



References on the Use of ALZET® Osmotic Pumps and Wound Clips

Q10537: J. O. Hendrickx, *et al.* Short-Term Pharmacological Induction of Arterial Stiffness and Hypertension with Angiotensin II Does Not Affect Learning and Memory and Cerebral Amyloid Load in Two Murine Models of Alzheimer's Disease. *International Journal of Molecular Sciences* 2022;23(5):

Agents: Angiotensin II **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (1 µg/kg/min); Controls received mp w/ vehicle; animal info (5 months old hAPP23+/-, APP^{swe}/PSEN1^{dE9} C57BL6 mice); wound clips used; behavioral testing (Morris water maze); Blood pressure measured via non-invasive CODA tail-cuff blood pressure system; peptides; neurodegenerative (Alzheimer's disease); cardiovascular (hypertension)

Q10538: E. E. Handley, *et al.* Estrogen Enhances Dendrite Spine Function and Recovers Deficits in Neuroplasticity in the prpTDP-43(A315T) Mouse Model of Amyotrophic Lateral Sclerosis. *Molecular Neurobiology* 2022;59(5):2962-2976

Agents: Estradiol **Vehicle:** Saline; DMSO; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 60 days;

ALZET Comments: Dose (10 mg/ml); 50% DMSO used; Controls received mp w/ vehicle; animal info (Female; Wild-type and TDP-43; Ovariectomy); wound clips used; pumps replaced every 4 weeks; replacement therapy (Estrogen); neurodegenerative (ALS)

Q10434: A. DeGuzman, *et al.* Bittersweet: relevant amounts of the common sweet food additive, glycerol, accelerate the growth of PC3 human prostate cancer xenografts. *BMC Research Notes* 2022;15(1):101

Agents: Glycerol **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 32 days;

ALZET Comments: Dose (0.25 µL/h); Controls received mp w/ vehicle; animal info (Male; 6 weeks old); post op. care (Bupivacaine 7 mg/kg); wound clips used; cancer (Prostate);

Q10515: C. Decourt, *et al.* Central Irisin Signaling Is Required for Normal Timing of Puberty in Female Mice. *Endocrinology* 2022;164(2):

Agents: Cilengitide **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Dose (1.4 µg/mL); Controls received mp w/ vehicle; animal info (Male; Female; Mice; Weighed at least 10 g); receptor antagonist (Alpha(v)beta(3) and alpha(v)beta(5) integrins); wound clips used

Q10509: B. Cruz, *et al.* Alcohol self-administration and nicotine withdrawal alter biomarkers of stress and inflammation and prefrontal cortex changes in Gbeta subunits. *The American Journal of Drug and Alcohol Abuse* 2022;1-12

Agents: Nicotine, hydrogen tartrate **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;

ALZET Comments: Dose (3.2 mg/kg/day); 0.9% saline used; animal info (Male; Rats; Weighed 250-300 g); wound clips used; dependence;

Q10503: M. D. Campbell, *et al.* Elamipretide effects on the skeletal muscle phosphoproteome in aged female mice. *Geroscience* 2022;44(6):2913-2924

Agents: Elamipretide **Vehicle:** Saline, sterile, isotonic; **Route:** SC; **Species:** C57BL/6 mice; **Pump:** 1004; **Duration:** 8 weeks;

ALZET Comments: Dose (3 mg/kg/day); animal info (Female; Mice; 6-7 and 28-29 months old); post op. care: IP injection of meloxicam; pumps replaced every 4 weeks; peptides; wound clips used; aging; good methods (see page 2)

Q10577: C. Kondak, *et al.* Hydromethylthionine Enhancement of Central Cholinergic Signalling is Blocked by Rivastigmine and Memantine. *Journal of Neurochemistry* 2021;160(2):172-184

Agents: Rivastigmine; Memantine **Vehicle:** Aqua ad injectabilia; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (Rivastigmine 0.5 mg/kg/d; Memantine 1 mg/kg/d); dose-response (see p. 174); animal info (60 of each species so 120 mice total; Female; 6-8 months old; NMRI); enzyme inhibitor (Rivastigmine); wound clips used; neurodegenerative (Alzheimer's Disease);



Q6884: M. R. Johnstone, *et al.* The selective TrkA agonist, gambogic amide, promotes osteoblastic differentiation and improves fracture healing in mice. *Journal of Musculoskeletal and Neuronal Interactions* 2019;1-10

Agents: Gambogic amide **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Dose (1 mg/kg/day); Controls received mp w/ vehicle; animal info (Eighty C57BL/6 male mice); gambogic amide is the selective TrkA agonist; "Due to solubility issues with osmotic pump delivery, our study was limited to use of a dosing regimen of 1 mg/kg/day." P. 8; reflex wound clips used; Therapeutic indication (fibular fracture);

Q10079: K. A. Alkadhi, *et al.* Exercise decreases BACE and APP levels in the hippocampus of a rat model of Alzheimer's disease. *Molecular and Cellular Neuroscience* 2018;86(25-29)

Agents: Peptide, amyloid beta 1-42 **Vehicle:** Water, distilled; Acetonitrile; TFA; **Route:** SC; CSF/CNS (right lateral cerebral ventricle); **Species:** Rat; **Pump:** Not Stated; **Duration:** 4 weeks;

ALZET Comments: Dose (250 pmol/day); 64.9% distilled water, 35% acetonitrile, 0.1% trifluoroacetate (TFA) used; 2 control groups, 1 mp w/ agent, 1 mp w/ vehicle; animal info (adult male Wistar rats, 7 weeks, 200-225g); post op. care (wound clips used and triple antibiotic ointment); Amyloid beta 1 - 42 aka A β 1-42; peptides; Brain coordinates (AP, -0.3, L, 1.2, V, 4); Cannula placement verified via rat brain atlas; dental cement used; neurodegenerative (Alzheimer's); "Since our AD model was created by infusion of A β 1-42, we wanted to ascertain the possible effects of exogenous introduction of A β peptide on the endogenous system that produces AD-related peptides and whether regular exercise would be able to prevent these changes. The current and recent experiments showed that exercise might be beneficial for managing the ravages of AD probably through increasing endogenous BDNF." Therapeutic indication (exercise to increase production of BDNF);

Q5271: T. A. Slotkin, *et al.* Prenatal drug exposures sensitize noradrenergic circuits to subsequent disruption by chlorpyrifos. *Toxicology* 2015;338(8-16)

Agents: Nicotine Bitartrate **Vehicle:** Water, bacteriostatic; **Route:** SC; **Species:** Rat (pregnant dams); **Pump:** 2ML2; **Duration:** 17 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (pregnant Sprague-Dawley rats, 211-217g); animal info (pregnant Sprague-Dawley rats, 211-217g); dependence; Wound clips used; Dose (3 mg/kg/day);

Q5246: K. E. Parrish, *et al.* Efflux transporters at the blood-brain barrier limit delivery and efficacy of cyclin-dependent kinase 4/6 inhibitor palbociclib (PD-0332991) in an orthotopic brain tumor model. *J Pharmacol Exp Ther* 2015;355(2):264-71

Agents: Palbociclib **Vehicle:** DMSO, saline; **Route:** IP; **Species:** Mice; **Pump:** 1003D; **Duration:** 2 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (wild-type, Mdr1a/b2/2, Bcrp12/2, and Mdr1a/b2/2Bcrp12/2 mice); functionality of mp verified by brain and plasma level; cancer (brain tumor); good methods (pg 265); Wound clips used; Resultant brain-to-plasma ratios (pg 268); Dose (10 mg/ml);

Q5240: Y. Oda, *et al.* G protein-coupled receptor kinase 6/beta-arrestin 2 system in a rat model of dopamine supersensitivity psychosis. *J Psychopharmacol* 2015;29(12):1308-13

Agents: Haloperidol **Vehicle:** Acetic acid, glacial; water; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Eleven-week-old male Wistar rats, 240-260 g); functionality of mp verified by ELIZA testing; 2% acetic acid used; good methods (pg 1309); stress/adverse reaction: "One animal did not recover from pump-implanting surgery and was excluded from analysis" (see pg. 1310); behavioral testing (MAP-induced locomotion test); Vehicle pH adjusted to 3.6-3.8 with NaOH; 9mm wound clips used; Dose (0.75 mg/kg/d);

Q7355: H. Lu, *et al.* Subcutaneous Angiotensin II Infusion using Osmotic Pumps Induces Aortic Aneurysms in Mice. *J Vis Exp* 2015;103):

Agents: Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Mice (knockout); **Pump:** Not Stated; **Duration:** 4 weeks;

ALZET Comments: Dose (1000 ng/kg/min); animal info (male LDL receptor -/- mice); cardiovascular; good methods; Wound clips used;



Q4323: R. C. Bates, *et al.* Increasing pro-survival factors within whole brain tissue of Sprague Dawley rats via intracerebral administration of modified valproic acid. *JOURNAL OF PHARMACOLOGICAL SCIENCES* 2015;128(193-201
Agents: Valproic acid-PEG **Vehicle:** Not Stated; **Route:** CSF/CNS (caudate putamen); CSF/CNS (sagittal fissure); **Species:** Rat; **Pump:** 2004; **Duration:** 25 days;
ALZET Comments: Animal info (male, Sprague Dawley, 275-300g); ALZET brain infusion kit 1 used; behavioral testing (elevated plus maze, open field test); wound clips used;

Q5562: P. G. Popovich, *et al.* Independent evaluation of the anatomical and behavioral effects of Taxol in rat models of spinal cord injury. *Experimental Neurology* 2014;261(97-108
Agents: Paclitaxel **Vehicle:** Cremophor; ethanol; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Female Sprague-dawley rats, 10 weeks old, 215 g); functionality of mp verified by (pg. 100); good methods (pg. 99); spinal cord injury; post op. care (wound clips used; cages maintained at 37 degrees during recovery; daily injections of Gentocin (5 mg/kg) and saline for 7 days); Taxol aka Paclitaxel; Taxol is an anti-neoplastic microtubule stabilizing agent; reduces fibroglotic scarring caused by dorsal spinal hemisection; injury recovery; ALZET rat intrathecal catheter used for custom designed catheter; Therapeutic indication (spinal cord injury); Dose (256 ng/day);

Q5462: S. P. Patel, *et al.* N-acetylcysteine amide preserves mitochondrial bioenergetics and improves functional recovery following spinal trauma. *Experimental Neurology* 2014;257(95-105
Agents: Acetylcysteine amide, N- **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 24 hours; 7 days;
ALZET Comments: animal info (female Sprague-Dawley rats; 225-250 g); functionality of mp verified by analysis of spinal cord tissue; good methods (pg. 96); spinal cord injury, dorsal laminectomy performed at 12th thoracic vertebra; post op. care (hydrogen peroxide and betadine used to clean wound area; injected with pre-warmed Ringer's solution and Cefazolin); behavioral testing (BBB LRS [Basso, Beattie, Bresnahan Locomotor Rating Scale], Gait analysis); Rats anesthetized with ketamine (80 mg/kg) and xylazine (10 mg/kg); wound clips used; Therapeutic indication (spinal cord injury); Dose (150 mg/kg, 300 mg/kg);

Q5450: M. Onda, *et al.* Tofacitinib suppresses antibody responses to protein therapeutics in murine hosts. *J Immunol* 2014;193(1):48-55
Agents: Tofacitinib **Vehicle:** PEG 300; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Female BALB/c mice (6-8 wk old)); functionality of mp verified by plasma levels; immunology; Wound clips used; suppressing antibody responses; Dose (100 mg/mL); enzyme inhibitor (JAK3)

Q3213: A. T. Dao, *et al.* Regular exercise prevents non-cognitive disturbances in a rat model of Alzheimer's disease. *INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY* 2014;17(4):593-602
Agents: Amyloid, protein beta (1-42) **Vehicle:** Water, distilled; acetonitrile; trifluoroacetate; **Route:** CSF/CNS; **Species:** Rat; **Pump:** Not Stated; **Duration:** 2 weeks;
ALZET Comments: Control animals received sham operation; animal info (adult, male, Wistar, 176-200 g); wound clips used; post op care (triple antibiotic); neurodegenerative (Alzheimer's disease)

Q2671: D. Yu, *et al.* Alleviation of chronic pain following rat spinal cord compression injury with multimodal actions of huperzine A. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA* 2013;110(8):E746-E755
Agents: Huperzine A **Vehicle:** Cyclodextrin, beta; saline; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** Not Stated; **Duration:** 2 weeks;
ALZET Comments: Animal info (Sprague Dawley, female, adult, 200-235 g); 10% cyclodextrin used; 0.5 ul/hr rate of infusion; PE20 catheter used; wound clips used; catheter filled with 12 ul saline for delayed delivery of 24 hours; pumps replaced



Q2786: J. R. Turner, *et al.* Divergent Functional Effects of Sazetidine-A and Varenicline During Nicotine Withdrawal. *Neuropsychopharmacology* 2013;38(10):2035-2047

Agents: Nicotine tartrate **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (129SvEv;C57Bl/6J F1 hybrid, male, 7-12 wks old, 25-35 g); Reflex wound clips used

Q2629: P. Sokoloff, *et al.* Direct and indirect interactions of the dopamine D(3) receptor with glutamate pathways: implications for the treatment of schizophrenia. *NAUNYN-SCHMIEDEBERGS ARCHIVES OF PHARMACOLOGY* 2013;386(2):107-124

Agents: MK-801 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Control animals received mp w/ saline; wound clips used; post op. care (Vetedine, Negrol spray)

Q2672: A. H. Rezvani, *et al.* Effects of chronic sazetidine-A, a selective alpha4beta2 neuronal nicotinic acetylcholine receptors desensitizing agent on pharmacologically-induced impaired attention in rats. *Psychopharmacology* 2013;226(1):35-43

Agents: Sazetidine-A **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 4 weeks;

ALZET Comments: Control animals received mp w/ saline; animal info (Sprague Dawley, female, 70 days old, 287 g); wound clips used

Q2806: J. P. Moore, *et al.* A flow cytometric method for the analysis of macrophages in the vascular wall. *Journal of Immunological Methods* 2013;396(1-2):33-43

Agents: Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (C57BL/6); peptides; wound clips used; bp measured using tail-cuff;

R0363: K. D. Carr, *et al.* Animal Models of Eating Disorders. *Neuromethods*, 2013;74(261-317

Agents: Leptin, recomb. mouse **Vehicle:** Not Stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose (0.5 ug/0.5 uL/hr); Controls received mp w/ vehicle; Brain coordinates (1.0 mm posterior, 1.5 mm lateral, and 4.5 mm ventral); good methods (pg. 267); Wound clips used;

Q2606: R. K. Babbs, *et al.* 2-Hydroxyestradiol enhances binge onset in female rats and reduces prefrontal cortical dopamine in male rats. *Hormones and Behavior* 2013;63(1):88-96

Agents: Estradiol, hydroxy 2- **Vehicle:** PEG 400; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 4 weeks;

ALZET Comments: Control animals received mp w/ vehicle; animal info (Sprague Dawley, female); replacement therapy (ovariectomy); wound clips used; half-life (pg.89).

Q2576: S. Agarwal, *et al.* Function of the Blood-Brain Barrier and Restriction of Drug Delivery to Invasive Glioma Cells: Findings in an Orthotopic Rat Xenograft Model of Glioma. *Drug Metabolism and Disposition* 2013;41(1):33-39

Agents: Erlotinib **Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Pump:** 1003D; **Duration:** 48 hours;

ALZET Comments: Animal info (Mdr1ab -/-, Bcrp1 -/-, 8-10 wks old); wound clips used; half-life ("approximately 1 hour") pg 34; cancer (glioma); "Erlotinib half-life in mice has been reported to be approximately 1 hour (Marchetti et al., 2008), so an infusion lasting 48 hours was considered to be sufficient to attain steady state in both the brain and plasma." pg 34; chemotherapeutic; enzyme inhibitor (tyrosine kinase);

Q2457: A. M. Williams, *et al.* The effect of intermittent alcohol vapor or pulsatile heroin on somatic and negative affective indices during spontaneous withdrawal in Wistar rats. *Psychopharmacology* 2012;223(1):75-88

Agents: Heroin **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 30 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (Wistar, male, 70 days old); pulsatile delivery; "By filling the pumps with saline and attaching polyethylene (PE60) tubing to the pump, based on the tubing inner diameter and pump flow rate characteristics, the volume needed for different infusion periods (e.g., 14- or 10-h periods) could be determined"; "the tubing was filled with alternating heroin solution and mineral oil"; pulsatile delivery; good methods, pg 78; image of pump with connected Lynch coil; wound clips used; post op. care (Baytril); behavioral testing (elevated plus maze forced swim test)



Q2733: S. P. Vickers, *et al.* Effects of the DPP-4 Inhibitor, Linagliptin, in Diet-Induced Obese Rats: A Comparison in Naive and Exenatide-Treated Animals. *Clinical Laboratory* 2012;58(7-8):787-799

Agents: Exenatide **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 28 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (Wistar, female, 250-300 g); post op. care (betadine); wound clips used; pumps replaced on day 11

Q2717: S. Tadokoro, *et al.* Chronic Treatment With Aripiprazole Prevents Development of Dopamine Supersensitivity and Potentially Supersensitivity Psychosis. *SCHIZOPHRENIA BULLETIN* 2012;38(5):1012-1020

Agents: Haloperidol; aripiprazole **Vehicle:** Acetic acid, glacial; water; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 28 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (Sprague Dawley, male, 240-260 g); wound clips used; pumps replaced after 14 days; good methods "When a subsequent pump was implanted in exchange for a former one, the most recent pump was inserted on the other side of the scapulae across from the former pump." pg 1013

Q2048: A. K. Stoker, *et al.* Role of alpha7- and beta 4-Containing Nicotinic Acetylcholine Receptors in the Affective and Somatic Aspects of Nicotine Withdrawal: Studies in Knockout Mice. *Behavioral and Neural Biology* 2012;42(3):423-436

Agents: Nicotine hydrogen tartrate **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (wt, alpha 7 -/-); wound clips used

Q2433: M. J. Sopol, *et al.* Treatment with Activated Protein C (aPC) Is Protective during the Development of Myocardial Fibrosis: An Angiotensin II Infusion Model in Mice. *PLoS One* 2012;7(9):U1197-U1206

Agents: Angiotensin II; activated protein C **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 3 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (TIE2-EPCR, C57BL/6, male, 8-9 wks old); wound clips used; peptides

Q2309: A. J. Skwara, *et al.* Influence of environmental enrichment on hypothalamic-pituitary-adrenal (HPA) responses to single-dose nicotine, continuous nicotine by osmotic mini-pumps, and nicotine withdrawal by mecamylamine in male and female rats. *Behavioural Brain Research* 2012;234(1):1-10

Agents: Nicotine **Vehicle:** Saline; **Route:** IP; **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Animal info (Sprague Dawley, male, female, 200-225 g); wound clips used; 4.5 mg/kg/day, the approximate exposure of a smoker who uses one-half to one pack per day; "We did not measure plasma NIC concentrations, because the stability of NIC in the osmotic mini-pumps and the steady-state NIC concentrations in plasma following pump implantation are reliable and reproducible" pg 2

Q1811: M. L. Rovin, *et al.* Influence of chronic administration of antidepressant drugs on mRNA for galanin, galanin receptors, and tyrosine hydroxylase in catecholaminergic and serotonergic cell-body regions in rat brain. *Neuropeptides* 2012;46(2):81-91

Agents: Phenelzine; desipramine; paroxetine **Vehicle:** DMSO; PEG; water, distilled; **Route:** SC; IP; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, adult, 5-7 mo old); Osmotic minipumps were chosen for AD delivery because they slowly release drug over 14 days, thus eliminating the stress animals would experience by daily injections of the AD" pg 83; IP catheter used; wound clips used; enzyme inhibitor (monoamine oxidase); 50% DMSO used; 25% PEG used

Q1786: L. B. Romo, *et al.* Delayed administration of VEGF rescues spinal motor neurons from death with a short effective time frame in excitotoxic experimental models in vivo. *ASN Neuro* 2012;4(2):121-129

Agents: AMPA **Vehicle:** Phosphate buffer; vascular endothelial growth factor 164; neurodegenerative (amyotrophic lateral sclerosis); **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 2004; **Duration:** Not Stated;

ALZET Comments: Animal info (Wistar, male, 270-290 g); bilateral cannula used; wound clips used



Q1787: G. S. Portugal, *et al.* Strain-dependent Effects of Acute, Chronic, and Withdrawal from Chronic Nicotine on Fear Conditioning. *Behavior Genetics* 2012;42(1):133-150

Agents: Nicotine hydrogen tartrate salt **Vehicle:** Saline, physiological; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 12, 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, 129/SvEv); wound clips used

Q1893: P. G. Popovich, *et al.* Independent evaluation of the effects of glibenclamide on reducing progressive hemorrhagic necrosis after cervical spinal cord injury. *Experimental Neurology* 2012;233(2):615-622

Agents: Glibenclamide **Vehicle:** DMSO; saline, sterile; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** Not Stated;

ALZET Comments: Controls received mp w/ vehicle; animal info (female, Long-Evans, 10 wks old, 247 g); wound clips used; spinal cord injury

Q2364: A. R. Pandiri, *et al.* Reversion to Subgroup J Avian Leukosis Virus Viremia in Seroconverted Adult Meat-Type Chickens Exposed to Chronic Stress by Adrenocorticotropin Treatment. *Basic & Clinical Pharmacology & Toxicology* 2012;56(3):578-582

Agents: Adrenocorticotropin, porcine **Vehicle:** Saline; **Route:** SC; **Species:** Chicken; **Pump:** 2ML2; **Duration:** 14 days;

ALZET Comments: Animal info (V-A+, V-A-, DOH, 32 wks old); wound clips used; post op. care (pine tar on surgical site to avoid cannibalism)

Q2184: R. K. Mittapalli, *et al.* Impact of P-Glycoprotein (ABCB1) and Breast Cancer Resistance Protein (ABCG2) on the Brain Distribution of a Novel BRAF Inhibitor: Vemurafenib (PLX4032). *The Journal of Pharmacology and Experimental Therapeutics* 2012;342(1):33-40

Agents: Vemurafenib **Vehicle:** DMSO; propylene glycol; saline; **Route:** IP; **Species:** Mice; **Duration:** 48 hours;

ALZET Comments: Animal info (wt, Mdr1a/b -/-, Bcrp1 -/-); infusion rate of 1 ul/hr; wound clips used; brain tissue distribution; cancer (breast); vemurafenib also known as PLX4032; 40% DMSO used; chemotherapeutic

Q2642: F. L. Martin, *et al.* CD-NP: A Novel Engineered Dual Guanylyl Cyclase Activator with Anti-Fibrotic Actions in the Heart. *PLoS One* 2012;7(12):U857-U863

Agents: Cenderitide **Vehicle:** Glucose solution; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 2 weeks;

ALZET Comments: Control animals received mp w/ vehicle; animal info (Wistar, male, wks old, 150-200 g); wound clips used; cenderitide also known as CD-NP

Q1838: K. Z. Kolokotroni, *et al.* Effects of chronic nicotine, nicotine withdrawal and subsequent nicotine challenges on behavioural inhibition in rats. *Psychopharmacology* 2012;219(2):453-468

Agents: Nicotine hydrogen tartrate salt **Vehicle:** Saline; sodium hydroxide; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 7 days;

ALZET Comments: animal info (Lister Hooded, adult, male); "Chronic administration of nicotine via osmotic minipumps (rather than by injection) mimics more effectively the nicotine intake of smokers... by ensuring the maintenance of constant plasma levels throughout the study." pg 455; wound clips used

Q2313: H. S. Kim, *et al.* Carbohydrate restriction and lactate transporter inhibition in a mouse xenograft model of human prostate cancer. *Blood* 2012;110(7):1062-1069

Agents: Cyano-4-hydroxycinnamate, alpha **Vehicle:** DMSO; PEG; **Route:** SC; **Species:** Mice (nude); **Pump:** Not Stated;

Duration: 42 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (athymic, male, 6-8 wks old); cancer (prostate); 9 mm wound clips used; post op. care (triple antibiotic ointment); long-term study;

Q1884: E. Jang, *et al.* Syndecan-4 proteoliposomes enhance fibroblast growth factor-2 (FGF-2)-induced proliferation, migration, and neovascularization of ischemic muscle. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA* 2012;109(5):1679-1684

Agents: Fibroblast growth factor-2; syndecan-4, proteoliposome **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 1004;

Duration: 7-16 days;

ALZET Comments: Controls received mp w/ PBS; animal info (Sprague Dawley); wound clips used; ischemia



Q2350: N. E. Heger, *et al.* Human Fetal Testis Xenografts Are Resistant to Phthalate-Induced Endocrine Disruption. *Environmental Health Perspectives* 2012;120(8):1137-1143

Agents: Cytidine, bromodeoxy **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (nude); Rat (nude); **Pump:** 2001; **Duration:** Not Stated;

ALZET Comments: Wound clips used

Q2734: C. W. Grant, *et al.* Development of Standardized Insulin Treatment Protocols for Spontaneous Rodent Models of Type 1 Diabetes. *Comparative Medicine* 2012;62(5):381-390

Agents: Insulin (Humulin R) **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NOD); **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Animal info (diabetic, NOD); Humulin R used; wound clips used; diabetes; dose response (Table 1);

"Compared with injected insulin, osmotic insulin pumps provided superior glycemic control, although diabetic NOD mice did experience events of hypoglycemia. diabetes;

Q2126: E. B. Engler-Chiurazzi, *et al.* Continuous estrone treatment impairs spatial memory and does not impact number of basal forebrain cholinergic neurons in the surgically menopausal middle-aged rat. *Hormones and Behavior* 2012;62(1):1-9

Agents: Estrone sulfate **Vehicle:** PEG; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 25 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Fischer 344, female, 15-16 mo old); wound clips used; replacement therapy (ovariectomy);

Q2838: E. Craigie, *et al.* Failure to Downregulate the Epithelial Sodium Channel Causes Salt Sensitivity in Hsd11b2 Heterozygote Mice. *Hypertension* 2012;60(3):684-U224

Agents: Benzamil **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** Not Stated;

ALZET Comments: Control animals received mp w/ vehicle; animal info (Hsd11b2 wt, +/-, 100-200 days old); wound clips used

Q2111: V. R. Chowdhary, *et al.* Chronic Exposure to Staphylococcal Superantigen Elicits a Systemic Inflammatory Disease Mimicking Lupus. *Journal of Immunology* 2012;189(4):2054-2062

Agents: Staphylococcal enterotoxin B **Vehicle:** PBS; **Route:** SC; **Species:** Mice (transgenic); **Pump:** Not Stated; **Duration:** 4 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (HLA-DQ8 tg, male, female, 8-12 wks old); wound clips used; 28-day pump used; immunology

Q2310: R. M. Camp, *et al.* Fear conditioning can contribute to behavioral changes observed in a repeated stress model. *Behavioural Brain Research* 2012;233(2):536-544

Agents: Propranolol; nadolol **Vehicle:** Saline, endotoxin-free; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** Not Stated;

ALZET Comments: Control animals received mp w/ vehicle; animal info (Fischer 344, Sprague Dawley, 225-275 g); wound clips used; behavioral testing (exploration, social interaction)

Q2287: D. K. Atchison, *et al.* Parathyroid hormone-related protein stimulates plasma renin activity via its anorexic effects on sodium chloride intake. *American Journal of Physiology Endocrinology and Metabolism* 2012;303(4):E457-E463

Agents: Parathyroid hormone related protein (1-34), rat **Vehicle:** Cysteine HCl; saline; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** 5 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 200-250 g); wound clips used

Q1814: N. Amitai, *et al.* Repeated phencyclidine administration alters glutamate release and decreases GABA markers in the prefrontal cortex of rats. *Neuropharmacology* 2012;62(3):1422-1431

Agents: Clozapine **Vehicle:** HCl; saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Wistar, male, 300 g); pumps replaced after 7 days; "The limited solubility of clozapine at the concentration that was required to deliver 4 mg/kg/day in the maximal volume that could be contained in the minipumps prevented the use of a single 14 day osmotic minipump; thus, two successive 7 day minipumps were used" pg 1423; wound clips used; post op. care (antibacterial ointment) pg 1423



Q2649: D. Agarwal, *et al.* Detraining Differentially Preserved Beneficial Effects of Exercise on Hypertension: Effects on Blood Pressure, Cardiac Function, Brain Inflammatory Cytokines and Oxidative Stress. *PLoS One* 2012;7(12):U2141-U2153

Agents: Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2006; **Duration:** 42 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (Sprague Dawley, male, adult, 250-350 g); peptides; wound clips used; good methods (pg 252569); post op. care (buprenorphine); long-term study;

Q1641: J. R. Turner, *et al.* Parallel Anxiolytic-Like Effects and Upregulation of Neuronal Nicotinic Acetylcholine Receptors Following Chronic Nicotine and Varenicline. *NICOTINE & TOBACCO RESEARCH* 2011;13(1):48-53

Agents: Nicotine tartrate; varenicline **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, 129Svj; C57Bl/6J, F1 hybrid, 6-12 wks old, 25-35 g); wound clips used

Q0932: L. G. Thaete, *et al.* ENDOTHELIN AND BLOOD PRESSURE REGULATION IN THE FEMALE RAT: STUDIES IN NORMAL PREGNANCY AND WITH NITRIC OXIDE SYNTHASE INHIBITION-INDUCED HYPERTENSION. *HYPERTENSION IN PREGNANCY* 2011;19(2):233-247

Agents: A-127722; A-182086; A-192621; FR-139317; L-NAME **Vehicle:** Ethyl alcohol; propylene glycol; NaOH; water; **Route:** SC; IV (jugular); **Species:** Rat (pregnant); Rat; **Pump:** Not Stated; **Duration:** 7 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague-Dawley); multiple pumps per animal (2); wound clips used; 20% ethyl alcohol used; "It is likely that administration with the pumps resulted in more consistent drug levels..." pg 242

Q1700: L. E. Stefanyk, *et al.* Recovered insulin response by 2 weeks of leptin administration in high-fat fed rats is associated with restored AS160 activation and decreased reactive lipid accumulation. *American Journal of Physiology Regulatory, Integrative, and Comparable Physiology* 2011;301(1):R159-R171

Agents: Leptin, recomb. rat **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 2 weeks;

ALZET Comments: Controls received mp w/ saline; animal info (Sprague Dawley, female, 140 g); wound clips used

Q0724: N. J. Stagg, *et al.* Regular Exercise Reverses Sensory Hypersensitivity in a Rat Neuropathic Pain Model Role of Endogenous Opioids. *Anesthesiology* 2011;114(4):940-948

Agents: Naltrexone **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2006; **Duration:** 5 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-380 g); wound clips used; neuropathic pain

Q1951: R. E. Sorge, *et al.* Spinal Cord Toll-Like Receptor 4 Mediates Inflammatory and Neuropathic Hypersensitivity in Male But Not Female Mice. *Journal of Neuroscience* 2011;31(43):15450-15454

Agents: Testosterone propionate **Vehicle:** Polyethylene glycol; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: animal info (naive, adult, 6-12 wks old, male, female, CD-1); wound clips used

Q0895: M. J. Sopol, *et al.* Myocardial fibrosis in response to Angiotensin II is preceded by the recruitment of mesenchymal progenitor cells. *Laboratory Investigation* 2011;91(4):565-578

Agents: Angiotensin II; Losartan **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (transgenic); **Pump:** Not Stated; **Duration:** 1, 3, 7 days;

ALZET Comments: Controls received mp w/ saline; animal info (male, C57BL/6, Tie2-GFP); peptides; 7 mm wound clips used

Q1346: M. Skrzypski, *et al.* Orexin A stimulates glucose uptake, lipid accumulation and adiponectin secretion from 3T3-L1 adipocytes and isolated primary rat adipocytes. *Diabetologia* 2011;54(7):1841-1852

Agents: Orexin A **Vehicle:** Saline; **Route:** IP; **Species:** Rat; **Pump:** 2ML4; **Duration:** 4 weeks;

ALZET Comments: Animal info (adult, male, Wistar, 10 wks old, 200 g); wound clips used



Q0907: N. Saghafi, *et al.* Cannabinoids attenuate cancer pain and proliferation in a mouse model. *Neuroscience Letters* 2011;488(3):247-251

Agents: WIN-55212-2; ACEA; AM1241 **Vehicle:** DMSO; Water; **Route:** SC; **Species:** Mice (nude); **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Animal info (Foxn1 nu, athymic, 4-5 wks old, 20-25 g); cancer (oral); behavioral testing (mechanical allodynia); 50% DMSO used; wound clips used; pain

Q0700: N. Sachan, *et al.* Sustained Hemodynamic Stress Disrupts Normal Circadian Rhythms in Calcineurin-Dependent Signaling and Protein Phosphorylation in the Heart. *Circulation Research* 2011;108(4):437-U100

Agents: Cyclosporine **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, C57BL/6, 6-8 wks old); wound clips used

Q1959: L. Raz, *et al.* Acetylation of the Pro-Apoptotic Factor, p53 in the Hippocampus following Cerebral Ischemia and Modulation by Estrogen. *PLoS One* 2011;6(10):U823-U832

Agents: Estradiol, 17-beta **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Rat; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Animal info (Sprague Dawley, female, adult, 3 mo old); replacement therapy (ovariectomy); wound clips

Q0735: K. M. Raehal, *et al.* The role of beta-arrestin2 in the severity of antinociceptive tolerance and physical dependence induced by different opioid pain therapeutics. *Neuropharmacology* 2011;60(1):58-65

Agents: Morphine; Methadone; Fentanyl; Oxycodone **Vehicle:** Water, sterile, distilled; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days;

ALZET Comments: Animal info (male, WT, barr2-KO); dependence; wound clips used

Q1758: M. J. Palmer, *et al.* Signaling thresholds govern heterogeneity in IL-7-receptor-mediated responses of naive CD8(+) T cells. *Immunology and Cell Biology* 2011;89(5):581-594

Agents: Interleukin-7 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Controls received mp w/ PBS; animal info (C57BL/6, 6-16 wks old); wound clips used; post op. care (betadine)

Q2230: S. G. N. Mazurek, *et al.* Functional biomarkers of musculoskeletal syndrome (MSS) for early in vivo screening of selective MMP-13 inhibitors. *Journal of Pharmacological and Toxicological Methods* 2011;64(1):89-96

Agents: Marimastat **Vehicle:** DMSO; water; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 15-17 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 180-370); wound clips used; enzyme inhibitor (matrix metalloproteinase, MMP-13)

Q1222: M. S. Madhur, *et al.* Role of Interleukin 17 in Inflammation, Atherosclerosis, and Vascular Function in Apolipoprotein E-Deficient Mice. *Arteriosclerosis, Thrombosis, and Vascular Biology* 2011;31(7):1565-U188

Agents: Angiotensin II **Vehicle:** Not Stated; **Route:** SC; **Species:** Not Stated; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Animal info (IL17A -/-, ApoE -/-, 8-11 wks old); peptides; wound clips used

Q1533: J. W. Kenney, *et al.* The effects of acute, chronic, and withdrawal from chronic nicotine on novel and spatial object recognition in male C57BL/6J mice. *Psychopharmacology* 2011;217(3):353-365

Agents: Nicotine **Vehicle:** Saline, physiological; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 12 days;

ALZET Comments: Controls received mp w/ vehicle; wound clips used

Q1132: E. Ilijic, *et al.* The L-type channel antagonist isradipine is neuroprotective in a mouse model of Parkinson's disease. *Neurobiology of Disease* 2011;43(2):364-371

Agents: Isradipine **Vehicle:** DMSO; PEG 300; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, C57BL/6, 6-7 wks old, 20 g); wound clips used



Q0852: H. Goto, *et al.* Exendin-4, a glucagon-like peptide-1 receptor agonist, reduces intimal thickening after vascular injury. *Biochemical and Biophysical Research Communications* 2011;405(1):79-84

Agents: Exendin-4 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: Controls received mp w/ saline; animal info (male, C57BL/6, 8 wks old); wound clips used

Q1081: J. B. Garlie, *et al.* Tumor necrosis factor receptor 2 signaling limits beta-adrenergic receptor-mediated cardiac hypertrophy in vivo. *Basic Research in Cardiology* 2011;106(6):1193-1205

Agents: Isoproterenol **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Controls received mp w/ saline; animal info (TNFR2^{-/-}, TNFR1^{-/-}, male, 25-30 g, C57BL/6); wound clips

Q1074: L. Fuechtbauer, *et al.* Angiotensin II Type 1 receptor (AT1) signaling in astrocytes regulates synaptic degeneration-induced leukocyte entry to the central nervous system. *Brain, Behavior, and Immunity* 2011;25(5):897-904

Agents: Candesartan **Vehicle:** Saline, physiological; sodium carbonate; **Route:** IP; **Species:** Mice (transgenic); **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (adult, female, GFAP-lj-beta-alpha-dn, GFAP-EGFP-tg); wound clips used

Q0652: M. H. Farah, *et al.* Reduced BACE1 Activity Enhances Clearance of Myelin Debris and Regeneration of Axons in the Injured Peripheral Nervous System. *Journal of Neuroscience* 2011;31(15):5744-5754

Agents: BACE1 inhibitor IV; WAY 258131 **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** 2001; **Duration:** 7, 15 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (BACE1 KO, WT, 8-12 wks old); enzyme inhibitor (beta-site amyloid precursor protein (APP) cleaving enzyme 1 (BACE1)); 9 mm wound clips used

Q0695: C. A. Blaiss, *et al.* Temporally Specified Genetic Ablation of Neurogenesis Impairs Cognitive Recovery after Traumatic Brain Injury. *Journal of Neuroscience* 2011;31(13):4906-4916

Agents: Ganciclovir **Vehicle:** Water, deionized; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks; 30 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (6 wks old, male, wild-type, nestin-HSV-tk); wound clips used; behavioral testing (Morris water maze, fear conditioning)

Q1922: H. Azukizawa, *et al.* Steady state migratory RelB(+) langerin(+) dermal dendritic cells mediate peripheral induction of antigen-specific CD4(+) CD25(+) Foxp3(+) regulatory T cells. *European Journal of Immunology* 2011;41(5):1420-1434

Agents: OVA (327-339) **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Animal info (K5-mOVA, OT-I, OT-II, C57BL/6, 129); peptides; OVA (327-339) is a peptide segment of ovalbumin; wound clips used; immunology

Q1397: C. H. K. West, *et al.* Paroxetine-Induced Increase in Activity of Locus Coeruleus Neurons in Adolescent Rats: Implication of a Countertherapeutic Effect of an Antidepressant. *Neuropsychopharmacology* 2010;35(8):1653-1663

Agents: Paroxetine **Vehicle:** DMSO; PEG 400; water, distilled; **Route:** IP; **Species:** Rat; **Pump:** 2ML2; **Duration:** 2, 4, 8, 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 45 days old); pumps replaced after 7 days; 50% DMSO used; 25% PEG 400 used; wound clips used; IP catheter used; The distal end of the tubing was then introduced through a small hole into the peritoneal cavity and secured to the abdominal wall while closing the hole with suture." pg 1654; "For duration of administration of 14 days in the juvenile animals, the minipump was replaced after 7 days, with the drug concentration adjusted at that time for the increased weight of the animal." pg 1654

Q1369: J. R. Turner, *et al.* Nicotinic Partial Agonists Varenicline and Sazetidine-A Have Differential Effects on Affective Behavior. *The Journal of Pharmacology and Experimental Therapeutics* 2010;334(2):665-672

Agents: Nicotine tartrate; sazetidine-A tartrate; Varenicline tartrate **Vehicle:** Saline, Sterile; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Controls received saline injections; animal info (129Sv);C57BL/6J F1 hybrid, male, 6-12 wks old); wound clips used



Q1592: L. B. Romo, *et al.* VEGF protects spinal motor neurons against chronic excitotoxic degeneration in vivo by activation of PI3-K pathway and inhibition of p38MAPK. *Journal of Neurochemistry* 2010;115(5):1090-1101

Agents: Isoxazolepropionate, alpha amino-3-hydroxy-5-; vascular endothelial growth factor, recomb., 164; SU14980, tyrphostin; LY294002; wortmannin; PD-98059; SB203580; neurodegenerative (amyotrophic lateral sclerosis); **Vehicle:** PBS; DMSO; **Route:** CSF/CNS (intrathecal, spinal cord); **Species:** Rat; **Pump:** 2004; **Duration:** 2, 10, 20 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Wistar, male, 270-290 g, adult); alpha amino-3-hydroxy-5-isoxazolepropionate also known as AMPA; wound clips used; post op. care, pg 1091 (penicillin); good methods, pg 1091; multiple pumps used (2); multiple intrathecal catheters used; wound clips used; 2% DMSO used; enzyme inhibitor (p38 mitogen-activated protein kinase, p38MAPK)

Q1576: S. L. Pedersen, *et al.* Peptide hormone isoforms: N-terminally branched PYY3-36 isoforms give improved lipid and fat-cell metabolism in diet-induced obese mice. *JOURNAL OF PEPTIDE SCIENCE* 2010;16(11):664-673

Agents: Peptide YY (3-36); peptide YY (3-36), isoform 2; peptide YY (3-36), isoform 3 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1003D; 2002; **Duration:** 3 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, DIO C57BL/6J, NMRI, 8-9 wks old); incorrectly listed Model 1003 pumps used; stability verified pg 667 (2, 7, 14 days via HPLC); wound clips used

Q0226: L. A. Natividad, *et al.* Nicotine Withdrawal Produces a Decrease in Extracellular Levels of Dopamine in the Nucleus Accumbens that is Lower in Adolescent Versus Adult Male Rats. *Synapse* 2010;64(2):136-145

Agents: Nicotine hydrogen tartrate **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;

ALZET Comments: Animal info (male, Wistar, adult, adolescent); 9 mm wound clips used; rate of infusion listed incorrectly

Q0250: T. C. Ma, *et al.* A Large-Scale Chemical Screen for Regulators of the Arginase 1 Promoter Identifies the Soy Isoflavone Daidzein as a Clinically Approved Small Molecule That Can Promote Neuronal Protection or Regeneration via a cAMP-Independent Pathway. *Journal of Neuroscience* 2010;30(2):739-748

Agents: Daidzein **Vehicle:** DMSO; **Route:** CSF/CNS (intrathecal); SC; **Species:** Rat; **Pump:** 1007D; **Duration:** 2 weeks; 24 hours;

ALZET Comments: Controls received mp w/ vehicle; animal info (Fisher, 28-30 days old; 250-300g); dose-response (fig. 4); wound clips used; optic nerve crush injury and regeneration model; comparison of SC mp vs IT mp to determine if agent is able to cross BBB

Q0496: N. Kitanaka, *et al.* Withdrawal from Fixed-Dose Injection of Methamphetamine Decreases Cerebral Levels of 3-Methoxy-4-hydroxyphenylglycol and Induces the Expression of Anxiety-Related Behavior in Mice. *Neurochemical Research* 2010;35(5):749-760

Agents: Methamphetamine **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 1 week;

ALZET Comments: Controls received mp w/ vehicle; animal info (ICR, 38-55 g); wound clips used; behavioral testing (tail suspension)

Q0073: N. K. H. Khoo, *et al.* Activation of vascular endothelial nitric oxide synthase and heme oxygenase-1 expression by electrophilic nitro-fatty acids. *Free Radical Biology and Medicine* 2010;48(2):230-239

Agents: Oleic acid, nitro; Oleic acid **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days;

ALZET Comments: Post op. care (Buprenex); Animal info (male, C57BL/6J, 8-10 wks old); 9 mm wound clips used

Q0166: S. A. Imran, *et al.* Tissue-specific effects of valsartan on rstn and fiaf gene expression in the ob/ob mouse. *Diabetes and Vascular Disease Research* 2010;1-8

Agents: Valsartan **Vehicle:** DMSO; Water; Sodium hydroxide; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Controls received sham operation; animal info (male, C57BL/6, lean, obese, 13 wks old); diabetes

Q0476: S. A. Imran, *et al.* Tissue-specific effects of valsartan on rstn and fiaf gene expression in the ob/ob mouse. *Diabetes & Vascular Disease Research* 2010;7(3):231-238

Agents: Valsartan **Vehicle:** DMSO; Sodium hydroxide; Water; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

ALZET Comments: Lean controls received mp w/valsartan; animal info (male, C57BL/6 lean, Ob/ob, B6.V-Lepob/J); wound clips



Q1584: S. Hood, *et al.* Endogenous Dopamine Regulates the Rhythm of Expression of the Clock Protein PER2 in the Rat Dorsal Striatum via Daily Activation of D(2) Dopamine Receptors. *Journal of Neuroscience* 2010;30(42):14046-14058

Agents: SCH23390; raclopride; quinpirole; SKF 81297 **Vehicle:** Water, distilled; **Route:** SC; **Species:** Rat; **Pump:** 2ML2;

Duration: 5, 10 days;

ALZET Comments: Controls received sham surgery; animal info (Wistar, male, 180-210 g); SCH23390 is a D1DA receptor antagonist; raclopride is a D2Da receptor antagonist; wound clips used

Q1116: J. L. Hay, *et al.* Model of methadone-induced hyperalgesia in rats and effect of memantine. *European Journal of Pharmacology* 2010;626(2-3):229-233

Agents: Methadone **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ saline; animal info (adult, male, Sprague Dawley); post op. care (Topical antibiotic powder); wound clips used

Q0772: N. W. Hartman, *et al.* CXCL12-Mediated Guidance of Migrating Embryonic Stem Cell-Derived Neural Progenitors Transplanted into the Hippocampus. *PLoS One* 2010;5(12):U385-U397

Agents: AMD 3100 **Vehicle:** PBS; **Route:** SC; **Species:** Mice (SCID); **Pump:** 1004; **Duration:** Not Stated;

ALZET Comments: Controls received mp w/ vehicle; animal info (8-10 wks old, B6.CB17-Prkdc scid/SzJ);

Q1103: Z. R. Guan, *et al.* Pentosan polysulfate treatment preserves renal autoregulation in ANG II-infused hypertensive rats via normalization of P2X(1) receptor activation. *American Journal of Physiology Renal Physiology* 2010;298(5):F1276-F1284

Agents: Angiotensin II **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Animal info (Sprague Dawley); peptides; systolic blood pressure measured via tail cuff; wound clips used

Q1100: K. Groth, *et al.* Cyclosporine A exposure during pregnancy in mice: effects on reproductive performance in mothers and offspring. *Human Reproduction* 2010;25(3):697-704

Agents: Cyclosporine A **Vehicle:** Propylene glycol; **Route:** SC; **Species:** Mice (pregnant); **Pump:** 2001; 2002;

ALZET Comments: Controls received mp w/ vehicle; animal info (C57CBA-F1, female); pumps replaced after 1 weeks; 90% propylene glycol used; wound clips used

Q1067: T. A. Ferreira, *et al.* Serotonin receptor 1A modulates actin dynamics and restricts dendritic growth in hippocampal neurons. *European Journal of Neuroscience* 2010;32(1):18-26

Agents: WAY100635 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 21 days;

ALZET Comments: Controls received mp w/ saline; animal info (Htr1a null, P14); half-life, 1.5 hours (p. 19); wound clips used

Q0399: M. B. Doura, *et al.* Persistent Gene Expression Changes in Ventral Tegmental Area of Adolescent but not Adult Rats in Response to Chronic Nicotine. *Neuroscience* 2010;170(2):503-513

Agents: Nicotine hydrogen tartrate **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Controls received mp w/vehicle; animal info (male, Sprague Dawley, 28-30 pn, 60-70 pn); post op. care (buprenorphine); wound clips used

Q1026: C. R. Dass, *et al.* Sequence-Related Off-Target Effect of Dz13 Against Human Tumor Cells and Safety in Adult and Fetal Mice Following Systemic Administration. *Oligonucleotides* 2010;20(2):51-60

Agents: Oligonucleotide, Dz13 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (pregnant); **Pump:** 1002; **Duration:** 4 days;

ALZET Comments: Animal info (Balb/C, E10); cancer; "In vivo, in general, no toxic effects were observed in... adult mice bolus and continuous systemic dosing studies." pg 59; 7 mm wound clips used

Q1580: F. Bretzner, *et al.* Combination of Olfactory Ensheathing Cells With Local Versus Systemic cAMP Treatment After a Cervical Rubrospinal Tract Injury. *Journal of Neuroscience Research* 2010;88(13):2833-2846

Agents: cAMP; rolipram **Vehicle:** PBS, sterile; DMSO; **Route:** SC; CSF/CNS (red nucleus); **Species:** Rat; **Pump:** 2001; 2ML1;

Duration: 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, male, adult, 300-400 g); wound clips used; enzyme inhibitor (phosphodiesterase); pumps replaced after one week; 16% DMSO used



- Q1573:** R. S. Bitner, *et al.* In Vivo Pharmacological Characterization of a Novel Selective alpha-7 Neuronal Nicotinic Acetylcholine Receptor Agonist ABT-107: Preclinical Considerations in Alzheimer's Disease. *The Journal of Pharmacology and Experimental Therapeutics* 2010;334(3):875-886
Agents: ABT-107; donepezil **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; mice; **Pump:** 1002; 2ML2; **Duration:** 7 days; 2 weeks;
ALZET Comments: animal info (Sprague Dawley, male, 275-400 g; male CD1, female tau P301L, 20-30 g); post op. care (flunixin meglumine); wound clips used; neurodegenerative (Alzheimer's disease)
- Q0105:** M. Arakawa, *et al.* Inhibition of Monocyte Adhesion to Endothelial Cells and Attenuation of Atherosclerotic Lesion by a Glucagon-like Peptide-1 Receptor Agonist, Exendin-4. *Diabetes* 2010;59(4):1030-1037
Agents: Exendin-4 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ saline; animal info (C57BL/6, 7 wks old male, apoe-1-, 6 wks old); diabetes;
- Q0963:** B. Anton, *et al.* Nociceptin/Orphanin FQ Suppresses Adaptive Immune Responses In Vivo and at Picomolar Levels In Vitro. *Journal of Neuroimmune Pharmacology* 2010;5(1):143-154
Agents: Nociceptin/orphanin FQ; morphine **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 48 hours;
ALZET Comments: Controls received mp w/ vehicle; animal info (6 wks old, pathogen free, C3HeB/ FeJ, female); peptides; AutoClip wound clips used; immunosuppressant
- Q0956:** S. Agarwal, *et al.* Distribution of Gefitinib to the Brain Is Limited by P-glycoprotein (ABCB1) and Breast Cancer Resistance Protein (ABCG2)-Mediated Active Efflux. *The Journal of Pharmacology and Experimental Therapeutics* 2010;334(1):147-155
Agents: Gefitinib **Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Pump:** 1003D; **Duration:** 24, 48 hours;
ALZET Comments: Animal info (wt, Mdr1a/b -/- Bcrp1 -/-,); dose-response (Table 1); half-life (p.149) "1 hour in mice"; wound clips used; chemotherapeutic
- Q0278:** V. C. Wing, *et al.* Measurement of affective state during chronic nicotine treatment and withdrawal by affective taste reactivity in mice: The role of endocannabinoids. *Biochemical Pharmacology* 2009;78(7):825-835
Agents: Nicotine **Vehicle:** NaCl; **Route:** SC; **Species:** Mice; **Pump:** 1002; 1004; **Duration:** 1, 7, 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (male C57BL6J, 8 wks old); wound clips used; withdrawal
- Q0643:** S. K. Williams, *et al.* Simultaneous prenatal ethanol and nicotine exposure affect ethanol consumption, ethanol preference and oxytocin receptor binding in adolescent and adult rats. *NEUROTOXICOLOGY AND TERATOLOGY* 2009;31(5):291-302
Agents: Nicotine **Vehicle:** Water, bacteriostatic; sodium bitartrate; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2ML4; **Duration:** 28-30 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (virgin, Sprague-Dawley); teratology; wound clips used
- Q0364:** K. L. Oslund, *et al.* Activation of Calcitonin Gene-Related Peptide Receptor during Ozone Inhalation Contributes to Airway Epithelial Injury and Repair. *Toxicologic Pathology* 2009;37(6):805-813
Agents: Uridine, bromodeoxy; C-2806 8-37 **Vehicle:** NaOH; **Route:** IV (jugular); SC; **Species:** Rat; **Pump:** 2001D;
ALZET Comments: Controls received mp w/ sterile saline; animal info (male, Wistar, 200-250 g); peptide; multiple pumps per animal (2); C-2806 8-37 is a CGRP receptor antagonist; wound clips used; labeling of airway epithelium
- Q0910:** F. Leri, *et al.* Steady-state methadone blocks cocaine seeking and cocaine-induced gene expression alterations in the rat brain. *European Neuropsychopharmacology* 2009;19(4):238-249
Agents: Methadone **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 225-250 g); wound clips used



Q0761: K. J. Jackson, *et al.* Characterization of pharmacological and behavioral differences to nicotine in C57B1/6 and DBA/2 mice. *Neuropharmacology* 2009;57(4):347-355

Agents: Nicotine **Vehicle:** Saline, physiological; **Route:** SC; **Species:** Mice; **Pump:** 2002; 2004; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ saline; animal info (male, B6, D2, 20-25 g); wound clips used; "the nicotine dose used for chronic studies corresponds to approximately 2 mg/kg/h, which yields plasma levels of 0.1 uM, a dose within the plasma range of human smokers"; tolerance; withdrawal

P9703: J. Gilbert, *et al.* Behavioral effects of systemic transforming growth factor-alpha in Syrian hamsters. *Behavioural Brain Research* 2009;198(2):440-448

Agents: Transforming, growth factor-alpha, recomb. human **Vehicle:** Acetic acid; BSA; saline, sterile; **Route:** SC; **Species:** Hamster; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Controls received mp w/vehicle; good methods pg. 441; animal info (Syrian, male); wound clips used

Q0367: D. D. Fuller, *et al.* Prenatal nicotine exposure alters respiratory long-term facilitation in neonatal rats. *Respiratory Physiology & Neurobiology* 2009;169(3):333-337

Agents: Nicotine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2ML4; **Duration:** 1, 2 weeks;
ALZET Comments: Controls received mp w/ saline; animal info (Sprague-Dawley, female); functionality of mp verified by plasma nicotine levels; post op. care (buprenorphine, carprofen); wound clips used

Q0569: A. D. de Kloet, *et al.* The Effect of Angiotensin-Converting Enzyme Inhibition Using Captopril on Energy Balance and Glucose Homeostasis. *Endocrinology* 2009;150(9):4114-4123

Agents: Captopril **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Adult, male, Long Evans, 250-300 g); enzyme inhibitor (ACE); wound clips used; Research Diets

Q0469: H. I. Covington, *et al.* Antidepressant Actions of Histone Deacetylase Inhibitors. *Journal of Neuroscience* 2009;29(37):11451-11460

Agents: MS-275; hydroxamic acid **Vehicle:** Cyclodextrin, 2-hydroxypropyl-b-; **Route:** CSF/CNS (nucleus accumbens); **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (9-11 wks old, C57BL/6J, male); enzyme inhibitor (histone deacetylase); multiple pumps per animal (2); Plastics One bilateral guide cannula used; behavioral testing (social interaction, sucrose preference, forced-swim task, light/dark box); 5% cyclodextrin used; wound clips used; antidepressant; bilateral infusion;

P9927: B. M. Cleveland, *et al.* Insulin-like growth factor-I and genetic effects on indexes of protein degradation in response to feed deprivation in rainbow trout (*Oncorhynchus mykiss*). *American Journal of Physiology Regulatory, Integrative, and Comparable Physiology* 2009;297(5):R1332-R1342

Agents: Insulin-like growth factor-1, recomb. human **Vehicle:** Not Stated; **Route:** IP; **Species:** Fish; **Pump:** 1003D; **Duration:** Not Stated;
ALZET Comments: Post op.care (triple antibiotic ointment); animal info (rainbow trout.1 year old); wound clips used

Q0464: S. R. Chen, *et al.* Antinociceptive effects of chronic administration of uncompetitive NMDA receptor antagonists in a rat model of diabetic neuropathic pain. *Neuropharmacology* 2009;57(2):121-126

Agents: Neramexane mesylate; Memantine; Gabapentin **Vehicle:** Saline, sterile; Water; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, 225-250 g, STZ induced diabetes); functionality of mp verified by plasma drug levels; post op. care (penicillin); wound clips used; neuropathic pain



P9127: A. K. Stoker, *et al.* Affective and somatic aspects of spontaneous and precipitated nicotine withdrawal in C57BL/6J and BALB/cByJ mice. *Neuropharmacology* 2008;54(8):1223-1232

Agents: Nicotine tartrate **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 2002; 2004; **Duration:** 14, 28 days;
ALZET Comments: Animal info (adult, C57BL/6J, BALB/cByJ, 12-16 wks old); 7 mm stainless steel wound clips used; pumps removed day 15 and 29

P9771: J. R. Roche, *et al.* Long-Term Infusions of Ghrelin and Obestatin in Early Lactation Dairy Cows. *Journal of Dairy Science* 2008;91(12):4728-4740

Agents: Ghrelin, Dap³⁻; obestatin **Vehicle:** DMSO; **Route:** SC; **Species:** Cattle (cow); **Pump:** 2ML4; **Duration:** 8 weeks;
ALZET Comments: Controls were untreated; functionality of mp verified by residual volume; long-term study; pumps replaced after 28 days; animal info (multiparous); 50% DMSO used; wound clips used; peptides

P8816: A. M. Depino, *et al.* GABA homeostasis contributes to the developmental programming of anxiety-related behavior. *Brain Research* 2008;1210(189-199)

Agents: Diazepam **Vehicle:** DMSO; Propylene glycol; **Route:** SC; **Species:** Mice; Mice (neonate); **Pump:** 1002; 2002; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; dose-response (Fig. 1); no stress (see pg. 193); post op. care (flumazenil); animal info (C57BL/6 x 129/SvJ, male, 14 days old, 60 days old); 50% DMSO used; behavioral testing (maze); wound clips used; 50% propylene glycol used

P8886: M. E. Chapman, *et al.* Analysis of plasma serotonin levels and Hemodynamic responses following chronic serotonin infusion in broilers challenged with bacterial lipopolysaccharide and microparticles. *Poultry Science* 2008;87(1):116-124

Agents: Serotonin **Vehicle:** Saline; **Route:** SC; **Species:** Bird (broiler); **Pump:** 2ML2; **Duration:** 14 days;
ALZET Comments: Controls received sham surgery; animal info (male, wing-branded); wound clips used

P9167: F. Bretzner, *et al.* Undesired effects of a combinatorial treatment for spinal cord injury - transplantation of olfactory ensheathing cells and BDNF infusion to the red nucleus. *European Journal of Neuroscience* 2008;28(9):1795-1807

Agents: Brain-derived neurotrophic factor **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2002; **Duration:** 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, adult, 300-400 g.); 28 gauge cannula, silastic tubing used; spinal cord injury; wound clips used

P8963: J. C. Sadeu, *et al.* Study of folliculogenesis in vivo in guinea pig. *Theriogenology* 2007;68(9):1228-1239

Agents: Uridine, bromodeoxy **Vehicle:** Saline; **Route:** SC; **Species:** Guinea pig; **Pump:** 2ML1; **Duration:** 1, 2 weeks;
ALZET Comments: Animal info (female, Dunkin-Hartley, 560-750); wound clips used

P8623: O. H. Khan, *et al.* Calcium antagonism in neonatal rats with kaolin-induced hydrocephalus. *Journal of Child Neurology* 2007;22(10):1161-1166

Agents: Magnesium chloride; MAfferent signalling through the common hepatic branch of the vagus inhibits voluntary lard intake and modifies plasma metabolite levels in rats
magnesium sulfate **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (neonate); **Pump:** 2002; 2004; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ saline, equimolar; dose-response (table 1); comparison of SC injections vs. mp; stress/adverse reaction : (see pg 1162) high magnesium sulfate concentrations led to necrosis and skin sloughing at implant site; animal info (Sprague-Dawley, P7); skin was closed with staples (wound clips used)

P8198: A. I. Bakardjiev, *et al.* Listeria monocytogenes traffics from maternal organs to the placenta and back. *PLoS Pathog* 2006;2(6):e66

Agents: Gentamicin sulfate **Vehicle:** Not Stated; **Route:** SC; **Species:** Guinea pig (pregnant); **Pump:** 2ML1; **Duration:** Not Stated;
ALZET Comments: Functionality of mp verified by plasma levels taken; teratology; listeria; wound clips used



P7570: I. H. C. H. Philippens, *et al.* Stress adversely affects efficacy of physostigmine-scopolamine pretreatment against soman in guinea pigs. *Pharmacology Biochemistry and Behavior* 2005;82(1):125-132

Agents: Physostigmine; Scopolamine bromide **Vehicle:** Water, distilled; Propylene glycol; Acetic acid, glacial; Ethanol; **Route:** SC; **Species:** Guinea pig; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Controls received mp w/ vehicle; post op. care (nobecutane); animal info (male, dunkin-hartley albino, 400-450 g); 10% ETOH; wound clips used

P7383: G. E. Demas, *et al.* Leptin regulates energetic tradeoffs between body fat and humoral immunity. *Proceedings of the Royal Society B-Biological Sciences* 2005;272(1574):1845-1850

Agents: Leptin, recomb. murine **Vehicle:** Tris buffer; **Route:** SC; **Species:** Hamster; **Pump:** 2002; **Duration:** 10 days;

ALZET Comments: Controls received mp w/ vehicle; leptin plasma levels taken; peptides; obesity; animal info (female, >60 days old, siberian); wound clips used

P7133: P. L. Brooks, *et al.* Dopamine agonist treatment before and after the birth reduces prolactin concentration but does not impair paternal responsiveness in Djungarian hamsters *Phodopus campbelli*. *Hormones and Behavior* 2005;47(3):358-366

Agents: Bromocriptine **Vehicle:** Saline, isotonic; Ethanol; tartaric acid; **Route:** SC; **Species:** Hamster; **Pump:** 1003D; **Duration:** 3 days;

ALZET Comments: Controls received mp w/ vehicle; comparison of SC injections vs. mp; 10% ethanol; mp primed in 37 degrees celsius saline for >4 hours; wound clips used

P7044: T. L. Auchtung, *et al.* Prolactin mediates photoperiodic immune enhancement: Effects of administration of exogenous prolactin on circulating concentrations, receptor expression, and immune function in steers. *Biology of Reproduction* 2004;71(6):1913-1918

Agents: Prolactin, recomb. bovine **Vehicle:** Saline; **Route:** SC; **Species:** Cattle; **Pump:** 2ML2; **Duration:** 10 days;

ALZET Comments: Comparison of IV injections vs mp; no stress (see pg. 1914); immunology; peptides; post op. care (prodine, excenel); each animal received 4 rounds of 10 day prolactin treatment (2 w/ mp, 2 IV injection) with 11 days of non treatment between each round; wound clips used

P6365: P. Turrone, *et al.* Differential effects of within-day continuous vs transient dopamine D2 receptor occupancy in the development of vacuous chewing movements (VCMs) in rats. *Neuropsychopharmacology* 2003;28(8):1433-1439

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

ALZET Comments: Haloperidol plasma levels taken; comparison of SC injections vs. SC mp; long-term study; pumps replaced every 4 weeks; Vetbond glue and wound clips used to close wounds; "...minipump treated animals had stable haloperidol plasma levels throughout the day...subcutaneously [injection] treated rats experienced a dramatic decline over the same period." p. 1437

P7118: D. B. Gilberto, *et al.* Use of three infusion pumps for postoperative administration of buprenorphine or morphine in dogs. *JAVMA* 2002;220(11):1655-1660

Agents: Buprenorphine **Vehicle:** Not Stated; **Route:** SC; **Species:** Dog; **Pump:** 2ML1; **Duration:** 48 hours;

ALZET Comments: Animal info (young adult, beagle or mixed breed, 8.4-12.8 kg); Functionality of mp verified by residual volume and serum buprenorphine levels; comparison of infudisk, pegasus vs. ALZET vs. mp; multiple pumps per animal (3,4); mp primed overnight in sterile saline; paper provides list of most possible negative outcomes. Upon pump removal the incisions were closed with tissue glue; ALZET pump was the most cost effective method; wound clips used

Q0933: L. G. Thaete, *et al.* Differential Effects of Endothelin A and B Receptor Antagonism on Fetal Growth in Normal and Nitric Oxide-Deficient Rats. *J. Soc. Gynecol. Invest* 2001;8(1):18-23

Agents: FR-139317; L-NAME; A-127722; A-182086 **Vehicle:** Ethyl alcohol; propylene glycol; sodium hydroxide; water; **Route:** IV (jugular); **Species:** Rat (pregnant); **Pump:** Not Stated; **Duration:** 7 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague-Dawley); teratology; peptides; multiple pumps per animal (2); 20% ethyl alcohol used; wound clips used