



**Recent References (2008-2018) on Toxicology Research
Using ALZET® Osmotic Pumps**

Q7153: T. Lilius, *et al.* Ketamine and norketamine attenuate oxycodone tolerance markedly less than that of morphine: from behaviour to drug availability. *Br J Anaesth* 2018;120(4):818-826

ALZET Comments: Morphine, oxycodone; Sterile water; SC; Rats; 2ML1; 7 days; Dose (oxycodone 3.6 mg day⁻¹); (morphine 40 mg ml⁻¹); animal info (Male Sprague-Dawley rats); behavioral testing (tail-flick, hot-plate tests); Toxicology (tolerance);

Q5170: T. Nojiri, *et al.* Atrial natriuretic peptide protects against cisplatin-induced granulocytopenia. *Cancer Chemother Pharmacol* 2016;78(1):191-7

ALZET Comments: Atrial natriuretic peptide; Saline; SC; Mice; 1003D; Controls received mp w/ vehicle; animal info (C57BL6, 7 weeks old); toxicology; immunology; Dose (1.5 ug/kg/min);

Q5168: T. Nojiri, *et al.* Protective effects of ghrelin on cisplatin-induced nephrotoxicity in mice. *Peptides* 2016;82(85-91)

ALZET Comments: Ghrelin; Saline; SC; Mice; 1003D; 3 days; Controls received mp w/ vehicle; Controls received mp w/ vehicle; toxicology; cardiovascular; Dose 0.8 ug/kg/min;

Q5451: Y. Mikhed, *et al.* Nitroglycerin induces DNA damage and vascular cell death in the setting of nitrate tolerance. *Basic Res Cardiol* 2016;111(4):52

ALZET Comments: Nitroglycerin; Glyceril Trinitrate; Ethanol; SC; Rat; 2001; 3.5 days; Controls received mp w/ vehicle; animal info (male Wistar rats, 6 weeks old, 300 grams); toxicology; cardiovascular; nitroglycerin is a vasodilator; Dose (10, 20 mg/kg/day);

Q5466: S. Mia, *et al.* Role of AMP-activated protein kinase alpha1 in angiotensin-II-induced renal Tgfss-activated kinase 1 activation. *Biochem Biophys Res Commun* 2016;476(4):267-272

ALZET Comments: Angiotensin II; SC; Mice; 2 weeks; Controls received mp w/ vehicle; animal info (Ampk(alpha)1 -/- mice); functionality of mp verified by analysis of renal tissue; toxicology; peptides; Angiotensin II key factor in renal fibrosis; Dose (1.46 mg/kg/day);

Q5409: H. Lui, *et al.* Combining 2-deoxy-D-glucose with fenofibrate leads to tumor cell death mediated by simultaneous induction of energy and ER stress. *ONCOTARGET* 2016;7(24):36461-36473

ALZET Comments: Fenofibrate; Glucose, 2-Deoxy; Saline; SC; Mice; 62 Days; Controls received mp w/ vehicle and oral gavage; cancer (human melanoma xenograft model); dose-response (pg 36469); toxicology; "slow-release pump seems to be an effective way to deliver 2-DG" pg 36470; Oral gavage vs. mp; dose given via mp requires 3 times lower total dose than IP injection (3x/week); Therapeutic indication (tumor growth); Dose (FF 100 mg/kg/day, 41 ug/ml/hr);

Q5408: S. J. Liu, *et al.* Sodium selenate retards epileptogenesis in acquired epilepsy models reversing changes in protein phosphatase 2A and hyperphosphorylated tau. *Brain* 2016;139(Pt 7):1919-38

ALZET Comments: Sodium Selenate; Sodium Chloride; SC; Rat; 2004, 2006; 4 weeks, 12 weeks; Controls received mp w/ vehicle; animal info (adult male Wistar and Long-Evans rats, 12 weeks); pumps replaced after initial 6 weeks; functionality of mp verified by residual volume; neurodegenerative (Traumatic brain injury, Alzheimer's disease); behavioral testing (neurotoxicity scale (0-4) testing); long-term study; Toxicology, sodium selenate; Epilepsy model; EEG used to monitor status epilepticus; Dose (1 mg/kg/day);

P2091: M. Liu, *et al.* A H 2 S Donor GYY4137 Exacerbates Cisplatin-Induced Nephrotoxicity in Mice. *Mediators Inflamm* 2016;2016(8145785)

ALZET Comments: GYY4137; DMSO; PEG; SC; Mice; 72 hours; animal info (Male C57BL/6 mice aged 8–10 weeks old); 1:1 mixture of DMSO:PEG used; toxicology; employed morpholin-4-ium-4-methoxyphenyl (morpholino) phosphinodithioate, a.k.a., GYY4137 is a novel slow releasing H2S donor; Therapeutic indication (Nephrotoxicity); Dose (21mg/kg/d);



Q5380: M. Kockx, *et al.* Low-Density Lipoprotein Receptor-Dependent and Low-Density Lipoprotein Receptor-Independent Mechanisms of Cyclosporin A-Induced Dyslipidemia. *Arterioscler Thromb Vasc Biol* 2016;36(7):1338-49

ALZET Comments: Cyclosporine A; Ethanol; Cremophor EL; SC; Mice; 2004; 4 weeks; 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);.

Q5376: N. J. Hunt, *et al.* Changes in orexinergic immunoreactivity of the piglet hypothalamus and pons after exposure to chronic postnatal nicotine and intermittent hypercapnic hypoxia. *Eur J Neurosci* 2016;43(12):1612-22

ALZET Comments: Nicotine hydrogen tartrate salt; Water; SC; Pig (mini); 2ML2; 14 days; Controls received mp w/ vehicle; animal info (male mixed breed miniature piglets, postnatal day 2, 1.27 kg); functionality of mp verified by brain analysis; toxicology; Chronic postnatal nicotine and intermittent hypercapnic hypoxia (IHH); Dose (2 mg/kg/day);.

Q7246: X. Bao, *et al.* Preclinical toxicity evaluation of a novel immunotoxin, D2C7-(scdsFv)-PE38KDEL, administered via intracerebral convection-enhanced delivery in rats. *Invest New Drugs* 2016;34(2):149-58

ALZET Comments: Immunotoxin, D2C7-(scdsFv)-PE38KDEL; CSF/CNS (right caudate nucleus); Rat; 2ML1, 2001; 72 hours; Dose (0, 0.05, 0.1, 0.35, 0.4 µg/rat/72 hrs); animal info (Sprague–Dawley; 13-17 weeks old; 360–460 g for males and 210–290 g for females); stability verified by (cytotoxicity assay); stability verified by (cytotoxicity assay); Brain coordinates (1 mm anterior to the bregma, 3 mm to the right of the cranium midline, and 5 mm into the caudate nucleus); cyanoacrylate adhesive (3 M Vetbond Tissue Adhesive); cancer (Glioblastoma); toxicology;.

Q4182: K. C. Wu, *et al.* Decreased expression of organic cation transporters, Oct1 and Oct2, in brain microvessels and its implication to MPTP-induced dopaminergic toxicity in aged mice. *Journal of Cerebral Blood Flow and Metabolism* 2015;35(37-47)

ALZET Comments: MPTP; Ringer's solution; CSF/CNS (striatum); Mice; 7 days; Controls received mp w/ vehicle; animal info (male, Oct1/2 -/-, young and aged B6, WT FVB); ALZET brain infusion kit used; toxicology;.

Q5289: A. Vivekanandarajah, *et al.* Postnatal nicotine effects on the expression of nicotinic acetylcholine receptors in the developing piglet hippocampus and brainstem. *Int J Dev Neurosci* 2015;47(Pt B):183-91

ALZET Comments: Nicotine Hydrogen Tartrate; water; IP; Pig (mini); 2ML2; 14 days; Controls received mp w/ vehicle; animal info (piglets); functionality of mp verified by blood and urine samples; toxicology; Dose (2 mg/kg/d); Resultant plasma level (20.3 ± 2.5 ng/mL);.

Q5281: M. Tremblay-Franco, *et al.* Dynamic Metabolic Disruption in Rats Perinatally Exposed to Low Doses of Bisphenol-A. *PLoS One* 2015;10(10):e0141698

ALZET Comments: Bisphenol A; DMSO; SC; Rat (pregnant); 2004; 28 days; Controls received mp w/ vehicle; animal info (Sexually mature virgin female SD rats (8–10 weeks)); functionality of mp verified by Blood and liver levels; 50% DMSO used; toxicology; implanted on day 9 of pregnancy; Dose (0.25, 2.5, 25, or 250 µg/kg/day);.

Q4115: S. Steven, *et al.* Gliptin and GLP-1 analog treatment improves survival and vascular inflammation/dysfunction in animals with lipopolysaccharide-induced endotoxemia. *Basic Research In Cardiology* 2015;110(U103-U116)

ALZET Comments: Linagliptin; sitagliptin; SC; Mice; 3 days; Animal info (male, C57BL6); functionality of mp verified by DPP-4 activity in serum; toxicology; cardiovascular;.

Q4032: M. C. O'Sullivan, *et al.* Dibenzosuberyl substituted polyamines and analogs of clomipramine as effective inhibitors of trypanothione reductase; molecular docking, and assessment of trypanocidal activities. *BIOORGANIC & MEDICINAL CHEMISTRY* 2015;23(996-1010)

ALZET Comments: Compound 7; Mice; 3 days; Animal info (female, Swiss-Webster); comparison of injection vs mp; toxicology;.

Q4485: S. Kumar, *et al.* Role of Lipocalin-type prostaglandin D(2) synthase (L-PGDS) and its metabolite, prostaglandin D(2), in preterm birth. *PROSTAGLANDINS & OTHER LIPID MEDIATORS* 2015;118(28-33)



ALZET Comments: BWA868C; PGD2, 11-deoxy-11-methylene; Saline; Mice; 1004; 28 days; Controls received mp w/ vehicle; animal info (L-PGD5); teratology; toxicology; BWA868C; PGD2, 11-deoxy-11-methylene are DP1 and DP2 receptor antagonists;.

Q4473: L. Kass, *et al.* Prenatal Bisphenol A exposure delays the development of the male rat mammary gland. *REPRODUCTIVE TOXICOLOGY* 2015;54(37-46)

ALZET Comments: Bisphenol A; DMSO; SC; Rat; 1002; 14 days; Controls received mp w/ vehicle; animal info (female, WistarGD9); teratology; toxicology;.

Q4418: M. Fujimura, *et al.* Methylmercury causes neuronal cell death through the suppression of the TrkA pathway: In vitro and in vivo effects of TrkA pathway activators. *TOXICOLOGY AND APPLIED PHARMACOLOGY* 2015;282(259-266)

ALZET Comments: MCC-257; SC; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (male, Wistar, 6 weeks old, 240-290g); toxicology; MCC-257 is a GM1 ganglioside analog;.

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)

ALZET Comments: Bisphenol A, deuterium-labeled; SC; Monkey (African velvet); 2ML4; 30 days; 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;.

Q4382: E. P. Conceicao, *et al.* Maternal nicotine exposure leads to higher liver oxidative stress and steatosis in adult rat offspring. *FOOD AND CHEMICAL TOXICOLOGY* 2015;78(52-59)

ALZET Comments: Nicotine; Saline; SC; Rat (lactating); 2ML2; 14 days; Controls received mp w/ vehicle; animal info (female, Wistar, PN2); teratology; toxicology; dependence;.

Q4207: H. Z. Yin, *et al.* Intrathecal infusion of BMAA induces selective motor neuron damage and astrogliosis in the ventral horn of the spinal cord. *Experimental Neurology* 2014;261(1-9)

ALZET Comments: Propanoic acid, amino-beta-methyl; CSF/CNS (intrathecal); Rat (transgenic); 2004; 30 days; Controls received mp w/ saline; animal info (male, hemizygous SOD1 G93A, 80 days old); neurodegenerative (amyotrophic lateral sclerosis); toxicology; amino-beta-methylaminopropanoic acid aka beta-N-methylamino-L-alanine aka BMAA; BMAA is a neurotoxin; used PE5 catheter for IT cannulation;.

Q4203: N. Yaqoob, *et al.* Trichloroethylene and trichloroethanol-induced formic aciduria and renal injury in male F-344 rats following 12 weeks exposure. *Toxicology* 2014;323(70-77)

ALZET Comments: Uridine, bromodeoxy-; PBS; SC; Rat; 2ML1; 5 days; Animal info (male, F-344, 13-14 weeks old, 236-312g); functionality of mp verified by BrdU imaging; toxicology;.

Q4193: T. Yamada, *et al.* Human Hepatocytes Support the Hypertrophic but not the Hyperplastic Response to the Murine Nongenotoxic Hepatocarcinogen Sodium Phenobarbital in an In Vivo Study Using a Chimeric Mouse with Humanized Liver. *TOXICOLOGICAL SCIENCES* 2014;142(137-157)

ALZET Comments: Growth hormone, recombinant human; uridine, bromodeoxy; SC; Mice(transgenic; SCID); Rat; 1002; 2ML1; 7 days; 14 days; Animal info (mice male, CD-1 or ICR or SCID, 10 weeks old; rat male, Wistar, 10 weeks old); toxicology;.

Q3694: C. E. Wood, *et al.* Comparative Time Course Profiles of Phthalate Stereoisomers in Mice. *TOXICOLOGICAL SCIENCES* 2014;139(21-34)

ALZET Comments: Thymidine, 3H-; SC; Mice; 5 days; Animal info (male, B6C3F1, 21-28 days old); toxicology; Thymidine used for imaging cells undergoing DNA replication;.



Q4127: K. Tamura, *et al.* The effect of nicotine on osteoinduction by recombinant human bone morphogenetic protein 2. *International Journal of Oral and Maxillofacial Surgery* 2014;43(1022-1029)

ALZET Comments: Nicotine; Saline; SC; Rat; 2004; 21 days; Controls received mp w/ vehicle; animal info (male, Wistar, 10 weeks old, 250-280g); toxicology;.

Q5425: A. M. Sonabend, *et al.* Convection-enhanced delivery of etoposide is effective against murine proneural glioblastoma. *Neuro Oncol* 2014;16(9):1210-9

ALZET Comments: Etoposide; PBS; CSF/CNS (intratumoral); Mice; 1007D; 7 days; Controls received mp w/ vehicle; ALZET brain infusion kit 3 used; cancer (proneural glioblastoma); dose-response/dose escalation study (pg. 1212); Toxicology (pg. 1212); Adhesive glue purchased from Scienceware; Cannula penetration depth 2mm; CED stands for convection enhanced delivery; Therapeutic indication (proneural glioblastoma); Dose (200, 400, 600, 800 uM etoposide);.

Q4055: N. Queisser, *et al.* Aldosterone induces fibrosis, oxidative stress and DNA damage in livers of male rats independent of blood pressure changes. *TOXICOLOGY AND APPLIED PHARMACOLOGY* 2014;280(399-407)

ALZET Comments: Aldosterone; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley RjHan:SD, 5-6 weeks old); toxicology; cardiovascular; bp measured using tail cuff;.

Q3542: R. Landsiedel, *et al.* Application of short-term inhalation studies to assess the inhalation toxicity of nanomaterials. *Particle and Fibre Toxicology* 2014;11(U1-U26)

ALZET Comments: Uridine, bromodeoxy-; SC; Rat; 2ML1; 3 days; Animal info (male, Wistar, Crl:WI, 7 weeks old); toxicology;.

Q3460: M. E. Dowty, *et al.* Preclinical to Clinical Translation of Tofacitinib, a Janus Kinase Inhibitor, in Rheumatoid Arthritis. *Journal of Pharmacology and Experimental Therapeutics* 2014;348(1):165-173

ALZET Comments: Tofacitinib; DMSO; PEG 300; SC; Mice; 36 days; Controls received mp w/ vehicle; animal info (male, DBA/1, 10-12 weeks old); functionality of mp verified by plasma levels; pumps replaced every 19 days; 33% DMSO used; dose-response (pg. 168); toxicology; immunology; Tofacitinib is a janus kinase inhibitor; enzyme inhibitor (JAK3).

Q3456: M. E. Diaz, *et al.* GH administration patterns differently regulate epidermal growth factor signaling. *Journal of Endocrinology* 2014;221(309-323)

ALZET Comments: Growth hormone, porcine; SC; Mice; 1007D; 5 days; Controls received mp w/ saline; animal info (Swiss-Webster, 3-4 months old, 26-30g); functionality of mp verified by plasma levels; comparison of SC injection BID vs mp; toxicology; "The results indicate that sustained delivery systems that allow continuous GH plasma patterns would be beneficial in terms of treatment safety with regard to the actions of GH on EGFR signaling and its promitogenic activity." pg 309.

R0321: D. Caserta, *et al.* Bisphenol a and the female reproductive tract: an overview of recent laboratory evidence and epidemiological studies. *Reproductive Biology and Endocrinology* 2014;12(U1-U10)

ALZET Comments: Bisphenol; SC; Mice; Animal info (female, GD8); toxicology;.

Q3420: W. Boehmerle, *et al.* Specific targeting of neurotoxic side effects and pharmacological profile of the novel cancer stem cell drug salinomycin in mice. *JOURNAL OF MOLECULAR MEDICINE-JMM* 2014;92(889-900)

ALZET Comments: CGP-37157; DMSO; PEG; SC; Mice; 1004; 35 days; Controls received mp w/ vehicle; animal info (male, C57BL6J, 9 weeks old); 50% DMSO used; 50% PEG used; no stress (see pg.894); behavioral testing (von Frey hair test; hot/cold plate test, catwalk apparatus); CGP-37157 is an inhibitor of the mitochondrial Na/Ca exchanger; toxicology;.

Q2878: N. Zhidkov, *et al.* Continuous Intraperitoneal Carboplatin Delivery for the Treatment of Late-Stage Ovarian Cancer. *MOLECULAR PHARMACEUTICS* 2013;10(9):3315-3322

ALZET Comments: Carboplatin; PBS; IP; Mice (SCID); 1002; 14 days; Controls received mp w/ saline; toxicology; animal info (6-8 week old female SCID); comparison of bolus injection vs mp; cancer (ovarian).



Q2928: Y. F. Tian, *et al.* Lipoic acid suppresses portal endotoxemia-induced steatohepatitis and pancreatic inflammation in rats. *WORLD JOURNAL OF GASTROENTEROLOGY* 2013;19(18):2761-2771

ALZET Comments: LPS; Saline; IV; Rat; 2004; Controls received mp w/ saline; toxicology; immunology; animal info (male, sprague-dawley, 5-6 weeks old); portal vein; mp were used to infuse LPS to study the effect of lipoic acid on suppressing steatohepatitis in portal endotoxemia;.

Q3163: S. V. Raju, *et al.* Cigarette Smoke Induces Systemic Defects in Cystic Fibrosis Transmembrane Conductance Regulator Function. *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE* 2013;188(11):1321-1330

ALZET Comments: Acrolein; DMSO; SC; Mice; 4 weeks; Controls received mp w/ vehicle; animal info (A/J); functionality of mp verified by plasma serum levels; toxicology; in vivo vs in vitro effect;.

Q3595: K. Parameshwaran, *et al.* Long term alterations in synaptic physiology, expression of beta2 nicotinic receptors and ERK1/2 signaling in the hippocampus of rats with prenatal nicotine exposure. *NEUROBIOLOGY OF LEARNING AND MEMORY* 2013;106(1):102-111

ALZET Comments: Nicotine; Saline; SC; Rat (pregnant); Controls received mp w/ vehicle; animal info (female, Sprague Dawley, gestation day 3); toxicology; pumps removed after pups born;.

Q3257: K. Nojima, *et al.* Prolonged exposure to a low-dose of bisphenol A increases spontaneous motor activity in adult male rats. *Journal of Physiological Sciences* 2013;63(4):311-315

ALZET Comments: Bisphenol A; Sesame oil; IP; Rat; 2004; 13 days; Controls received mp w/ sesame oil only; animal info (male, Sprague Dawley, 8 weeks); behavioral testing (animal movement analysis); toxicology; bisphenol A aka BPA.

Q4763: Nicolas J. Cabaton, *et al.* Effects of Low Doses of Bisphenol A on the Metabolome of Perinatally Exposed CD-1 Mice. *Environ. Health Perspectives* 2013;121(5):586-593

ALZET Comments: BPA; DMSO, water; SC; Rat; 2004; not specified; toxicology; 12 wk old, female, CD-1 mice; 50% DMSO used; functionality of mp verified by plasma levels ; dose: .025, 0.25, or 25 ug/kg/bw/day; mp were used to induce perinatal exposure to BPA to study its global effect.

Q4803: Nicolas J. Cabaton, *et al.* Effects of Low Doses of Bisphenol A on the Metabolome of Perinatally Exposed CD-1 Mice. *Environ. Health Perspect* 2013;121(5):586-593

ALZET Comments: Bisphenol A; DMSO; SC; Rat; 2004; toxicology; 12 wk old, female, CD-1 mice; 50% DMSO in water; functionality of mp verified by plasma levels ; mp were used to induce perinatal exposure to BPA to study its global effect; dose: 0.025, 0.25, or 25 ug/kg/bw/day.

Q3246: Y. Morimoto, *et al.* Pulmonary toxicity of printer toner following inhalation and intratracheal instillation. *INHALATION TOXICOLOGY* 2013;25(12):679-690 Uridine, bromodeoxy;

ALZET Comments: Uridine, bromodeoxy;; Rat; 2ML1; 5 days; Animal info (Female, Wistar, 8 weeks old); functionality of mp verified by BrdU imaging; toxicology; immunology; pumps used to deliver BrdU for imaging purposes only.

Q3226: I. R. Miousse, *et al.* Mammary gland morphology and gene expression signature of weanling male and female rats following exposure to exogenous estradiol. *EXPERIMENTAL BIOLOGY AND MEDICINE* 2013;238(9):1033-1046

ALZET Comments: Estradiol, 17b-; PEG; SC; Rat; 2002; 12 days; Controls received mp w/ vehicle; animal info (Sprague Dawley, 21 days old); functionality of mp verified by serum measurement; dose-response (table 1 & 2); toxicology;.

Q3242: K. McFarland, *et al.* Low Dose Bexarotene Treatment Rescues Dopamine Neurons and Restores Behavioral Function in Models of Parkinson's Disease. *ACS CHEMICAL NEUROSCIENCE* 2013;4(11):1430-1438

ALZET Comments: Bexarotene; DMSO; saline; CSF/CNS; SC; Rat; 2004; 2ML2; 28 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 225-250g); 1% DMSO used; comparison of oral gavage vs mp; dose-response (Table 1, pg.1436); neurodegenerative (Parkinson's disease); post op. care (Subcutaneous fluids 10 ml/day, soft food mashes); behavioral testing (Spontaneous locomotion, head twitch, rotorod, beam test, novel object recognition); toxicology; model 2004 (ICV); model 2ML2 (SC);.



Q4815: Luis M. Craveiro, *et al.* Infusion of anti-Nogo-A antibodies in adult rats increases growth and synapse related proteins in the absence of behavioral alterations. *Experimental Neurology* 2013;250):52-68

ALZET Comments: Antibody, anti-Nogo-A 11C7; PBS; CSF/CNS (intrathecal); Rat; 2ML2; 2ML4; 2 weeks; 4 weeks; Controls received mp w/ control antibody or PBS; animal info (male, Long Evans, 2-3 months old, 300g); post op. care (Rimadyl 5 mg/kg injection SC, Baytril 5 mg/kg injection SC for 72 hours at 12 hour intervals); behavioral testing (locomotor activity, anxiety, open field test, elevated plus maze); toxicology; "This procedure ensured antibody delivery into the CSF at a constant flow rate for 2 or 4 weeks." pg 53;.

Q5010: M. J. LeBaron, *et al.* An integrated approach for prospectively investigating a mode-of-action for rodent liver effects. *Toxicol Appl Pharmacol* 2013;270(2):164-73

ALZET Comments: uridine, bromodeoxy-; PBS; SC; mice; 2001; 7 days; toxicology; animal info: (C57BL/6J; wildtype, knock-out, and humanized); functionality of mp verified by BrdU immunohistochemistry ; cancer (hepatic); MoA; liver tumors; toxicity of agricultural molecule; sulfoxaflor; short-term rodent carcinogenicity study; 15 mg/mL; Industry authored (The Dow Chemical Company, Midland, MI, 48674, USA);.

Q3066: G. Cruzan, *et al.* Studies of styrene, styrene oxide and 4-hydroxystyrene toxicity in CYP2F2 knockout and CYP2F1 humanized mice support lack of human relevance for mouse lung tumors. *Regulatory Toxicology and Pharmacology* 2013;66(1):24-29

ALZET Comments: Uridine, Bromodeoxy; Saline; SC; Mice; 2001; 5 days; Animal info (8 weeks old, CD-1 & C57BL6); toxicology; Used to label cells & in determination of toxicity and proliferation.

Q3059: V. Chandramohan, *et al.* Construction of an Immunotoxin, D2C7-(scdsFv)-PE38KDEL, Targeting EGFRwt and EGFRvIII for Brain Tumor Therapy. *Clinical Cancer Research* 2013;19(17):4717-4727

ALZET Comments: Immunotoxin, D2C7-(scdsFv)-PE38KDEL; PBS-HSA; CSF/CNS; Mice (NSG); 3 days; 5 days; Controls received mp w/ vehicle or P588-(scdsFv)-PE38KDEL; animal info (male, NOD SCID gamma, 30 g, 8-12 weeks old); cancer (gliomas); toxicology; immunology; "This method of continuous intracranial delivery will aid in achieving elevated concentrations and uniform distribution of D2C7-(scdsFv)-PE38KDEL at the tumor site, which would be expected to optimize its antitumor activity. By this method, we were able to achieve significant increase in survival at a very low dose of 1 mg of D2C7-(scdsFv)-PE38KDEL" pg.4725;.

Q2943: L. T. Tien, *et al.* Neonatal exposure to lipopolysaccharide enhances dopamine transporter protein expression and accumulation of alpha-synuclein aggregation in the substantia nigra in responses to rotenone challenge in later life. *SOCIETY FOR NEUROSCIENCE ABSTRACT VIEWER AND ITINERARY PLANNER* 2012;42(;):U213-U214

ALZET Comments: Rotenone; DMSO; PEG-300; SC; 2ML4; 14 days; Controls received mp w/ DMSO/PEG-300; toxicology; animal info (male Sprague-Dawley rats, pregnant); neurodegenerative (Parkinson's); minipumps used to infuse rotenone to investigate whether neonatal LPS exposure causes long lasting changes in a-synuclein aggregation and DAT expression;.

Q1946: C. Soler-Martin, *et al.* The targets of acetone cyanohydrin neurotoxicity in the rat are not the ones expected in an animal model of konzo. *NEUROTOXICOLOGY AND TERATOLOGY* 2010;32(2):289-294

ALZET Comments: Acetone cyanohydrin; potassium cyanide; Saline, acidified; SC; Rat; 2001D; 2ML1; 24 hours; Controls received mp w/ vehicle; animal info (male, female, Long-Evans); "exposure was performed using osmotic pumps, with the aim of modeling the continuous exposure to acetone cyanohydrin that may result from the release of this nitrile from ingested cassava flour."; stress/adverse reaction: (see pg. 291) "Using a 24 h delivery schedule with the 2001D pumps, one animal also died before this time of exposure to 35 µmol/kg/h of acetone cyanohydrin."; behavioral testing (open field); konzo; toxicology.

Q0206: S. Masunaga, *et al.* Usefulness of Hexamethylenetetramine as an Adjuvant to Radiation and Cisplatin in the Treatment of Solid Tumors: its Independency of p53 Status. *Journal of Radiation Research* 2010;51(1):27-35

ALZET Comments: Uridine, bromodeoxy; hexamethylenetetramine; Saline, physiological; SC; Mice (nude); 2001D; 2001; 7 days; 24 hours; Cancer; toxicology; animal info (6-7 weeks old, female, syngenic, Balb/Ca).



Q0113: D. Ding, *et al.* Convection-enhanced delivery of free gadolinium with the recombinant immunotoxin MR1-1. *Journal of Neuro-oncology* 2010;98(1):1-7

ALZET Comments: MR1-1; Gadolinium-DTPA; Saline; albumin, human serum; CSF/CNS (parenchyma); Rat; 2ML2; 5 days; Toxicology; cancer (glioblastoma); no stress (see pg. 4); animal info (male, Fisher 344, 3 months old); dose-response (Fig.1); skin wounds closed with wound clips; behavioral testing (stepping and placing reflex and incline ramp climbing ability); CED (Convection enhanced delivery) infusion; "All rats survived the entirety of the study without clinical or histological toxicity attributable to the study drugs." (p. 1); MR1-1 is a recomb. immunotoxin of a mAb-endotoxin frag; Plastics One cannula used; MRI; brain tissue distribution.

P9749: C. P. Mao, *et al.* The effect of fetal and neonatal nicotine exposure on renal development of AT₁ and AT₂ receptors. *REPRODUCTIVE TOXICOLOGY* 2009;27(2):149-154

ALZET Comments: Nicotine; Saline; SC; Rat (pregnant); 2ML4; 28 days; Controls received mp w/vehicle; teratology; animal info (Sprague Dawley, female, 350 g); toxicology.

P9458: L. N. Vandenberg, *et al.* Perinatal exposure to the xenoestrogen bisphenol-A induces mammary intraductal hyperplasias in adult CD-1 mice. *REPRODUCTIVE TOXICOLOGY* 2008;26(3-4):210-219

ALZET Comments: Bisphenol A; DMSO; SC; Mice (pregnant); 2004; 28 days; Controls received mp w/ vehicle; dose-response (table 2); teratology; toxicology; animal info (female, CD-1, GD8-PND16); 50% DMSO used.

P9854: B. L. Stegelmeier, *et al.* The Comparative Pathology of the Glycosidase Inhibitors Swainsonine, Castanospermine, and Calystegines A3, B2, and C1 in Mice. *Toxicologic Pathology* 2008;36(5):651-659

ALZET Comments: Swainsonine; castanospermine; calystegine B₂; calystegine C₁; SC; Mice; 2002; 28 days; Controls received mp w/ saline; functionality of mp verified by GC/MS of residual drug; pumps replaced after 14 days; animal info (mature Swiss Webster, male); toxicology.

P8841: S. Mueller-Krebs, *et al.* Renal toxicity mediated by glucose degradation products in a rat model of advanced renal failure. *European Journal of Clinical Investigation* 2008;38(5):296-305

ALZET Comments: Glucose degradation products; IV (jugular); Rat; 2ML4; 28 days; Controls received mp w/ saline; replacement therapy (5/6 nephrectomy); toxicology; animal info (male, Sprague Dawley, 230-270g.); nephrology.

P9280: T. Mitamura, *et al.* Effect of pharmacokinetic profile on the pancreatic toxicity and efficacy of tacrolimus in rats. *JOURNAL OF TOXICOLOGICAL SCIENCES* 2008;33(5):575-584

ALZET Comments: FK506; Propylene glycol; ethanol; castor oil, hydrogenated; IV (femoral); Rat; 2002; 9, 14 days; Controls received mp w/ vehicle; functionality of mp verified by blood drug concentration; dose-response (fig. 4); comparison of bolus IV injections vs. mp; immunology; toxicology; animal info (male, Jcl:SD, 9 wks old; Fischer, WKAtt, 8 wks old; skin allograft); 15% EtOH used; "The sustained blood concentration of tacrolimus (via ALZET) with an AUC similar to that of bolus administration was better tolerated and had the same efficacy...These results indicate that the sustained-release formulation of tacrolimus has the potential to improve the safety of tacrolimus." (p. 583); also known as FK-506.

P9431: M. S. McMurray, *et al.* Gestational ethanol and nicotine exposure: Effects on maternal behavior, oxytocin, and offspring ethanol intake in the rat. *NEUROTOXICOLOGY AND TERATOLOGY* 2008;30(6):475-486

ALZET Comments: Nicotine hydrogen tartrate; sodium bitartrate; Water, bacteriostatic; SC; Rat (pregnant); 2ML4; 4 weeks; Controls received mp w/ vehicle or sodium bitartrate; no stress (see pg. 474); teratology; toxicology; dependence; post op. care (bupivacaine, bacitracin zinc, polymyxin B sulfate); animal info (female, Sprague Dawley, GD4); behavioral testing (maternal behaviors: pup retrieval, touch sniff flick, test building, self grooming, lay on pup; sweet preference; locomotor; exploratory behavior).

P8437: E. Henke, *et al.* Peptide-conjugated antisense oligonucleotides for targeted inhibition of a transcriptional regulator in vivo. *NATURE BIOTECHNOLOGY* 2008;26(1):91-100

ALZET Comments: Oligonucleotide, antisense, peptide conjugated; oligonucleotide, phosphorothioate antisense; peptide, F3; TBS; SC; Mice (nude); mice; 1007D; 1002; 14, 21 days; Controls received mp w/ vehicle or control peptide and oligo in non-conjugated form, or rcd1-PCAO; comparison of IV injections vs. mp; pumps replaced after 14 days; no stress (see pg.



95, 97); stability verified after 24 hours in 37 C, plasma up to 28 days in 37 C saline; antisense (Id1, rclid1); cancer (breast, lung carcinoma); peptides; toxicology; animal info (female, nude NCR; male, C57J/B6); antisense oligos covalently coupled to address peptide that targets tumor endothelial cells; "no adverse effects on treated mice have been observed." (p. 97).

P9319: A. B. DeAngelo, *et al.* The induction of hepatocellular neoplasia by trichloroacetic acid administered in the drinking water of the male B6C3F1 mouse. JOURNAL OF TOXICOLOGY AND ENVIRONMENTAL HEALTH-PART A-CURRENT ISSUES 2008;71(16):1056-1068

ALZET Comments: Uridine, bromodeoxy-; thymidine, 3H-; SC; Mice; 2001; 5 days; Cancer (hepatic); toxicology; animal info (B6C3F1, male, 7-107 wks old).

P9389: R. F. Barth, *et al.* Thymidine kinase 1 as a molecular target for boron neutron capture therapy of brain tumors. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2008;105(45):17493-17497

ALZET Comments: N5-2OH; DMSO; CSF/CNS; Rat; 2001D; 24 hours; Controls received mp w/ vehicle; comparison of IT injections vs. mp; cancer (glioma); toxicology; animal info (Fisher); 30% DMSO used; 3-Carboranyl thymidine analog; "by administering N5-2OH at a much lower dose (500 ug vs. 30 mg for D-CDU) i.c.v. over 24h by Alzet pumps, we have markedly increased tumor boron uptake (27.6 ug/gm tumor) with undetectable amounts in normal brain and blood." (p. 17495).

P9387: M. E. Andersen, *et al.* Genomic signatures and dose-dependent transitions in nasal epithelial responses to inhaled formaldehyde in the rat. TOXICOLOGICAL SCIENCES 2008;105(2):368-383

ALZET Comments: Uridine, bromodeoxy; Rat; 2ML1; 3 days; Toxicology; animal info (male, F344/CrlBR, 8-10 wks old, 200 g.).