Recent References (2016-Present) on Teratology Research Using ALZET® Osmotic Pumps

Q8847: T. C. Peixoto, *et al.* Nicotine exposure during breastfeeding reduces sympathetic activity in brown adipose tissue and increases in white adipose tissue in adult rats: Sex-related differences. Food and Chemical Toxicology 2020;140(111328
Agents: Nicotine **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;
ALZET Comments: Dose (6 mg/kg of nicotine per day); Controls received mp w/ vehicle; animal info (Lactating Wistar rats); teratology;

Q7658: C. L. Runyan, *et al.* CXCR4 signaling at the ovine fetal-maternal interface regulates vascularization, CD34+ cell presence, and autophagy in the endometriumdagger. Biology of Reproduction 2019;101(1):102-111
Agents: AMD3100 **Vehicle:** PBS; **Route:** Intrauterine; **Species:** Sheep (Pregnant); **Pump:** 2ML1; **Duration:** 8 days;
ALZET Comments: Dose (2060 ng at 10 µl/h); Controls received mp w/ vehicle; animal info (female, western white face); AMD3100 is a CXCR4 antagonist; cyanoacrylate adhesive; teratology;

Q8994: C. Zhang, *et al.* Aspirin Ameliorates Preeclampsia Induced by a Peroxisome Proliferator-Activated Receptor Antagonist. Reproductive Sciences 2018;25(12):1655-1662
Agents: T0070907 **Vehicle:** DMSO; **Route:** IP; **Species:** Rat; **Pump:** 2ML1; **Duration:** 5 days;
ALZET Comments: Dose (1 mg/kg/day); Controls received mp w/ vehicle; animal info (female, Sprague-Dawley, GD11-15); enzyme inhibitor (PPARgamma); teratology; mp used to induce preeclampsia;

Q7868: S. M. Scroggins, *et al.* Elevated vasopressin in pregnant mice induces T-helper subset alterations consistent with human preeclampsia. Clinical Science 2018;132(3):419-436
Agents: arginine vasopressin **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 21 days;
ALZET Comments: Dose (24 ng/h); Controls received mp w/ vehicle; animal info (12–16 weeks, female, C57BL/6J); teratology;

Q7846: S. Ramachandra Rao, *et al.* Compromised phagosome maturation underlies RPE pathology in cell culture and whole animal models of Smith-Lemli-Opitz Syndrome. Autophagy 2018;14(10):1796-1817
Agents: AY9944 **Vehicle:** PBS; **Route:** SC; **Species:** Rat (pregnant); **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: animal info (female, Sprague-Dawley, 6-days sperm-positive); AY9944 (aka trans-1,4-bis[2-chlorobenzylaminoethyl] cyclohexane dihydrochloride) is a cholesterol pathway inhibitor; enzyme inhibitor (DHCR7); teratology; Rats infused with agent for second and third gestational weeks. Detailed methods for use SLOS model described in reference (Kretzer FL, Hittner HM, Mehta RS. Ocular manifestations of the Smith-Lemli-Opitz syndrome. Arch Ophthalmol. 1981 Nov;99 (11):2000–2006. PubMed PMID: 7295150);

Q7817: K. J. Gibbins, *et al.* Effects of excess thromboxane A2 on placental development and nutrient transporters in a Mus musculus model of fetal growth restriction. Biology of Sex Differences 2018;98(5):695-704
Agents: U-46619 **Vehicle:** Ethanol; **Route:** Not Stated; **Species:** Mice (Pregnant); **Pump:** 1007D; **Duration:** 3 days; 5 days; 7 days;
ALZET Comments: Dose (4000 ng/µl at at 0.5 µl/h); 0.5% ethanol used; Controls received mp w/ vehicle; animal info (female, C57BL/6); U-46619 is a Thromboxane A2 analog; teratology; "At E15.5, E17.5, and E19, dams were re-anesthetized for caesarean sections and pups and placentae were obtained." p.696;

Q5905: M. von Chamier, *et al.* Impact of gestational nicotine exposure on intrauterine and fetal infection in a rodent model. Biology of Reproduction 2017;96(5):1071-1084
Agents: Nicotine tartrate **Vehicle:** Saline; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2ML4; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, GD6); post op. care (single housed; heating pads); teratology; “To test our hypothesis, we combined a maternal nicotine infusion model that achieves high levels of plasma nicotine and cotinine without causing fetal loss or changes in birth weight.” pg 1072; Used wound clips; Dose (6 mg/kg/day);

Q5993: P. Svitok, *et al.* Prenatal exposure to angiotensin II increases blood pressure and decreases salt sensitivity in rats. Clinical and Experimental Hypertension 2017;39(6):489-494
Agents: Angiotensin II **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2002; **Duration:** 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (pregnant); teratology; Dose (2 ug/kg/hr);

Q5690: B. Carusillo Theriault, *et al.* Cerebral microbleeds in a neonatal rat model. PLoS One 2017;12(2):e0171163
Agents: Endotoxin, LPS **Vehicle:** Not Stated; **Route:** IV (jugular); **Species:** Rat (pregnant); **Pump:** 2001D; **Duration:** 24 hours;
ALZET Comments: animal info (female, Wistar E19); ischemia (intrauterine); no stress (see pg. 4 "No mortality was experienced for dams undergoing the above protocol"); behavioral testing (Righting Reflex, negative geotaxis, open field, elevated plus maze, Morris water maze, balance beam); teratology; Dose (600 ng/hr); Resultant plasma level (4.5 EU/mL after 16 hours of infusion);

R0347: A. Ziv-Gal, *et al.* Evidence for bisphenol A-induced female infertility: a review (2007-2016). Fertil Steril 2016;106(4):827-56
Agents: Bisphenol A **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; monkey; **Pump:** Not Stated; **Duration:** 24, 28 days;
ALZET Comments: animal info (mice CD-1, GD8-PND16; monkey African green); teratology; Dose (mice 25 ug/kg/day; monkey 50 ug/kg/day);

Q5114: S. Zhao, *et al.* A proteomic study on liver impairment in rat pups induced by maternal microcystin-LR exposure. Environmental Pollution 2016;212(197-207
Agents: Microcystin-LR **Vehicle:** Saline; **Route:** IP; **Species:** Rat (pregnant); **Pump:** 2004; **Duration:** 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, 12 weeks old, GD8); teratology; teratology; microcystin-LR aka MCLR; Dose (10 ug/kg/day); "It should be noted that the actual
delivered dose of MCLR decreased as the pregnancy progressed because the weight of the mother at GD8 was used to calculate the MCLR dose, and the body weight increased from this point throughout pregnancy." pg 198

Q4920: L. Zhao, *et al.* Prenatal nicotinic exposure upregulates pulmonary C-fiber NK1R expression to prolong pulmonary C-fiber-mediated apneic response. Toxicol Appl Pharmacol 2016;290(107-15
Agents: Nicotine; mecamylamine; methyllycaconitine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, 250-300g); pumps replaced on GD7; Multiple pumps per animal (2); no stress (see pg. 110-111); teratology; Dose (Nicotine 6 mg/kg/day; mecamylamine 0.03 mg/kg/day; methyllycaconitine 3 mg/kg/day);

Q5113: L. Zhao, *et al.* Bronchopulmonary C-fibers' IL1RI contributes to the prolonged apneic response to intra-atrial injection of capsaicin by prenatal nicotinic exposure in rat pups. Toxicol Appl Pharmacol 2016;303(58-64
Agents: Nicotine; methyllycaconitine **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, 250-350g); pumps replaced every 28 days; Multiple pumps per animal (2); long-term study; teratology; MLA is an a7nAChR antagonist; methyllycaconitine aka MLA; Dose (nicotine 6 mg/kg/day; MLA 3 mg/kg/day);

Q5513: L. Zhao, *et al.* From the Cover: Prenatal Nicotinic Exposure Attenuates Respiratory Chemoreflexes Associated With Downregulation of Tyrosine Hydroxylase and Neurokinin 1 Receptor in Rat Pup Carotid Body. Toxicol Sci 2016;153(1):103-11
Agents: Nicotine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, 250-350g); pumps replaced every 21 days; teratology; Dose (6 mg/kg/day);

Q5491: L. B. Wollman, *et al.* Developmental nicotine exposure alters cholinergic control of respiratory frequency in neonatal rats. Developmental Neurobiology 2016;76(10):1138-49
Agents: Nicotine bitartrate **Vehicle:** Saline; **Route:** sc; **Species:** Rat (PREGNANT); **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle or sham surgery; animal info (female, Sprague Dawley, GD5); no stress (see pg. 1141); teratology; Dose (6 mg/kg/day);

Q5211: O. O. Talton, *et al.* Maternal Hyperleptinemia Improves Offspring Insulin Sensitivity in Mice. Endocrinology 2016;157(7):2636-48
Agents: Leptin **Vehicle:** Saline; **Route:** SC; **Species:** Mice (pregnant); **Pump:** 2004; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, WT); stress/adverse reaction: (see pg. 2645); teratology; diabetes; Dose (350 ng/h);

Q5684: Y. L. Tain, *et al.* Maternal melatonin or N-acetylcysteine therapy regulates hydrogen sulfide-generating pathway and renal transcriptome to prevent prenatal N(G)-Nitro-L-arginine-methyl ester (L-NAME)-induced fetal programming of hypertension in adult male offspring. American Journal of Obstetrics & Gynecology 2016;215(5):636 e1-636 e72
Agents: L-NAME **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ saline; animal info (female, Sprague Dawley); teratology; cardiovascular; Bp measured using tail cuff; Bp measured using tail cuff; Dose (60 mg/kg/day);

Q5396: W. Ling, *et al.* In Utero Bisphenol A Exposure Induces Abnormal Neuronal Migration in the Cerebral Cortex of Mice. Front Endocrinol (Lausanne) 2016;7(7
Agents: Bisphenol A **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (pregnant); **Pump:** 1007D; **Duration:** 4 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (pregnant ICR mice); dose-response (embryo); teratology; Therapeutic indication (teratogen, brain development); Dose (0, 40, 400 ug/kg); embryonic brain development during pregnancy

Q4810: Kang Chen, *et al.* Early postnatal nicotine exposure disrupts the a2* nicotinic acetylcholine receptor-mediated control of oriens-lacunosum moleculare cells during adolescence in rats. Neuropharmacology 2016;101(57-67
Agents: Nicotine **Vehicle:** Saline; **Route:** SC; **Species:** Rat (lactating); **Pump:** 2ML2; **Duration:** 14 days;
ALZET Comments: animal info (female, Sprague Dawley,); teratology; Dose (6 mg/kg/day);

Q4807: Jayne C. Charnock, *et al.* The impact of a human IGF-II analog ([Leu27]IGF-II) on fetal growth in a mouse model of fetal growth restriction. American Journal of Physiology Endocrinology and Metabolism 2016;310):E24-E31
Agents: Insulin-like growth factor 2, Leu27 **Vehicle:** HCl; **Route:** SC; **Species:** Not Stated; **Pump: Duration:** 5 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, eNOS -/-, E12.5); teratology; Dose (1 mg/kg/day); noted using "100ul miniosmotic pump (200D)" pgE25;

Q4827: S. Gizurarson, *et al.* Placental Protein 13 Administration to Pregnant Rats Lowers Blood Pressure and Augments Fetal Growth and Venous Remodeling. Fetal Diagnosis and Therapy 2016;39(56-63
Agents: Placental protein 13 **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2ML1; **Duration:** 1 week;
ALZET Comments: Controls received mp w/ mutant PP13 ?(DelT221) or saline; animal info (female, Sprague Dawley, 12 weeks old, GD8); teratology; cardiovascular; bp measured using tail cuff; Dose (0.625 ng/hour); Industry authored (Telemarpe Ltd.);

Q5631: K. Bravo, *et al.* Perinatal Fluoxetine Exposure Impairs the CO2 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);

Q4832: Achikam Haima*, et al.* The effects of gestational stress and Selective Serotonin reuptake inhibitor antidepressant treatment on structural plasticity in the postpartum brain — A translational model for postpartum depression. Hormones and Behavior 2016;77(124-131
Agents: Citalopram HBr **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 21 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague-Dawley, GD); functionality of mp verified by residual volume; post op. care (ibuprofen 15 mg/kg in drinking water for 7 days); post op. care (ibuprofen 15 mg/kg in drinking water for 7 days); teratology; Therapeutic indication (post partum stress); Dose (10 mg/kg/day);

Q4263: J. G. Zhuang*, et al.* Prenatal nicotinic exposure augments cardiorespiratory responses to activation of bronchopulmonary C-fibers. American Journal of Physiology Lung Cellular and Molecular Physiology 2015;308(L922-L930
Agents: Nicotine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, 250-350g); pumps replaced on 7th day of gestation; teratology;

Q4270: S. J. Zhao*, et al.* A proteomic analysis of prenatal transfer of microcystin-LR induced neurotoxicity in rat offspring. Journal of Proteomics 2015;114(197-213
Agents: Microcystin-LR **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, GD8); teratology;

Q4123: Y. L. Tain*, et al.* Maternal Citrulline Supplementation Prevents Prenatal N(G)-Nitro-L-Arginine-Methyl Ester (L-NAME)-Induced Programmed Hypertension in Rats. Biology of Reproduction 2015;92(U27-U33
Agents: L-NAME **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: Animal info (female, Sprague Dawley, 10 weeks old); teratology; cardiovascular;

Q4602: Y. L. Tain*, et al.* Transcriptome Analysis in Rat Kidneys: Importance of Genes Involved in Programmed Hypertension. INTERNATIONAL JOURNAL OF MOLECULAR SCIENCES 2015;16(4744-4758
Agents: L-NAME **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ saline, iso-osmotic; animal info (female, Sprague Dawley); teratology; cardiovascular; bp measured using tail cuff;

Q4592: P. Standen*, et al.* Maternal insulin-like growth factor 1 and 2 differentially affect the renin-angiotensin system during pregnancy in the guinea pig. GROWTH HORMONE & IGF RESEARCH 2015;25(141-147
Agents: Insulin-like growth factor-1; insulin-like growth factor 2 **Vehicle:** Acetic acid; **Route:** SC; **Species:** Guinea pig; **Pump:** 2002; **Duration:** 18 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (GD20); teratology; cardiovascular;

Q4800: K. B. a. T. E. Spencer. Biological Roles of Interferon Tau (IFNT) and Type I IFN Receptors in Elongation of the Ovine Conceptus1. Biology of Reproduction 2015;92(2)(47):1-10
Agents: oligonucleotdies, antisense morpholino **Vehicle:** PBS; **Route:** Intrauterine; **Species:** Sheep (ewe, pregnant); **Pump:** 2ML1; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ control oligonucleotides; animal info (female, Columbia Rambouillet); teratology; cyanoacrylate adhesive; used vinyl catheter tubing (0007760) to cannulate uterine lumen; pump affixed to mesosalpinx using cyanoacrylate glue;

Q4105: T. A. Slotkin*, et al.* Prenatal nicotine changes the response to postnatal chlorpyrifos: Interactions targeting serotonergic synaptic function and cognition. Brain Research Bulletin 2015;111(84-96
Agents: Nicotine **Vehicle:** Water, bacteriostatic; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2ML2; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, pregnant, Sprague Dawley); teratology; used wound clips

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);

Q4104: T. A. Slotkin, *et al.* Prenatal nicotine alters the developmental neurotoxicity of postnatal chlorpyrifos directed toward cholinergic systems: Better, worse, or just "different?". Brain Research Bulletin 2015;110(54-67
Agents: Nicotine **Vehicle:** Water, bacteriostatic; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, pregnant, Sprague Dawley); teratology; "dosage determined by the initial body weights of the dams (215 ± 2 g);control pumps contained bacteriostatic water and equivalent con-centrations of sodium bitartrate. Because weights increased with gestation, the dose rate fell accordingly to 2 mg/kg/day, but the dose rates remained well within the range that produces nicotine plasma levels " pg 55; used wound clips

Q4936: S. P. Singh, *et al.* HIF-1alpha Plays a Critical Role in the Gestational Sidestream Smoke-Induced Bronchopulmonary Dysplasia in Mice. PLoS One 2015;10(9):e0137757
Agents: Mecamylamine **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 2006; **Duration:** Not Stated;
ALZET Comments: animal info (3-4 month sold); teratology;

Q4282: I. Rayen, *et al.* Developmental exposure to SSRIs, in addition to maternal stress, has long-term sex-dependent effects on hippocampal plasticity. PSYCHOPHARMACOLOGY 2015;232(1231-1244
Agents: Fluoxetine **Vehicle:** Propylenediol; saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, adult, 250-300g); 50% propylenediol used; teratology; “These implants also reduced the effect of stress associated with repeated injections or oral gavage.” pg 1233;

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;

Q4544: S. Nakauchi, *et al.* Early postnatal nicotine exposure causes hippocampus-dependent memory impairments in adolescent mice: Association with altered nicotinic cholinergic modulation of LTP, but not impaired LTP. NEUROBIOLOGY OF LEARNING AND MEMORY 2015;118(178-188
Agents: Nicotine **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (pregnant); **Pump:** Not Stated; **Duration:** 15 days;
ALZET Comments: Controls received mp w/ saline; animal info (C57BL6, pregnant); behavioral testing (object location, object recognition memory task, elevated-plus maze; teratology;

Q4521: G. Maneenil, *et al.* Oral, Nasal and Pharyngeal Exposure to Lipopolysaccharide Causes a Fetal Inflammatory Response in Sheep. PLoS One 2015;10(U1091-U1101
Agents: Endotoxin, LPS **Vehicle:** Not Stated; **Route:** Oral cavity; **Species:** Sheep (ewe); **Pump:** Not Stated; **Duration:** 1 day; 6 days;
ALZET Comments: Controls received mp w/ saline; animal info (Merino); teratology; immunology;

Q3984: J. O. Lo, *et al.* Vitamin C supplementation ameliorates the adverse effects of nicotine on placental hemodynamics and histology in nonhuman primates. American Journal of Obstetrics & Gynecology 2015;212(U271-U278
Agents: Nicotine bitartrate **Vehicle:** Water, bacteriostatic; **Route:** SC; **Species:** Monkey (macaque, pregnant); **Pump:** 2ML4;
Duration: 134 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Rhesus, pregnant, GD26); functionality of mp verified by blood levels; pumps replaced every 3 weeks; post op. care (cefazolin 150 mg BID); long-term study; teratology; dependence;

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;

Q4495: J. Y. Li*, et al.* Exposure to Nicotine During Pregnancy and Altered Learning and Memory in the Rat Offspring. NICOTINE & TOBACCO RESEARCH 2015;17(661-666
Agents: Nicotine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2ML4; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ saline; animal info (female, Sprague Dawley, GD4, 300-350g); behavioral testing (morris water maze, escape latency, cross-platform); teratology;

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
Agents: BWA868C; PGD2, 11-deoxy-11-methylene **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (L-PGDS); 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
Agents: Bisphenol A **Vehicle:** DMSO; **Route:** SC; **Species:** Rat; **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, WistarGD9); teratology; toxicology;

Q4449: G. W. Heyne*, et al.* Definition of Critical Periods for Hedgehog Pathway Antagonist-Induced Holoprosencephaly, Cleft Lip, and Cleft Palate. PLoS One 2015;10(U757-U770
Agents: Cyclopamine **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (pregnant); **Pump:** 2001D; **Duration:** 1 day;
ALZET Comments: Animal info (female, C57BL6J, GD8.25-9.4); teratology;

Q3870: A. W. Eifert*, et al.* Effect of melatonin or maternal nutrient restriction on vascularity and cell proliferation in the ovine placenta. Animal Science 2015;153(13-21
Agents: Melatonin; luzindole **Vehicle:** DMSO; water; **Route:** Intrauterine; **Species:** Sheep (ewe; pregnant); **Pump:** 2ML4; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Western white face, GD62); functionality of mp verified by serum levels; 45% DMSO used; good methods (pg 15); no stress (see pg. 15); post op. care (BID IM injection flunixin meglumine; QD IP injection Penicillin G Procaine); teratology; cardiovascular; used 20 cm of PE 60 tubing; pumps primed overnight 37C saline with catheters;

Q4511: D. E. Ehrlich*, et al.* Prenatal stress, regardless of concurrent escitalopram treatment, alters behavior and amygdala gene expression of adolescent female rats. NEUROPHARMACOLOGY 2015;97(251-258
Agents: Escitalopram oxalate **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, nulliparious Sprague Dalwey, 200-225g); behavioral testing (open field, social interaction, novel object recognition, elevated plus maze; teratology;

Q4387: J. S. M. Cuffe*, et al.* Differential mRNA Expression and Glucocorticoid-Mediated Regulation of TRPM6 and TRPM7 in the Heart and Kidney throughout Murine Pregnancy and Development. PLoS One 2015;10(U1394-U1410
Agents: Dexamethasone sodium phosphate; corticosterone **Vehicle:** Saline; **Route:** SC; **Species:** Mice (pregnant); **Pump:** 1003D; **Duration:** 60 hours;
ALZET Comments: Controls received mp w/ saline; animal info (female, E12.5, C57Bl6J, 8-10 weeks old); teratology; cardiovascular;

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
Agents: Nicotine **Vehicle:** Saline; **Route:** SC; **Species:** Rat (lactating); **Pump:** 2ML2; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Wistar, PN2); teratology; toxicology; dependence;

Q4363: C. M. Chen, *et al.* Maternal Nicotine Exposure Induces Epithelial-Mesenchymal Transition in Rat Offspring Lungs. Neonatology 2015;108(179-187
Agents: Nicotine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; 2ML4; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ saline; animal info (female, Sprague Dawley); teratology; dependence;

Q4364: C. M. Chen, *et al.* Maternal nicotine exposure during gestation and lactation induces kidney injury and fibrosis in rat offspring. PEDIATRIC RESEARCH 2015;77(56-63
Agents: Nicotine tartrate **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2ML2; 2ML4; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, pregnant, GD7); teratology; used sutures;

Q4322: S. Barreda, *et al.* Developmental nicotine exposure adversely effects respiratory patterning in the barbiturate anesthetized neonatal rat. RESPIRATORY PHYSIOLOGY & NEUROBIOLOGY 2015;208(45-50
Agents: Nicotine bitartrate **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, embryonic day 5); post op. care (antibiotics Pen-48, Buprenex 0.5 mg/kg BID); teratology;

Q4311: J. Ayraam, *et al.* Prenatal nicotine exposure increases hyperventilation in alpha4-knock-out mice during mild asphyxia. RESPIRATORY PHYSIOLOGY & NEUROBIOLOGY 2015;208(29-36
Agents: Nicotine bitartrate **Vehicle:** Water; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Animal info (female, a4 nAChR KO or WT, embryonic day14); teratology;

Q4312: I. L. M. H. Aye, *et al.* Adiponectin supplementation in pregnant mice prevents the adverse effects of maternal obesity on placental function and fetal growth. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2015;112(12858-12863
Agents: Adiponectin **Vehicle:** PBS; **Route:** SC; **Species:** Mice (pregnant); **Pump:** 1003D; **Duration:** 4 days;
ALZET Comments: Controls received mp w/ PBS; animal info (female, C57BL6J); teratology; diabetes;