



## References (2015-Present) Using ALZET® Osmotic Pumps and Measuring Plasma Concentrations

**Q10721:** Y. Wada, *et al.* Compromised Blood Flow in the Optic Nerve Head after Systemic Administration of Aldosterone in Rats: A Possible Rat Model of Retinal Ganglion Cell Loss. *Current Eye Research* 2022;47(5):777-785

**Agents:** Aldosterone **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 4 weeks;

**ALZET Comments:** Dose (80 ug/kg/d); Controls received mp w/ vehicle; animal info (Male; Pigmented Brown Norway; 20 weeks old); Blood pressure measured via automatic sphygmomanometer; functionality of mp verified by plasma levels;

**Q10672:** J. Santiago-Moreno, *et al.* Expression of Aquaglyceroporins in Spermatozoa from Wild Ruminants Is Influenced by Photoperiod and Thyroxine Concentrations. *International Journal of Molecular Sciences* 2022;23(6):

**Agents:** Thyroxine **Vehicle:** Saline; **Route:** SC (lateral shoulder); **Species:** Ibex (Iberian); **Pump:** 2ML2; **Duration:** 56 days;

**ALZET Comments:** Dose (164 µg/day); 0.9% normal saline used; T4 aka thyroxine; pumps replaced after 14 days; functionality of mp verified by plasma concentrations

**Q8663:** M. Methawasin, *et al.* Phosphodiesterase 9a Inhibition in Mouse Models of Diastolic Dysfunction. *Circulation Heart Failure* 2020;13(5):e006609

**Agents:** PF-4449613 **Vehicle:** Not stated; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;

**ALZET Comments:** Dose (1, 5, or 8 mg/kg per day); Controls received mp w/ vehicle; animal info (Male Leprdb/db mice at ≈3.5 months of age); functionality of mp verified by plasma measuring; PF-4449613 aka phosphodiesterases 9a inhibitor; cardiovascular;

**Q7160:** Y. W. Yu, *et al.* Glucose-Dependent Insulinotropic Polypeptide Mitigates 6-OHDA-Induced Behavioral Impairments in Parkinsonian Rats. *Int J Mol Sci* 2018;19(4):

**Agents:** Glucose-dependent insulinotropic polypeptide **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 2 weeks;

**ALZET Comments:** Dose (7.8 or 15 nmol/kg/day); Controls received mp w/ vehicle; behavioral testing (Open field test); functionality of mp verified by plasma levels; Resultant plasma level (GIP administration at 15 nmol/kg/day resulted in total GIP plasma levels of 203.9 pmol/L); neurodegenerative (Parkinson's);

**Q7022:** T. R. Harris, *et al.* Celecoxib Does Not Protect against Fibrosis and Inflammation in a Carbon Tetrachloride-Induced Model of Liver Injury. *Mol Pharmacol* 2018;94(2):834-841

**Agents:** Celecoxib, PTUPB **Vehicle:** PEG 400, DMSO; **Route:** SC; **Species:** Mice; **Pump:** 2006; **Duration:** 45 days;

**ALZET Comments:** Dose (10mg/kg/d); 50% PEG400 and 50% DMSO used; animal info (Male C57BL/6NCrl mice (~25 g)); functionality of mp verified by plasma levels; celecoxib is a cyclooxygenase-2 (COX-2) selective inhibitor; enzyme inhibitor (cyclooxygenase-2, soluble epoxide hydrolase);

**Q5970:** J. M. Resch, *et al.* Aldosterone-Sensing Neurons in the NTS Exhibit State-Dependent Pacemaker Activity and Drive Sodium Appetite via Synergy with Angiotensin II Signaling. *Neuron* 2017;96(1):190-206 e7

**Agents:** Aldosterone **Vehicle:** Ethanol; **Route:** IP; **Species:** Mice; **Pump:** 1002; **Duration:** 8-12 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (4-5 week old); functionality of mp verified by plasma aldosterone levels; 5% ethanol used; Dose (900 ug/mL);

**Q6363:** J. Lukas, *et al.* Glucosylsphingosine Causes Hematological and Visceral Changes in Mice-Evidence for a Pathophysiological Role in Gaucher Disease. *Int J Mol Sci* 2017;18(10):

**Agents:** Glucosylsphingosine **Vehicle:** DMSO; Propylene glycol; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 12 weeks;

**ALZET Comments:** Dose (10 mg/kg/day); 50% DMSO:50% propylene glycol used; Controls received mp w/ vehicle; animal info (Male C57BL/6Jrj mice); functionality of mp verified by plasma levels; pumps replaced every 4 weeks; long-term study (12 weeks); Resultant plasma level (between 700 and 900 ng/mL); no stress: The pumps were well tolerated and no mortalities were observed (see pg. 11); good methods (p.10); Lyso-Gb1 levels were strongly elevated after four, eight and 12 weeks (levels ranging between 700 and 900 ng/mL). This represented a >500-fold increase compared with vehicle-treated mice



**Q5325:** L. M. Burrell, *et al.* Adverse cardiac effects of exogenous angiotensin 1-7 in rats with subtotal nephrectomy are prevented by ACE inhibition. *PLoS One* 2017;12(2):e0171975

**Agents:** Angiotensin 1-7 **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** Not Stated;

**ALZET Comments:** Sham operated controls received mp w/ vehicle; animal info (Sprague Dawley rats weighing 200-250g); functionality of mp verified by plasma levels, residual volume and Ang 1-7 concentration in residual volume; no stress (see pg. 2/12); animals were monitored daily for the length of the experiment. No adverse events were observed; cardiovascular; Dose (24 µg/kg/h);

**Q6111:** S. M. Brown, *et al.* Dipeptidyl Peptidase-4 Inhibition With Saxagliptin Ameliorates Angiotensin II-Induced Cardiac Diastolic Dysfunction in Male Mice. *Endocrinology* 2017;158(10):3592-3604

**Agents:** Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 3 weeks;

**ALZET Comments:** Dose (500 ng/kg/min); Controls received mp w/ vehicle; animal info (13 week old C57BL/6J mice); functionality of mp verified by plasma aldosterone levels, which were quantified by radioimmunoassay as an indication of Ang II minipump efficacy.;

**Q4111:** N. Agarwal, *et al.* HIV-1 viral protein R (Vpr) induces fatty liver in mice via LXRA and PPARα dysregulation: implications for HIV-specific pathogenesis of NAFLD. *Sci Rep* 2017;7(1):13362

**Agents:** HIV-1 viral protein R, synthetic **Vehicle:** Water, sterile; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

**ALZET Comments:** Dose (5 µg/day); Controls received mp w/ vehicle; functionality of mp verified by plasma levels; "Subcutaneous delivery of sVpr results in sustained, high Vpr concentrations in the plasma (median 839.2 pg/ml, range 381.9–983.3 pg/ml)." pg. 11;

**Q5107:** M. Zenitani, *et al.* C-type natriuretic peptide in combination with sildenafil attenuates proliferation of rhabdomyosarcoma cells. *Cancer Medicine* 2016;5(5):795-805

**Agents:** C-type natriuretic peptide; **Route:** SC; **Species:** Mice (nude); **Pump:** 1003D; **Duration:** 3 days; 4 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, C57BL6 or BALB/c nu/ny, 5 weeks old); functionality of mp verified by plasma levels (figure 4B); cancer (rhabdomyosarcoma RD-GC-B); xenograft model; Dose (2.5 µg/kg/min); Resultant plasma level (~600 pmol/L; see figure 4B);

**Q5505:** Y. W. Yu, *et al.* Glucose-Dependent Insulinotropic Polypeptide Ameliorates Mild Traumatic Brain Injury-Induced Cognitive and Sensorimotor Deficits and Neuroinflammation in Rats. *J Neurotrauma* 2016;33(22):2044-2054

**Agents:** Glucose-dependent insulinotropic polypeptide **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Duration:** 7 days; 2 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-300g, adult); functionality of mp verified by plasma levels (pg 2049); behavioral testing (Morris water maze; recognition memory test; beam walking test; novel object recognition); peptides; traumatic brain injury; Dose (21.58 or 38.85 µg/kg/day); Resultant plasma level (58.6 +/- 11.8 pmol/L);

**Q7508:** M. R. Wiley, *et al.* Use of Osmotic Pumps to Establish the Pharmacokinetic-Pharmacodynamic Relationship and Define Desirable Human Performance Characteristics for Aggrecanase Inhibitors. *J Med Chem* 2016;59(12):5810-22

**Agents:** Aggrecanase Inhibitors **Vehicle:** PEG 300; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** Not Stated;

**ALZET Comments:** Dose (1.44 to 30 mg/mL); functionality of mp verified by plasma levels; enzyme inhibitor (Aggrecanase); neurodegenerative (osteoarthritis, Alzheimer's, multiple sclerosis); "The use of osmotic pumps allows plasma drug levels to be held at a steady state over the entire time course of an experiment, effectively eliminating the peak to trough ratio." pg. 5813; Pharmacokinetics;

**Q4902:** C. Weber, *et al.* Macrophage Infiltration and Alternative Activation during Wound Healing Promote MEK1-Induced Skin Carcinogenesis. *Cancer Research* 2016;76(4):805-817

**Agents:** arginine, N(omega)-hydroxy-nor-I **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 33 days;

**ALZET Comments:** animal info (InvEE); functionality of mp verified by plasma levels; stress/adverse reaction: (see pg. 811); stability verified by (10 days see pg 811); immunology; "Continuous dosing at a rate of 0.25 mL per hour ensured constant compound levels. Successful ARG1 inhibition was confirmed in blood plasma and wounded skin samples taken 5 days after implantation" pg 811; nor-NOHA aka N(omega)-hydroxy-nor-I-arginine;



**Q5081:** A. E. Tschiffely, *et al.* A comparative evaluation of treatments with 17beta-estradiol and its brain-selective prodrug in a double-transgenic mouse model of Alzheimer's disease. *Horm Behav* 2016;83(39-44

**Agents:** DHED; estradiol, 17B- **Vehicle:** Propylene glycol; **Route:** SC; **Species:** Mice (transgenic); **Pump:** 2004; **Duration:** 8 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (female, APP<sup>swe</sup>/PS1<sup>dE9</sup>, 6 months old); functionality of mp verified by plasma levels (see figure S1 - E2 only; no assay for DHED); pumps replaced every 4 weeks; neurodegenerative (Alzheimer's); replacement therapy (estradiol infusion); DHED aka 10β,17β-dihydroxyestra-1,4-dien-3-one; Dose (2 ug/day); Industry authored (AgyPharma LLC);

**Q5073:** V. Tiyerili, *et al.* Anti-atherosclerotic effects of serelaxin in apolipoprotein E-deficient mice. *Atherosclerosis* 2016;251(430-7

**Agents:** Serelaxin **Vehicle:** Sodium acetate; **Route:** SC; **Species:** Mice; **Pump:** 2006; **Duration:** 4 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (female, ApoE -/-, 6-8 weeks old); functionality of mp verified by plasma levels; functionality of mp verified by plasma levels; cardiovascular; peptides; bp measured using tail cuff; Dose (0.05 or 0,1 ug/h);

**Q4893:** B. W.-R. Shruthi Vaidhyathan, Daniel J. Ma, Karen E. Parrish, *et al.* Factors Influencing the Central Nervous System Distribution of a Novel Phosphoinositide 3-Kinase/Mammalian Target of Rapamycin Inhibitor GSK2126458: Implications for Overcoming Resistance with Combination Therapy for Melanoma Brain Metastases. *The Journal of Pharmacology and Experimental Therapeutics* 2016;356(251-259

**Agents:** GSK2126458; trametinib, dabrafenib **Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Pump:** Not Stated; **Duration:** 48 hours;

**ALZET Comments:** animal info (WT, Mdr1a/b -/-, Bcrp1 -/-); functionality of mp verified by plasma concentration; pumps primed overnight in 37C saline;

**Q4878:** T. K. Rudolph, *et al.* Nitrated fatty acids suppress angiotensin II-mediated fibrotic remodelling and atrial fibrillation. *Cardiovascular Research* 2016;109(174-184

**Agents:** Nitro-octadec-9-enoic acid, 10-; angiotensin II **Vehicle:** PEG; ethanol; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 2 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (C57Bl6J); functionality of mp verified by plasma levels; 90% PEG used; 10% ethanol used; cardiovascular; peptides; Dose (Nitro-octadec-9-enoic acid, 10- 6 mg/kg; angiotensin II 1.5 ng/g/min);

**Q6176:** G. Raghuraman, *et al.* PKCepsilon mediates resistin-induced NADPH oxidase activation and inflammation leading to smooth muscle cell dysfunction and intimal hyperplasia. *Atherosclerosis* 2016;253(29-37

**Agents:** Resistin, V1-2, epsilon **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** Not Stated;

**ALZET Comments:** Dose: resistin (1 µg/day), εV1-2 (3 mg/kg/day) ; Controls received mp w/ vehicle; animal info (6–8 week old male ApoE-/- mice on C57BL/6 background); functionality of mp verified by plasma levels; εV1-2 is a PKCε-specific peptide inhibitor; "Analyses of plasma showed 4.5 fold higher resistin levels in mice implanted with resistin pump."

**Q4870:** V. Parikh, *et al.* Cognitive control deficits during mecamylamine-precipitated withdrawal in mice: Possible links to frontostriatal BDNF imbalance. *NEUROBIOLOGY OF LEARNING AND MEMORY* 2016;128(110-116

**Agents:** Nicotine hydrogen tartrate **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, C57BL6J, 8-10 weeks old, 20-25g); functionality of mp verified by plasma cotinine levels; behavioral testing (visual discriminations, operant training); dependence; Dose (18 mg/kg/day free base resulted in 100-150 ng/ml plasma cotinine levels);

**Q4908:** MingWu, *et al.* Placental growth factor 2 — A potential therapeutic strategy for chronic myocardial ischemia. *International Journal of Cardiology* 2016;203(534-542

**Agents:** Placental growth factor-2, recombinant human **Vehicle:** PBS; **Route:** IV; **Species:** Pig; **Pump:** 2ML2; **Duration:** 14 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (Sus Scrofa, 20-25kg); functionality of mp verified by plasma levels; ischemia (myocardial); cardiovascular; Dose (15 ug/kg/day);



**Q5421:** J. K. McCreary, *et al.* Altered brain morphology and functional connectivity reflect a vulnerable affective state after cumulative multigenerational stress in rats. *Neuroscience* 2016;330(79-89

**Agents:** Manganese Chloride **Vehicle:** NaOH, TRIS-HCL buffer; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2001; **Duration:** 7 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (120-day old MPS and non-stress control female Long-Evans rats); functionality of mp verified by plasma levels; no stress, "no toxic effects were anticipated or observed" (see pg. 81); behavioral testing (open-field exploration testing); MRI imaging every second day, total of 5 time points; Multigenerational prenatal stress model; stress response measured by plasma corticosterone levels and open-field exploration in each generation; MRI-compatible pumps used (PEEK); Dose (7.14 mg/kg);

**Q5397:** N. K. Littlejohn, *et al.* Suppression of Resting Metabolism by the Angiotensin AT2 Receptor. *Cell Reports* 2016;16(6):1548-1560

**Agents:** Angiotensin II, CGP-42112a, Epidermal growth factor **Vehicle:** Saline; **Route:** SC; **Species:** Mice (transgenic); **Pump:** Not Stated; **Duration:** 2 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, AT2-KO mice); functionality of mp verified by plasma levels; dose-response; Angiotensin AT2 receptor; Dose (CGP 50, 100 ng/kg/min, EGF 0.833 ug/hr);

**Q4854:** V. V. Lima, *et al.* Interleukin-10 limits increased blood pressure and vascular RhoA/Rho-kinase signaling in angiotensin II-infused mice. *Life Sci* 2016;145(137-143

**Agents:** Angiotensin II; interleukin-10, recombinant mouse; **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, IL-10 -/- or WT, 10-12 weeks old); functionality of mp verified by plasma levels; immunology; bp measured using catheter; Dose (Ang II 90 ng/min; IL-10 0.5 ng/min);

**Q4844:** L. Kopkan, *et al.* Conditional knockout of collecting duct bradykinin B2 receptors exacerbates angiotensin II-induced hypertension during high salt intake. *Clinical and Experimental Hypertension* 2016;38(1):1-9

**Agents:** Angiotensin II **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 2 weeks;

**ALZET Comments:** animal info (UB Bdkrb2-/- or Bdkrb2 flox/flox, 10-16 weeks old); functionality of mp verified by plasma levels; cardiovascular; peptides; bp measured using radiotelemetry (DSI); Dose (100 ng/kg/min); good bp graph;

**Q5381:** K. Kohashi, *et al.* A Dipeptidyl Peptidase-4 Inhibitor but not Incretins Suppresses Abdominal Aortic Aneurysms in Angiotensin II-Infused Apolipoprotein E-Null mice. *Journal of Atherosclerosis and Thrombosis* 2016;23(4):441-454

**Agents:** Angiotensin II; Glucagon-like peptide-1; Glucose-dependent insulinotropic polypeptide **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 4 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (ApoE -/- mice, 9 weeks old); functionality of mp verified by plasma levels, blood pressure; pumps replaced every 2 weeks; Multiple pumps per animal (2); 1 for either Ang II, GLP-1 or GIP; enzyme inhibitor (Dipeptidyl Peptidase-4 inhibitor); cardiovascular; atherosclerosis; peptides; Pathophysiology similarities btwn abdominal aortic aneurysms, atherosclerosis; Therapeutic indication (Abdominal aortic aneurysm); blood pressure measure via tail-cuff method; Dose (2000 ng/kg/min AngII, 2.16 nmol/kg/day GLP-1, 25 nmol/kg/day GIP); Resultant blood pressure (Start: 104 mmHg, End: 118 mmHg);

**Q5380:** M. Kockx, *et al.* Low-Density Lipoprotein Receptor-Dependent and Low-Density Lipoprotein Receptor-Independent Mechanisms of Cyclosporin A-Induced Dyslipidemia. *Arteriosclerosis, Thrombosis, and Vascular Biology* 2016;36(7):1338-49

**Agents:** Cyclosporine A **Vehicle:** Ethanol; Cremophor EL; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 4 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (female mice, C57Bl/6, 18-20 g); functionality of mp verified by plasma levels; 33% ethanol, 62% Cremophor EL used; toxicology; Cyclosporine A aka CsA; CsA does not induce liver or kidney toxicity; Dose (20 mg/kg/day); Resultant plasma level (1087±124 ng/mL, 711±91 ng/mL after 1 week, 4 weeks);



**Q4841:** A. Kawamura, *et al.* Teratocarcinomas Arising from Allogeneic Induced Pluripotent Stem Cell-Derived Cardiac Tissue Constructs Provoked Host Immune Rejection in Mice. *SCIENTIFIC REPORTS* 2016;6(1-13)

**Agents:** Tacrolimus (cyclosporin) **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 27 days;  
**ALZET Comments:** cancer (teratocarcinoma); immunology; animal info (BALB/c); functionality of mp verified by plasma levels; pumps replaced after 14 days; BLI; Dose (1.5 mg/kg);

**Q5355:** K. Karimi Galoughi, *et al.* beta3 Adrenergic Stimulation Restores Nitric Oxide/Redox Balance and Enhances Endothelial Function in Hyperglycemia. *J Am Heart Assoc* 2016;5(2):

**Agents:** S961; CL 316,243 **Vehicle:** Saline; **Route:** SC; **Species:** Rabbit; **Pump:** 2ML1; **Duration:** 3 days, 7 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male New Zealand White rabbits, 2.2 – 2.6 kg); functionality of mp verified by plasma levels; Diabetes-induced vascular dysfunction; Hyperglycemia study; Dose (12 ug/kg/hr S961, 40 ug/kg/hr CL);

**Q5377:** A. Ichikawa, *et al.* Ketoconazole-induced estrogen deficiency causes transient decrease in placental blood flow associated with hypoxia and later placental weight gain in rats. *Reprod Toxicol* 2016;63(62-9)

**Agents:** Estradiol, 17-beta- **Vehicle:** Ethanol, Propylene Glycol; **Route:** SC; **Species:** Rat; **Pump:** 1003D; **Duration:** 3 days;  
**ALZET Comments:** animal info (Female Crl:CD (SD) rats, 11-12 weeks old); functionality of mp verified by plasma levels; 0.5% ethanol, 99.5% Propylene glycol used; dose-response (pg 63); E2 aka estradiol-17beta; hypoxia and later placental weight gain in rats; Dose (0, 0.1, or 1 ug/rat/day); Plasma Level: Lower limit of sensitivity (measured by double-antibody radioimmunoassay (RIA); 5 pg/mL);

**Q5363:** T. Hamada, *et al.* In vivo imaging of clock gene expression in multiple tissues of freely moving mice. *Nat Commun* 2016;7(11705)

**Agents:** Luciferin **Vehicle:** Not Stated; **Route:** IP; **Species:** mice; **Pump:** 2001; **Duration:** 7 days;  
**ALZET Comments:** animal info (Per1-luc mice, 5-9 months old); functionality of mp verified by plasma level; ALZET v iPrecio (10, 15, 30 ul/hr delivery); comparison of plasma levels with ALZET pump and iPrecio pump at different flow rates; Circadian rhythm; iPRECIO pump was connected to a 'modified free moving animal system' (complete tethering system); Dose (40 mg/ml); Resultant plasma level (> 0.2 ug/ul);

**Q5361:** D. Guo, *et al.* Levobupivacaine attenuates lipopolysaccharide-induced acute lung injury. *Fundam Clin Pharmacol* 2016;30(4):307-15

**Agents:** Levobupivacaine **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 24 hours;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (adult male Sprague Dawley rats, 250-300 g); functionality of mp verified by plasma levels; dose-response (pg. 308, 312); immunology; Dose (0.5 mg/kg/hr, 1.0 mg/kg/hr, 1.5 mg/kg/hr); Resultant plasma level (pg. 312);

**Q5358:** A. Garcia-Alvarez, *et al.* Beta-3 adrenergic agonists reduce pulmonary vascular resistance and improve right ventricular performance in a porcine model of chronic pulmonary hypertension. *Basic Research in Cardiology* 2016;111(4):49

**Agents:** BRL37344 **Vehicle:** Saline; **Route:** IV (right jugular vein); **Species:** Pigs; **Pump:** 2ML2; **Duration:** 14 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (pig, 4 months old, 45 kg); functionality of mp verified by plasma levels; cardiovascular; antihypertensive; PE-60 catheter used for IV application; BRL37344 is a B3AR agonist; Dose (10 ug/kg/day BRL37344);

**Q5352:** G. S. Forkuo, *et al.* Development of GABAA Receptor Subtype-Selective Imidazobenzodiazepines as Novel Asthma Treatments. *Mol Pharm* 2016;13(6):2026-38

**Agents:** XHE-III-74EE **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;  
**ALZET Comments:** Dexamethasone used as positive control; animal info (Ova S/C Balb/c mice); functionality of mp verified by plasma level; comparison of injection vs mp (pg. 2035); "Pump delivery of XHE-III-74EE was effective in reducing AHR at low concentrations of methacholine" (pg 2032); "The response was more significant for a continuous release using implanted minipumps, which delivered blood concentration of 27.2 ng/mL of XHE-III-74EE compared to a cmax of 216 ng/mL with a twice daily i.p. injections" (pg. 2035); Reduces airway hyper-responsiveness in mice; Dose (20 mg/kg/day); Resultant plasma level (27.2 ± 2.7 ng/g);



**Q5304:** H. C. Denroche, *et al.* Disrupted Leptin Signaling in the Lateral Hypothalamus and Ventral Premammillary Nucleus Alters Insulin and Glucagon Secretion and Protects Against Diet-Induced Obesity. *Endocrinology* 2016;157(7):2671-85  
**Agents:** Leptin, recombinant mouse **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1007D, 1002; **Duration:** 15 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (Male Lepr<sup>flx/flox</sup> and Lepr<sup>flx/flox</sup> Syn-cre mice, 12-14 wks); functionality of mp verified by plasma levels; pumps replaced after day 10; dose-response (pg. 2679); diabetes; Dose (10 ug/d or 20 ug/d);

**Q5305:** A. D. de Kloet, *et al.* Angiotensin Type-2 Receptors Influence the Activity of Vasopressin Neurons in the Paraventricular Nucleus of the Hypothalamus in Male Mice. *Endocrinology* 2016;157(8):3167-80

**Agents:** Compound 21 **Vehicle:** CSF, artificial; Saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; Rats; **Pump:** Not Stated; **Duration:** 1 week;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (Male mice (10–12 wk old) or rats (4–6 wk old)); functionality of mp verified by plasma vasopressin levels; ALZET brain infusion kit used; ALZET brain infusion kit used; Brain coordinates; from bregma 0.2 mm posterior, 1.0 mm lateral, and 2.5 mm ventral; Dose (7.5 ng/kg/hr);

**Q4821:** Daniel G. Donner, *et al.* Trenbolone Improves Cardiometabolic Risk Factors and Myocardial Tolerance to Ischemia-Reperfusion in Male Rats With Testosterone-Deficient Metabolic Syndrome. *Endocrinology* 2016;157(1):368-381

**Agents:** Testosterone; trenbolone **Vehicle:** Cyclodextrin, 2-hydroxypropyl-b-; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 8 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Wistar, 12 weeks old, 300g); functionality of mp verified by plasma; pumps replaced every 4 weeks; 45% cyclodextrin used; ischemia (cardiac); post op. care (buprenorphine 10 ug/kg/day IM; enrofloxacin 5 mg/kg ip for 3 days); long-term study; Dose (2 mg/kg/day);

**Q5631:** K. Bravo, *et al.* Perinatal Fluoxetine Exposure Impairs the CO<sub>2</sub> Chemoreflex. Implications for Sudden Infant Death Syndrome. *American Journal of Respiratory Cell and Molecular Biology* 2016;55(3):368-76

**Agents:** Fluoxetine **Vehicle:** DMSO; **Route:** SC; **Species:** Mice (pregnant); **Pump:** 2004; **Duration:** Not Stated;

**ALZET Comments:** Controls received mp w/ vehicle (dimethyl sulfoxide 40%); animal info (CF-1 mice: 5-7 days of gestation); functionality of mp verified by Plasma fluoxetine concentration determined by HPLC with a diode array detector; 40% DMSO used; teratology; "Delivering fluoxetine by osmotic minipumps was less stressful for dams than were oral gavages or injections; this avoided maternal stress, which has consequences on fetal brain development. The plasma concentration of fluoxetine in dams was similar to the reported plasma level in patients under fluoxetine treatment" pg 372; Therapeutic indication (Hypercapnia; respiration); Dose (7 mg/kg/day);

**Q5320:** M. Benlloch, *et al.* Pterostilbene Decreases the Antioxidant Defenses of Aggressive Cancer Cells In Vivo: A Physiological Glucocorticoids- and Nrf2-Dependent Mechanism. *Antioxidants & Redox Signaling* 2016;24(17):974-90

**Agents:** Pterostilbene, Corticosterone **Vehicle:** DMSO, Ethanol; PEG400; **Route:** IV (jugular); **Species:** Mice; **Pump:** Not Stated; **Duration:** 35 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info Female nu/nu nude mice (6–8 weeks); Vehicle solution DMSO and ethanol at 2:1 ratio; functionality of mp verified by plasma levels, pg 979; functionality of mp verified by plasma levels, pg 979; Pterostilbene is a natural dimethoxylated analog of resveratrol; Mice xenograft models; Dose (50 mg/ml Pter; 0.3 ug/hr corticosterone); Resultant plasma level (pg. 979);

**Q5322:** M. Bazargan, *et al.* Limited fetal metabolism of rosiglitazone: Elimination via the maternal compartment in the pregnant ewe. *Reprod Toxicol* 2016;61(162-8

**Agents:** Rosiglitazone Maleate **Vehicle:** Water, Ethanol; **Route:** SC; **Species:** Sheep (pregnant); **Pump:** 2ML1; **Duration:** 16 days;

**ALZET Comments:** animal info (Singleton pregnant sheep); functionality of mp verified by plasma level, amniotic fluid samples; 15% ethanol used; Multiple pumps per animal (4); stability verified by regular plasma level measurements (reached after day 5, tested through day 16; half-life of 24-48 hours in sheep); Catheters flushed with heparinized saline; Dose (2.7 mg/fetus/d);



**Q4685:** R. Zhang, *et al.* Long-Term Administration of Neuropeptide Y in the Subcutaneous Infusion Results in Cardiac Dysfunction and Hypertrophy in Rats. *Experimental Neurology* 2015;37(94-104

**Agents:** Neuropeptide Y **Vehicle:** PBS; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 30 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Wistar, 250-300g); functionality of mp verified by plasma levels; cardiovascular; peptides; pumps primed in 37C saline for 40 hours;

**Q5298:** V. Younes-Rapozo, *et al.* Neonatal Nicotine Exposure Leads to Hypothalamic Gliosis in Adult Overweight Rats. *J Neuroendocrinol* 2015;27(12):887-98

**Agents:** Nicotine **Vehicle:** Saline; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2ML2; **Duration:** 14 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (Wistar rats, pregnant); functionality of mp verified by plasma levels; Pumps primed for 24 hrs; Resultant plasma level (cotinine 25 ng/ml); Dose (6 mg/kg/d);

**Q5297:** J. Y. Youn, *et al.* Bone Morphogenic Protein 4 Mediates NOX1-Dependent eNOS Uncoupling, Endothelial Dysfunction, and COX2 Induction in Type 2 Diabetes Mellitus. *Mol Endocrinol* 2015;29(8):1123-33

**Agents:** Noggin **Vehicle:** NaCl, Acetic Acid; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 4 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (Male BKS.Cgm-/- Leprdb/J (db/db) diabetic mice); functionality of mp verified by plasma levels; diabetes; Resultant plasma level (pg. 1125); Resultant plasma level (pg. 1125);

**Q4662:** T. Yonezawa, *et al.* Anti-metastatic outcome of isoform-specific prolactin receptor targeting in breast cancer. *Cancer Letters* 2015;366(84-92

**Agents:** Prolactin, recombinant human; oligomer, splice-modulating **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** 5 days; 25 days; 40 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (female, BALB/cJ or NOD SCID, 8-9 weeks old); functionality of mp verified by plasma levels; pumps replaced every 28 days; cancer (breast); dose-response (pg 87);

**Q5293:** J. Wu, *et al.* Ouabain prevents pathological cardiac hypertrophy and heart failure through activation of phosphoinositide 3-kinase alpha in mouse. *Cell & Bioscience* 2015;5(64

**Agents:** Ouabain **Vehicle:** Not Stated; **Route:** SC; **Species:** mice; **Pump:** 2004; **Duration:** 4 weeks;

**ALZET Comments:** Controls received sham operation; animal info (12 weeks old, male mice); functionality of mp verified by plasma levels, blood pressure; Echocardiography; cardiovascular; Dose (50 ug/kg/day);

**Q4641:** L. Wen, *et al.* Inhibitors of ORAI1 Prevent Cytosolic Calcium-Associated Injury of Human Pancreatic Acinar Cells and Acute Pancreatitis in 3 Mouse Models. *GASTROENTEROLOGY* 2015;149(481-+

**Agents:** GSK-7975A **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 2001D; **Duration:** 22 hours;

**ALZET Comments:** Animal info (male, C57BL6J, 10 weeks old, 25g); functionality of mp verified by plasma levels;

**Q5452:** N. P. van Goethem, *et al.* Continuous infusion of the alpha7 nicotinic acetylcholine receptor agonist EVP-6124 produces no signs of tolerance at memory-enhancing doses in rats: a pharmacokinetic and behavioral study. *Behavioural Pharmacology* 2015;26(4):403-6

**Agents:** EVP6124 **Vehicle:** Saline; **Route:** Sc; **Species:** Rat; **Pump:** 2001; **Duration:** 6 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male Wistar rats of age 3-4 months, 417 g); functionality of mp verified by plasma levels; dose-response (pg. 405); behavioral testing (object recognition memory task); EVP6124 is an  $\alpha 7$  nicotinic acetylcholine receptor agonist; pharmacokinetics and behavioral study; memory-enhancing study; Rate of infusion =  $C_{ss} \times$  clearance; Dose (0.3, 1.0 mg/kg); targeted plasma level (0.6, 2.0 ng/mL);

**Q5577:** J. Trevaskis. Synergistic metabolic benefits of an exenatide analogue and cholecystokinin in diet-induced obese and leptin-deficient rodents. *Diabetes, Obesity and Metabolism* 2015;17(1):61-73

**Agents:** Amylin, Cholecystokinin-8, AC3174, , AC170236, AC170222 **Vehicle:** DMSO, water; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 14 or 28 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (Diet-induced Obese Rats); functionality of mp verified by plasma levels; Vehicle was 50% DMSO:50% water; Multiple pumps per animal (2); AC170236 is a CCK2R-selective agonist; Therapeutic indication (Obesity); Dose: amylin (50  $\mu$ g/kg/day), AC3174 (10  $\mu$ g/kg/day), CCK-8 (100  $\mu$ g/kg/day);



- Q4939:** N. M. Templeman, *et al.* Suppression of hyperinsulinaemia in growing female mice provides long-term protection against obesity. *Diabetologia* 2015;58(10):2392-402  
**Agents:** Insulin2, murine peptide **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (Ins1 -/-; 25 weeks old); functionality of mp verified by plasma insulin; peptides; diabetes; Dose (0.1 U/day);
- Q4937:** T. A. Slotkin, *et al.* Developmental Neurotoxicity of Tobacco Smoke Directed Toward Cholinergic and Serotonergic Systems: More Than Just Nicotine. *Toxicol Sci* 2015;147(1):178-89  
**Agents:** Nicotine; tobacco smoke extract **Vehicle:** DMSO; **Route:** Not Stated; **Species:** Rat; **Pump:** 2ML4; **Duration:** 28 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (female, non-pregnant, adult, Sprague Dawley); functionality of mp verified by plasma nicotine levels; dose-response (pg 181); teratology; Dose (Nicotine free base 0.2 or 2 mg/kg/day; TSE 0.18 mg/kg/day);
- Q5268:** P. Y. Shih, *et al.* Nicotine Dependence Reveals Distinct Responses from Neurons and Their Resident Nicotinic Receptors in Medial Habenula. *Mol Pharmacol* 2015;88(6):1035-44  
**Agents:** Nicotine hydrogen-tartrate salt **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 14 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (Adult (2–3 months old) mice; C57BL/6 wild-type); functionality of mp verified by plasma levels; functionality of mp verified by plasma levels; dependence; Dose (1 mg/kg/hr); Resultant plasma level (0.3 uM; 40 ng/ml);
- Q5264:** S. Sharp, *et al.* Pharmacodynamic effects of C-domain-specific ACE inhibitors on the renin-angiotensin system in myocardial infarcted rats. *J Renin Angiotensin Aldosterone Syst* 2015;16(4):1149-58  
**Agents:** Lisinopril, LisW-S **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 7 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male Wistar rats (180–220 g)); functionality of mp verified by plasma level; cardiovascular; Dose (1 mg/kg/day);
- Q4568:** G. L. Powell, *et al.* Influence of developmental nicotine exposure on spike-timing precision and reliability in hypoglossal motoneurons. *JOURNAL OF NEUROPHYSIOLOGY* 2015;113(1862-1872  
**Agents:** Nicotine bitartrate **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** Not Stated; **Duration:** Not Stated;  
**ALZET Comments:** Controls received mp w/ saline; animal info (Sprague Dawley, GD5); functionality of mp verified by plasma cotinine levels; teratology;
- Q4566:** E. Plante, *et al.* Oxytocin Treatment Prevents the Cardiomyopathy Observed in Obese Diabetic Male db/db Mice. *Endocrinology* 2015;156(1416-1428  
**Agents:** Oxytocin **Vehicle:** NaCl; BSA; sodium citrate; **Route:** SC; **Species:** Mice; **Pump:** 2006; **Duration:** 12 weeks;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (C57BL/KsJ-leptdb-leptdb); functionality of mp verified by plasma levels; pumps replaced every 6 weeks; long-term study; diabetes; "After 6 weeks, the osmotic pumps were replaced to adjust the OT concentration for body weight gain." pg 1417;
- Q4543:** J. Nagel, *et al.* Brain concentrations of mGluR5 negative allosteric modulator MTEP in relation to receptor occupancy - Comparison to MPEP. *Pharmacological Reports* 2015;67(624-630  
**Agents:** MTEP **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Rat; **Pump:** 2ML1; **Duration:** 4 days;  
**ALZET Comments:** Animal info (male, Sprague Dawley, 230-250g); functionality of mp verified by plasma levels;
- Q4515:** C. Monterrubio, *et al.* Combined Microdialysis-Tumor Homogenate Method for the Study of the Steady State Compartmental Distribution of a Hydrophobic Anticancer Drug in Patient-Derived Xenografts. *Pharm Res* 2015;32(9):2889-900  
**Agents:** Irinotecan **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (nude); **Pump:** 2001D; **Duration:** 24 hours;  
**ALZET Comments:** animal info (athymic, nude); functionality of mp verified by plasma levels; cancer (neuroblastoma; HSJD-NB-003 or HSJD-NB-004); xenograft model; Dose (130 ug/h);





**Q5136:** M. Meredith M. Clancy DVM, *et al.* Pharmacokinetics of butorphanol delivered with an osmotic pump during a seven-day period in common peafowl (*Pavo cristatus*). *American Journal of Veterinary Research* 2015;76(12):1070-1076  
**Agents:** Butorphanol **Vehicle:** Not Stated; **Route:** SC; **Species:** Bird (peafowl); **Pump:** 2ML1; **Duration:** 7 days;  
**ALZET Comments:** animal info: 14 healthy adult male common peafowl; functionality of mp verified by plasma levels; good methods (pg. 1071-1072); "Use of these osmotic pumps may provide options for avian analgesia." pg 1070; analgesic administration to avian species; Pharmacokinetics; Dose: 247 ug/kg/h; Resultant plasma level ((mean, 106.4 ug/L; range, 61.8 to 133.0 ug/L)); Industry authored (Wildlife Conservation Society); Interesting (Plasma concentrations of butorphanol in common peafowl were maintained at or above reported efficacious analgesic concentrations; Use of these osmotic pumps may provide options for avian analgesia) pg. 1070

**Q4526:** E. Martinez-Martinez, *et al.* Interleukin-33/ST2 system attenuates aldosterone-induced adipogenesis and inflammation. *MOLECULAR AND CELLULAR ENDOCRINOLOGY* 2015;411(20-27  
**Agents:** Aldosterone **Vehicle:** NaCl; ethanol; **Route:** Not Stated; **Species:** Mice; **Pump:** Not Stated; **Duration:** 3 weeks;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, C57BL6, adult); 5% ethanol used; functionality of mp verified by plasma levels; cardiovascular; bp measured by tail cuff; 1 mg/kg/day

**Q5025:** R. Maayan, *et al.* Dehydroepiandrosterone Attenuates Cocaine-Seeking Behaviour Independently of Corticosterone Fluctuations. *J Neuroendocrinol* 2015;27(11):819-26  
**Agents:** Corticosterone **Vehicle:** DMSO; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-350g); functionality of mp verified by plasma levels; behavioral testing (lever pressing); dependence; Dose (15 mg/kg);

**Q3978:** R. Lim, *et al.* Activin and NADPH-oxidase in preeclampsia: insights from in vitro and murine studies. *American Journal of Obstetrics & Gynecology* 2015;212(U456-U467  
**Agents:** Activin A, recombinant human **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 2001; **Duration:** Not Stated;  
**ALZET Comments:** Controls received mp w/ saline; animal info (female, C57BL6, 8-10 weeks old, GD10); functionality of mp verified by plasma levels; teratology; preeclampsia model;

**Q4994:** X. C. Li, *et al.* Role of the Na<sup>+</sup>/H<sup>+</sup> exchanger 3 in angiotensin II-induced hypertension. *Physiol Genomics* 2015;47(10):479-87  
**Agents:** Angiotensin II **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Nhe3+/-, adult); functionality of mp verified by plasma levels; cardiovascular; bp measured using tail cuff; Dose (1.5 mg/kg/day);

**Q3967:** J. Li, *et al.* Impaired proliferation of pancreatic beta cells, by reduced placental growth factor in pre-eclampsia, as a cause for gestational diabetes mellitus. *Cell Proliferation* 2015;48(166-174  
**Agents:** Placental growth factor, human **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 10 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (female, Balb/c, GD9); functionality of mp verified by plasma levels; cardiovascular; bp measured using tail cuff;

**Q5007:** C. Lahmann, *et al.* Systemic Administration of Glibenclamide Fails to Achieve Therapeutic Levels in the Brain and Cerebrospinal Fluid of Rodents. *PLoS One* 2015;10(7):e0134476  
**Agents:** Glibenclamide **Vehicle:** CSF, artificial; DMSO; BSA; **Route:** CSF/CNS; **Species:** Rat; Mice; **Pump:** 2ML4; 2004;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (mice nV57M, 11-14 weeks old, 25-30g; rats male Lister-hooded, young adults, 200-300g); functionality of mp verified by plasma levels; rats ALZET brain infusion kit 2 used; mice ALZET brain infusion kit 3 used; 0.1% DMSO used; stability verified by (in vitro experimentation see pg 9); Cannula placement verified via histological analysis;



**Q4480:** T. Kimura, *et al.* Protective effects of C-type natriuretic peptide on cisplatin-induced nephrotoxicity in Mice. *Cancer Chemotherapy and Pharmacology* 2015;75(1057-1063

**Agents:** C-type natriuretic peptide **Vehicle:** Glucose; **Route:** SC; **Species:** Mice; **Pump:** 1003D; **Duration:** 72 hours;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (C57BL6, 6 weeks old); functionality of mp verified by plasma levels; 5% glucose used; cardiovascular; immunology; peptides;

**Q5017:** Y. Iwayanagi, *et al.* Inhibitory FcγRIIb-Mediated Soluble Antigen Clearance from Plasma by a pH-Dependent Antigen-Binding Antibody and Its Enhancement by Fc Engineering. *J Immunol* 2015;195(7):3198-205

**Agents:** Interleukin-6R, human soluble **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (transgenic); **Pump:** Not Stated;

**Duration:** 7 days;

**ALZET Comments:** animal info (WT or hFcRn Tg); functionality of mp verified by plasma levels;

**Q3910:** B. Gravez, *et al.* Aldosterone Promotes Cardiac Endothelial Cell Proliferation In Vivo. *JOURNAL OF THE AMERICAN HEART ASSOCIATION* 2015;4(U351-U365

**Agents:** Aldosterone **Vehicle:** Ethanol; saline; **Route:** Not Stated; **Species:** Mice; **Pump:** Not Stated; **Duration:** 1 week; 4 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, B6D2, 4 months old); functionality of mp verified by plasma levels; 10% ethanol used; cardiovascular; bp measured using tail cuff;

**Q4431:** M. M. Govender, *et al.* A Subpressor Dose of Angiotensin II Elevates Blood Pressure in a Normotensive Rat Model by Oxidative Stress. *PHYSIOLOGICAL RESEARCH* 2015;64(153-159

**Agents:** Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Wistar, 150g); functionality of mp verified by plasma levels (subpressor dose); cardiovascular; peptides; bp measured using tail cuff;

**Q3874:** J. D. Elsworth, *et al.* Low Circulating Levels of Bisphenol-A Induce Cognitive Deficits and Loss of Asymmetric Spine Synapses in Dorsolateral Prefrontal Cortex and Hippocampus of Adult Male Monkeys. *Journal of Comparative Neurology* 2015;523(1248-1257

**Agents:** Bisphenol A, deuterium-labeled **Vehicle:** Not Stated; **Route:** SC; **Species:** Monkey (African velvet); **Pump:** 2ML4;

**Duration:** 30 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, St, Kitts African vervet *S. sabaeus*, young); functionality of mp verified by plasma levels; behavioral testing (working memory performance); toxicology; "we administered BPA from a subcutaneous minipump that ensured a constant and reliable delivery of BPA" pg 1249; pumps removed after 30 days;

**Q3873:** M. El-Etr, *et al.* Progesterone and Nestorone Promote Myelin Regeneration in Chronic Demyelinating Lesions of Corpus Callosum and Cerebral Cortex. *Glia* 2015;63(104-117

**Agents:** Nestorone **Vehicle:** Molecusol; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 3 weeks;

**ALZET Comments:** Animal info (female, C57BL6, 8 weeks old, ovariectomized); functionality of mp verified by plasma levels; 40% molecusol used; neurodegenerative (multiple sclerosis);

**Q5278:** Ekaterina Subbotina, *et al.* Musclin is an activity-stimulated myokine that enhances physical endurance. *PNAS* 2015;112(52):16042-16047

**Agents:** Musclin **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 3 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (C57BL/6 WT control mice or Akt1-KO (Jackson Laboratory), 7-8 wk old); functionality of mp verified by plasma levels; behavioral testing (running wheels); Physical endurance study; Dose (50 ug);

**Q4401:** H. C. Denroche, *et al.* Leptin induces fasting hypoglycaemia in a mouse model of diabetes through the depletion of glycerol. *Diabetologia* 2015;58(1100-1108

**Agents:** Leptin, recombinant murine **Vehicle:** Water; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 14 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, C57BL6J, 8-10 weeks old, STZ); functionality of mp verified by plasma levels; diabetes;



**Q4786:** Chani M. Becker, *et al.* Decreased affinity for efflux transporters increases brain penetrance and molecular targeting of a PI3K/mTOR inhibitor in a mouse model of glioblastoma. *NEURO-ONCOLOGY* 2015;17(9):1210-1219

**Agents:** GNE-317; GDC-0980 **Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Pump:** 1003D; **Duration:** 48 hours;

**ALZET Comments:** animal info (WT or TKO); functionality of mp verified by plasma levels; cancer (glioblastoma); Dose (GNE-317 5 ug/hour; GDC-0980 10 ug/hr);

**Q4359:** K. H. Chang, *et al.* Vasculopathy-associated hyperangiotensinemia mobilizes haematopoietic stem cells/progenitors through endothelial AT(2)R and cytoskeletal dysregulation. *Nature Communications* 2015;6(U16-U26)

**Agents:** Angiotensin II **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (C57BL6 or AT1R KO, 6-20 weeks old); functionality of mp verified by plasma concentration; cardiovascular; peptides;

**Q3828:** A. J. Case, *et al.* Redox-Regulated Suppression of Splenic T-Lymphocyte Activation in a Model of Sympathoexcitation. *Hypertension* 2015;65(9)16-+

**Agents:** Norepinephrine **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

**ALZET Comments:** Controls received mp w/ saline; animal info (male, C57BL6, 20-25g, 8-12 weeks old); functionality of mp verified by plasma levels; good methods (see supplement); post op. care (incision cleaned with iodine); cardiovascular; immunology; bp measured using radiotelemetry (DSI);

**Q5121:** C. T. Appleton, *et al.* Reduction in disease progression by inhibition of transforming growth factor alpha-CCL2 signaling in experimental posttraumatic osteoarthritis. *Arthritis & Rheumatology* 2015;67(10):2691-701

**Agents:** AG1478; RS504393 **Vehicle:** DMSO; water, deionized; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 10 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; functionality of mp verified by plasma levels and knee articular cartilage; pumps replaced every 4 weeks; %50 of DMSO; long-term study; enzyme inhibitor (EGFR and CCR2 inhibitors); EGFR inhibitor AG1478, CCR2 inhibitor RS504393; Dose: (AG1478) 21 nmoles/kg/hour; (RS504393) 200 nmoles/kg/hour

**Q4306:** S. D. Alsharari, *et al.* Effects of Menthol on Nicotine Pharmacokinetic, Pharmacology and Dependence in Mice. *PLoS One* 2015;10(U459-U474)

**Agents:** Nicotine tartrate salt **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, ICR, 20-25g, adult); functionality of mp verified by plasma levels; behavioral testing (tail-flick test; somatic signs; elevated plus-maze); dependence; pumps removed after 7 days;

**Q4301:** Q. Ali, *et al.* Angiotensin AT(2) receptor agonist prevents salt-sensitive hypertension in obese Zucker rats. *American Journal of Physiology Renal Physiology* 2015;308(F1379-F1385)

**Agents:** FITC-inulin **Vehicle:** Saline; **Route:** IP; **Species:** Rat; **Pump:** 1002; **Duration:** 2 weeks;

**ALZET Comments:** Animal info (male, obese Zucker, 10-11 weeks old); functionality of mp verified by plasma levels; cardiovascular;