:** NgR1(310)–Fc  
**Vehicle:** Not Stated;  
**Route:** CSF/CNS (spinal cord);  
**Species:** Monkey;  
**Pump:** 2ML4;  
**Duration:** 4 months;  

**ALZET Comments:** Dose (0.10-0.17 mg/kg/day); Controls received mp w/ vehicle; animal info (Adult African green monkeys (vervets, female, baseline body weight 4.2–7.2 kg)); pumps replaced every month; long-term study; NgR1(310)–Fc aka Nogo receptor decoy protein; spinal cord injury;
Agents: Neuroleukin; GRP78; Immunoglobulin Vehicle: CSF, artificial; Route: CSF/CNS (lateral ventricle); Species: Mice; Pump: 1004; Duration: 21 days;
ALZET Comments: Dose (100 mg/ml); Controls received mp w/vehicle; animal info (Eight-week-old female ddY mice); Immunoglobulin aka IgG, GRP78 aka 78-kDa glucose regulated protein; ALZET brain infusion kit 3 used; Brain coordinates (bregma −0.22 mm, lateral to the left +1 mm and −2.5 mm depth); spinal cord injury;

Agents: Bone marrow conditioned medium; Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 1007D; Duration: 1 week;
ALZET Comments: Controls received mp w/ vehicle; animal info (Adult (6–8 weeks) female Wistar rats (weight, 200 to 250 g)); behavioral testing (Open Field Test); Bone marrow conditioned medium aka BMSC; spinal cord injury;

Agents: Antibody, anti Nogo-A monoclonal 11C7; Brain-derived neurotrophic factor Vehicle: Not stated; Route: CSF/CNS (spinal cord); Species: Monkey; Pump: 2ML2; Duration: 4 weeks;
ALZET Comments: Dose (14.8 mg anti Nogo-A monoclonal antibody 11C7; 1.4 mg Brain-derived neurotrophic factor); animal info (adult monkeys, 3.0 to 5.6 kg, 4 to 6 years old); Multiple pumps per animal (2 pumps); Brain-derived neurotrophic factor aka BDNF; spinal cord injury;

Agents: Lomerizine; YM872; oxATP Vehicle: PBS; Route: CSF/CNS; Species: Rat; Pump: 2002; Duration: 2 weeks;
ALZET Comments: Dose (); Controls received mp w/ vehicle; animal info (Female Fischer rats, 150-200 g, 12-15 weeks old); post op. care (Buprenorphine); behavioral testing (open field locomotion assessment); Lomerizine aka Lom; ALZET brain infusion kit 3 used; spinal cord injury;

Q8633: X. Li, et al. Exercise training modulates glutamic acid decarboxylase-65/67 expression through TrkB signaling to ameliorate neuropathic pain in rats with spinal cord injury. Molecular Pain 2020;16(1744806920924511)
Agents: Immunoglobulin G, TrkB Vehicle: PBS; Route: SC; Species: Rat; Pump: 2002; Duration: 2 weeks;
ALZET Comments: Animal info (adult female Sprague–Dawley rats); behavioral testing (Mechanical Nociception Assays; Thermal Nociception Assays); TrkB Immunoglobulin G aka TrkB-IgG; spinal cord injury;

Agents: MK801; TrkB-Fc Vehicle: Saline; Route: CSF/CNS (Intrathecal); Species: Mice; Rat; Pump: 1004; 2ML4; Duration: 11 days;
ALZET Comments: Dose (5 ug/day MK801; 0.2 ug/day TrkB-Fc); Controls received mp w/ vehicle; animal info (Adult male Sprague–Dawley rats, 250-300 g; Adult male mice, 6 to 7 weeks old); behavioral testing (Mechanical Nociception Assays; Thermal Nociception Assays); MK801 aka N-methyl-D-aspartate receptor antagonist; spinal cord injury;

Agents: Serp-1 Vehicle: Not stated; Route: IP; Species: Rat; Pump: 2ML1; Duration: 7 days;
ALZET Comments: Dose (0.2 mg/rat); animal info (male Long-Evans rats, 16 weeks old, 370-420 g); behavioral testing (Locomotor test; Toe-pin withdrawal test); spinal cord injury;
Q8617: J. M. Kwiecien, et al. Neuroprotective Effect of Subdural Infusion of Serp-1 in Spinal Cord Trauma. Biomedicines 2020;8(10);
Agents: Serp-1 Vehicle: Saline; Route: CSF/CNS (spinal cord); Species: Rat; Pump: 2ML1; 2ML4; Duration: 7 days; 14 days; 28 days; 56 days;
ALZET Comments: Dose (0.008 mg, 0.04, mg, 0.2 mg, 0.2 mg/week); dose-response (p. 3); animal info (male, 16 weeks old Long Evan rats, 370-410 g); spinal cord injury;

Agents: Pyruvate Kinase Isoform M2; CB-5083 Vehicle: CSF, Artificial; Route: CSF/CNS (lateral ventricle); Species: Mice; Pump: 1004; Duration: 28 days;
ALZET Comments: Dose (1 ng/ml Pyruvate Kinase Isoform M2; 100 nM CB-5083); Controls received mp w/ vehicle; animal info (eight-week-old female ddY mice); behavioral testing (Basso Mouse Scale, Toyama Mouse Score, vertical cage test); Pyruvate Kinase Isoform M2 aka PKM2; CB-5083 aka valosin-containing protein inhibitor; ALZET brain infusion kit 3 used; Brain coordinates (bregma−0.22 mm, lateral to the lef+1 mm and −2.5 mm depth); spinal cord injury;

Q10025: S. Ilari, et al. Natural Antioxidant Control of Neuropathic Pain-Exploring the Role of Mitochondrial SIRT3 Pathway. Antioxidants (Basel) 2020;9(11);
Agents: Bergamot Polyphenolic fraction; Pregabalin Vehicle: Saline; Route: SC; Species: Rat; Duration: 21 days;
ALZET Comments: Dose (25, 50, 75 mg/kg Bergamot Polyphenolic fraction; 10 mg/kg Pregabalin); 0.9% NaCl used; Controls received mp w/ vehicle; animal info (8 week old male Sprague Dawley rats, 225-250 g); behavioral testing (Mechanical allodynia, Mechanical hyperalgesia, Thermal hyperalgesia); Bergamot Polyphenolic fraction aka BPF; spinal cord injury;

Agents: Naloxone HCl Vehicle: Saline; Route: SC; Species: Mice; Pump: 1007D; Duration: 1 week;
ALZET Comments: Dose (1 mg/100 uL); 0.9% NaCl used; animal info (four-week-old male ddY-strain mice, 24 g); behavioral testing (double activity monitoring system; Von Frey Test); spinal cord injury;

Agents: Lidocaine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2ML1; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (male Sprague-Dawley rats, 200-250 g); behavioral testing (Von Frey test; Motor function assessment); spinal cord injury; Therapeutic indication (neuropathic disorders);

Agents: agomir-325-3p Vehicle: Saline; Route: CSF/CNS (spinal cord); Species: Rat; Pump: Not Stated; Duration: 7 days;
ALZET Comments: Dose (60 nmol/mL at 1 μL/h); Controls received mp w/ vehicle; animal info (male, Sprague-Dawley, 225-260g); post op. care (IM injection of 30,000-U penicillin twice/day, manual urination and defection 1–2 times/day); behavioral testing (BBB scale); agomir-325-3p is an oligonucleotide based on miR-325-3p mimics with more stable expressions of miR-325-3p; spinal cord injury; agomir-325-3p sequence is 5′-UACAG GUUAGAUGUAGUCU-3′; Therapeutic indication ("overexpression of miR-325-3p inhibited microglial activation and the release of inflammatory cytokines by inhibition of EGFR/MAPK signaling to alleviate the secondary injury after SCI." p189);

Agents: Antibody, anti-Nogo-A Route: CSF/CNS (intrathecal); Species: Rat; Pump: 2ML2; Duration: 14 days;
ALZET Comments: Dose (5 μL/h, 3 mg of antibody/ml); Controls received mp w/ inactive control antibody; animal info (4+/−1 months, female, Lewis, 210+/-20g); spinal cord injury; Pump and catheter were removed 15–16 d after implantation under 5% isoflurane; Therapeutic indication (reduction of the impairment of several key urodynamic functions such as recovery of the physiological EUS function during voiding after induced SCI);

**Agents:** Function-blocking antibodies against GDNF, IL-6, MIP-1α, IL-10; **Vehicle:** SC; **Species:** Rat; **Pump:** 1002; **Duration:** 2 weeks;

**ALZET Comments:** animal info (Sprague Dawley, Female, 180-220 g); behavioral testing (Catwalk Analysis); spinal cord injury;


**Agents:** Anti-RGMa antibody **Vehicle:** Saline; **Route:** CNS/CSF; **Species:** Monkey; **Pump:** 2ML4; **Duration:** 4 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);


**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, 3-5 years old, 2.8-5.4 kg); spinal cord injury;


**Agents:** Antibody, anti-Hyal-4; IgG **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 1004; **Duration:** 4 weeks;

**ALZET Comments:** animal info (Female Sprague–Dawley (SD) rats); spinal cord injury;


**Agents:** MitoTempo **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 3 days;

**ALZET Comments:** Dose (1 mg/kg/day); 0.9% Saline used; animal info (Female, C57BL/6, 15-20 g, 5-8 weeks old); MitoTempo aka mitochondrially targeted antioxidant; spinal cord injury;


**Agents:** EHD2-sc-mTNFR2; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004, 1002, 1003D; **Duration:** 28 days, 14 days, or 3 days;

**ALZET Comments:** Dose (10 mg/ml- 28 days, 4.4 mg/ml-14 days, 1.1 mg/ml-3 days); animal info (Adult, Female, C57BL/6, 3 months old); post op. care (buprenorphine); Agonisitic specific for TNFR2 aka EHD2-sc-mTNFR2; ALZET brain infusion kit 3 used; bilateral cannula used; spinal cord injury;


**Agents:** XPro1595 **Vehicle:** Saline; **Route:** CSF/CNS (left lateral ventricle); **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;

**ALZET Comments:** Dose (10 mg/kg); Controls received mp w/ vehicle; animal info (Female, Sprague Dawley, 223-250 g); post op. care (); behavioral testing (Sucrose Preference, Novel Object Recognition, Open Field, Social Exploration, Modified forced swim test, Basso Beattie Bresnahan open field, Automated von Frey, Hargreaves' Thermal Testing, ); ALZET brain infusion kit 2 used; Brain coordinates (AP: -1.0 ML, +2.0, DV: -4.0- to -3.5); bilateral cannula used; cyanoacrylate adhesive; spinal cord injury;


**Agents:** peptide, intracellular LAR; peptide, intracellular sigma **Vehicle:** saline, BSA buffered; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 2001D, 1003D, 2001, 2002, and 2004; **Duration:** 1, 3, 5, 7, 14, 28 days;

**ALZET Comments:** Dose (ILP 10 μg/day); (ISP 10 μg/day)); 0.1% BSA in saline used; Controls received mp w/ vehicle; animal info (female, SD, 250g); ILP (NH2-GRKKRRQRPRCDDLADNRLKANDNLKFLSKEYESI-NH2) and ISP (NH2-GRKKRRQRPRCDDLADNRLKANDNLKFLSKEYESI-NH2) are peptides against LAR and PTPsigma; peptides; spinal cord injury; Therapeutic indication (inhibition of PTsigma and LAR receptors promotes oligodendrogenesis by endogenous precursor cells, attenuates caspase 3-mediated cell death in mature oligodendrocytes, and preserves myelin);
Agents: Amylin Vehicle: Saline; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: Dose (2 μg/kg/hr); Controls received mp w/ vehicle; animal info (male Wistar rats, 175 and 225 g); behavioral testing (von Frey, pinprick and acetone tests); spinal cord injury;

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: Plasmid; Recombinant Neuregulin-1; Lipofectamine 2000 Vehicle: PBS; Route: CSF/CNS (spinal cord); Species: Rat; Pump: 2004; Duration: 4 weeks;
ALZET Comments: Dose ((plasmid 5 μg), (Lipofectamine 15 uL)); Controls received sham surgery and mp w/ blank plasmid and vehicle; animal info (male, Sprague-Dawley, 160-180g); post op. care (bladders were pressed for urination every morning and every night until the rats recovered automatic urination.); NRG-1 plays a basic role in developing the peripheral nervous system and in nerve repair. Lipofectamine is a transfection reagent; spinal cord injury; gene therapy; plasmids mixed with Lipofectamine at a 1:3 ratio. pcDNA4/myc/A-NRG-1 plasmid constructed to overexpress NRG-1 protein; Therapeutic indication (NRG-1 promotes the recovery of nerve function in brachial plexus injury after contralateral C7 nerve root transfer in a rat model.);

Agents: Anti-HSP90α/b monoclonal antibody, mouse IgG Vehicle: CSF, artificial; Route: CSF/CNS (right lateral ventricle); Species: Mice; Pump: 1004; Duration: 14 days;
ALZET Comments: Dose (164 ng/mL-HSP90, IgG); aCSF: 148.3mM NaCl, 3mM KCl, 1.4mM CaCl2, 0.8mM MgCl2, 0.75mMNa2HPO4, and 0.195mMNaH2PO4 used; animal info (8 weeks old, 28-33 g, female, ddY); ALZET brain infusion kit 3 used; Brain coordinates (anteroposterior: −0.22mm, mediolateral: +1mm, dorsoventricular: −2.5mm); bilateral cannula used; cyanoacrylate adhesive; spinal cord injury;

Agents: Antibody, anti Nerve growth factor Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 1002; Duration: 2 weeks;
ALZET Comments: Dose (10 μg/Kg/hour); Controls received mp w/ vehicle; animal info (9-10-week-old female C57BL/6 N mice weighing 18-22 g); behavioral testing (reflexive tail flick); spinal cord injury;

Agents: RNA, small interfering (Flt3, scrambled) Vehicle: Not Stated; Route: CSF/CNS(Intrathecal); Species: Mice; Pump: 1002; Duration: 6 days;
ALZET Comments: Dose (12.53 ng/ml); animal info (C57BL/6 naive mice, Flt3KO mice 25–30 g.); behavioral testing (reflexive tail flick); spinal cord injury; stress/adverse reaction: (see pg. 10);

**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 (moxifloxacin, buprenorphine); spinal cord injury;


**Agents:** Nicotine  
**Vehicle:** Saline  
**Route:** SC  
**Species:** Not Stated  
**Pump:** Not Stated  
**Duration:** Not Stated  
**ALZET Comments:** Dose (10 mg/day/kg); 0.9% Saline used; Controls received mp w/ vehicle; animal info (8-12 weeks old, C57BL/6); spinal cord injury;


**Agents:** Interleukin-6  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Mice  
**Pump:** Not Stated  
**Duration:** 15 days  
**ALZET Comments:** Dose (1.0 mg/ml); Controls received mp w/ vehicle; animal info (Male, Sprague-Dawley, 180-220 g); post op. care (Penicillin G); spinal cord injury;


**Agents:** miR-103 agomir  
**Vehicle:** Saline  
**Route:** CSF/CNS (intrathecal)  
**Species:** Rat  
**Pump:** 1003D  
**Duration:** 3 days  
**ALZET Comments:** Dose (1 ul/hr/day); Controls received mp w/ vehicle; animal info (Male, Sprague-Dawley, 180-220 g); post op. care (Penicillin G); spinal cord injury;


**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:** 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;

**Agents:** Intracellular leukocyte common antigen-related peptide (ILP), Intracellular sigma peptide (ISP), TAT- conjugated peptides  
**Vehicle:** Saline;  
**Route:** CSF/CNS (intrathecal);  
**Species:** Rat;  
**Duration:** 1, 3, 5, 7, or 14 days;  

**ALZET Comments:** Dose (10 ug/day); Controls received mp w/ vehicle; animal info (Sprague-Dawley, adult, female, 250 g); animal info (Sprague-Dawley, adult, female, 250 g); spinal cord injury;


**Agents:** Neuregulin-1  
**Vehicle:** Bovine serum albumin, BSA in saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 1003D; 2001; 2002; 2006;  
**Duration:** 3 days; 7 days; 14 days; 42 days;  

**ALZET Comments:** Dose (2ug/day); 0.1% bovine serum albumin, BSA, in 0.9% saline used; 2 sets of controls. 1 uninjured no pumps, 2 SCI injury received mp w/ vehicle; animal info (female, 8-10weeks, 250g Sprague-Dawley); post op. care (buprenorphine 0.05mg/kg; meloxicam 2mg/kg, 3 additional doses buprenorphine every 8h); Neuregulin-1 aka Nrg-1 aka rhNrg-1β1; delayed delivery (30min after SCI); spinal cord injury; immunology. We provide the first evidence of a significant regulatory role for Nrg-1 in neuroinflammation after SCI. Establishes the promise of systemic Nrg-1 treatment as a candidate immunotherapy for traumatic SCI and other CNS neuroinflammatory conditions.; Therapeutic indication (neuroinflammatory conditions);


**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;

Q9467: Methods for Assessing Serpins as Neuroprotective Therapeutics. Methods in Molecular Biology 2018;  

**Agents:** Dexamethasone  
**Vehicle:** Saline;  
**Route:** CSF/CNS (Intrathecal);  
**Species:** Rat;  
**Pump:** 2ML4, 2ML2, 2ML1;  
**Duration:** 2 weeks;  

**ALZET Comments:** Dose (2.5-10 mL/h); animal info (Long Evans, Male, 16 week old rat, 370-420 g); spinal cord injury;