



References on Micro Perfusion of Solid Tissue Using ALZET® Osmotic Pumps

Q7861: S. Ruoss, *et al.* Inhibition of calpain delays early muscle atrophy after rotator cuff tendon release in sheep. *Physiol Rep* 2018;6(21):e13833

Agents: calpeptin **Vehicle:** DMSO; **Route:** intramuscular (infraspinatus); **Species:** Sheep; **Pump:** 2ML4; **Duration:** 6 weeks; **ALZET Comments:** Dose (0.75 mg/day); animal info (26.7+/-1.4 months, female, Swiss Alpine); pumps replaced at 2 weeks; calpeptin is a synthetic calpain inhibitor; enzyme inhibitor (calpain); tissue perfusion (m. infraspinatus); good methods (detailed pump implantation procedure on page 3.); Therapeutic indication (calpain inhibition prevented the early unloading adaptations, but not the subsequent initiation of rotator cuff disease); 75% DMSO used;

Q5909: L. Wang, *et al.* Sodium butyrate suppresses angiotensin II-induced hypertension by inhibition of renal (pro)renin receptor and intrarenal renin-angiotensin system. *J Hypertens* 2017;35(9):1899-1908

ALZET Comments: Angiotensin II; sodium butyrate; SC; Intrarenal (medulla); Rat; 2002; 14 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-300g); Multiple pumps per animal (2); replacement therapy (uniphrectomy); tissue perfusion (renal medulla); cardiovascular; antihypertensive; peptides; Bp measured using radio telemetry (DSI); Dose (Ang II 200 ng/kg/min; NaBu 1 ug/kg/min); good bp comparison curve (pg4);

Q5080: J. Urra, *et al.* In vivo blockade of acetylcholinesterase increases intraovarian acetylcholine and enhances follicular development and fertility in the rat. *Sci Rep* 2016;6(30129)

ALZET Comments: Huperzine A; Intraovarian (ovarian bursa); Rat; 2004; 4 weeks; Controls received mp w/ saline; animal info (female, Sprague Dawley, 250-300g, hemi-OVX); tissue perfusion (ovarian bursa); enzyme inhibitor (acetylcholine esterase);

Q5395: T. H. Lin, *et al.* NF-kappaB decoy oligodeoxynucleotide mitigates wear particle-associated bone loss in the murine continuous infusion model. *Acta Biomater* 2016;41(273-81)

ALZET Comments: Ultra-high molecular weight polyethylene particles; oligodeoxynucleotide, decoy; oligodeoxynucleotide, scrambled; Endotoxin, LPS; Brain-derived neurotropic factor;; Saline; In Vitro (cell culture); Bone (Femur); Mice (nude); 2006; 4 weeks; Controls received mp w/ vehicle; animal info (Male athymic nude mice, 10-15 weeks old); stability verified by (in vitro experiment); dose-response (pg. 277); good methods (pg. 276); tissue perfusion (bone); Dose (15 mg/ml UHMWPE, 50uM decoy, 1 ug/ml LPS); Therapeutic indication (Bone loss, chronic inflammation);

Q5311: L. Chen, *et al.* 20-HETE contributes to ischemia-induced angiogenesis. *Vascul Pharmacol* 2016;83(57-65)

ALZET Comments: DDMS; 6,15-20-HEDGE; Intramuscular (hindlimb gracilis); Mice; 2002, 2004; 32 days; Controls received mp w/ vehicle; animal info (Balb/c mice, 12 wk old); functionality of mp verified by blood pressure and blood perfusion scans; dose-response (pg. 61); good methods (pg. 58); ischemia (peripheral); tissue perfusion (intramuscular); Polyethylene catheter tubing used (inner ID 0.8 mm); Dose (5 mg/kg/day);

Q5135: P. Cheng, *et al.* Protein phosphatase 2A (PP2A) activation promotes axonal growth and recovery in the CNS. *J Neurol Sci* 2015;359(1-2):48-56

ALZET Comments: Sphingosine, D-erythro; saline; SC; Rat; 2002; 2 weeks; Controls received mp w/ vehicle; sham operation; animal info: adult Sprague-Dawley (SD) male rats, 240 - 260 g; spinal cord injury; tissue perfusion (spinal cord); D-erythro-sphingosine aka DES; Dose: DES (200 µl 1 µg/ml solution).

Q4141: Y. Tona, *et al.* Therapeutic potential of a gamma-secretase inhibitor for hearing restoration in a guinea pig model with noise-induced hearing loss. *BMC NEUROSCIENCE* 2014;15(U1-U8)

ALZET Comments: MDL28170; DMSO; PBS; Ear (cochlea); Guinea pig; 1002; 14 days; Controls received mp w/ vehicle; animal info (Hartley strain, 350-400g); 0.3% DMSO used; tissue perfusion (cochlea); used Teflon tube with inner diameter of 180 µm to cannulate cochlea; MDL28170 is a gamma-secretase inhibitor;



Q4135: E. Tavares, *et al.* Immunoneutralization of Endogenous Aminoprocaltinin Attenuates Sepsis-Induced Acute Lung Injury and Mortality in Rats. *American Journal of Pathology* 2014;184(3069-3083

ALZET Comments: Antibody, anti-aminoprocaltinin; Saline; IP; Rat; 2001D; 18 hours; Controls received mp w/ control antibody; animal info (male, Wistar, 280-300g); tissue perfusion (peritoneum); immunology; peptides; Catheter used to cannulate peritoneum;

Q3963: J. Lee, *et al.* Intrauterine Coadministration of ERK1/2 Inhibitor U0126 Inhibits Interferon TAU Action in the Endometrium and Restores Luteolytic PGF(2alpha) Pulses in Sheep. *Biology of Reproduction* 2014;91(U177-U185

ALZET Comments: U0126; serum protein, ovine; interferon tau, recombinant ovine; DMSO; Intrauterine (uterine horn); Sheep (ewe); 2ML1; 6 days; Controls received mp w/ vehicle; animal info (female, Suffolk Ovis aries); 3% DMSO used; tissue perfusion (uterine horn); cyanoacrylate adhesive; used cyanoacrylate glue to anchor pump; interferon tau aka IFNT;

Q5009: M. D. Kritzer, *et al.* The scaffold protein muscle A-kinase anchoring protein beta orchestrates cardiac myocyte hypertrophic signaling required for the development of heart failure. *Circ Heart Fail* 2014;7(4):663-72

ALZET Comments: Isoproterenol; mice; 2 weeks; animal info (C57BL/76 mice; 8-week-old mAKAPfl/fl); ischemia (cardiac); behavioral testing (physiological hypertrophy induced with 5-wk swimming regimen, Hargreaves test); tissue perfusion (heart); cardiovascular; Iso aka Isoproterenol; Dose: 60 mg/kg/day.

Q3405: I. Armando, *et al.* Dopamine D3 receptor inhibits the ubiquitin-specific peptidase 48 to promote NHE3 degradation. *FASEB Journal* 2014;28(1422-1434

ALZET Comments: GR103691; RNA, small interfering; Transfection reagent (TransIT); SC; kidney (subcapsular space); Mice; 1007D; 4 days; 7 days; Controls received mp w/ vehicle or nonsilencing "mock siRNA"; animal info (male, C57BL6J, adult); tissue perfusion (subcapsular space; kidney); gene therapy; antihypertensive; GR103691 is a D3R antagonist; used PE tubing #0007701; pump sutured to abdominal wall; surgical glue applied at puncture site to hold catheter tubing in place and to prevent leakage;

Q3795: Y. Aghazadeh, *et al.* Induction of Androgen Formation in the Male by a TAT-VDAC1 Fusion Peptide Blocking 14-3-3epsilon Protein Adaptor and Mitochondrial VDAC1 Interactions. *MOLECULAR THERAPY* 2014;22(1779-1791

ALZET Comments: TVG167; TVS167; Water; IP; intratesticular; Rat; 24 hours; Controls received mp w/ vehicle; animal info (male, Sprague Dawley); tissue perfusion (testis); peptide; TVS167 and TVG167; pump infused at 1.0 ul/hr;

Q2471: V. M. Villar, *et al.* Sorting Nexin 1 Loss Results in D(5) Dopamine Receptor Dysfunction in Human Renal Proximal Tubule Cells and Hypertension in Mice. *Journal of Biological Chemistry* 2013;288(1):152-163

ALZET Comments: RNA, small interfering; Kidney; Mice; 7 days; Control animals received mp w/ vehicle or non-silencing mock siRNA; animal info (C57BL/6, BALB/c, nephrectomized, adult, male); Snx-1 specific siRNA; infusion rate of 0.5 ul/hr; tissue perfusion (kidney); PE catheter used.

Q3106: C. O. Lemley, *et al.* Uterine Infusion of Melatonin or Melatonin Receptor Antagonist Alters Ovine Feto-Placental Hemodynamics During Midgestation. *Biology of Reproduction* 2013;89(2):U24-U32

ALZET Comments: Melatonin; Luzindole; DMSO; water; Intrauterine (uterine horn); Sheep (ewe); 2ML4; 28 days; Controls received mp w/ vehicle; functionality of mp verified by serum levels of melatonin taken; 45% DMSO used; stress/adverse reaction: (see pg.2); post op. care (For two days: flunixin meglumine 50 mg/ml IM twice a day; Penicillin G procain 300,000 u/ml once per day); tissue perfusion (uterus mesometrium); cardiovascular;

Q3105: T. G. Landry, *et al.* Chronic neurotrophin delivery promotes ectopic neurite growth from the spiral ganglion of deafened cochleae without compromising the spatial selectivity of cochlear implants. *Journal of Comparative Neurology* 2013;521(12):2818-2832

ALZET Comments: Neurotrophin; Brain-derived neurotrophic factor; Ear (cochlea); Guinea pig; 2004; 28 days; Controls received mp w/ artificial perilymph; animal info (young adult, 300-600g); tissue perfusion (cochlea); peptides;



Q2832: Y. Yang, *et al.* Paraoxonase 2 decreases renal reactive oxygen species production, lowers blood pressure, and mediates dopamine D(2) receptor-induced inhibition of NADPH oxidase. *Free Radical Biology and Medicine* 2012;53(3):437-446

ALZET Comments: RNA, small interfering, D2R; RNA, small interfering, PON2; Kidney (renal capsule); Mice; 1007D; 7 days; Control animals received mp w/ nonsilencing control RNA; animal info (D2R deficient, 6-8 mo old, uniphrectomy); PE tubing used (item #0007701); "The body of the minipump was placed in the area previously occupied by the kidney that was removed; stabilization was achieved by suturing (4-0 ethilon) the minipump to the lateral abdominal musculature close to it."; tissue perfusion (renal capsule).

Q2425: H. Toyota, *et al.* A novel treatment for vestibular disorder with FGLM-NH₂ plus SSSR. *Neuroscience Letters* 2012;526(2):128-132

ALZET Comments: FGLM-NH₂; SSSR; Ear (cochlea); Guinea pig; 2002; 14 days; Control animals received mp w/ artificial perilymph; animal info (male, Hartley); FGLM-NH₂ also known as Phenylalanine-Glycine-Leucine-Methionine-Amide; SSSR also known as Serine-Serine-Serine-Arginine; tissue perfusion.

Q1915: D. J. Sly, *et al.* Brain-Derived Neurotrophic Factor Modulates Auditory Function in the Hearing Cochlea. *JARO-JOURNAL OF THE ASSOCIATION FOR RESEARCH IN OTOLARYNGOLOGY* 2012;13(1):1-16

ALZET Comments: Brain-derived neurotrophic factor; Ear (cochlea); Guinea pig; 2004; 4 weeks; Controls received mp w/ Ringers solution; animal info (adult, male, Dunkin-Hartley pigmented, 233-815 g); post op. care (buprenorphine); "Polymers, particularly hydrogels that may be applied directly to the round window, were considered... However, most have a release profile that varies over time, so instead we chose to place a cannula attached to a mini-osmotic pump directly onto the round window." pg 2; tissue perfusion (cochlea, round window niche).

Q2347: M. A. Ricu, *et al.* Evidence for a Celiac Ganglion-Ovarian Kisspeptin Neural Network in the Rat: Intraovarian Anti-Kisspeptin Delays Vaginal Opening and Alters Estrous Cyclicity. *Endocrinology* 2012;153(10):4966-4977

ALZET Comments: P234; Intraovarian; Rat; 2004; 28 days; Control animals received mp w/ saline; animal info (Sprague Dawley, male, 30, 60 days old); P234 is a kisspeptin antagonist; "the pumps were left in the animal for a total of 50 d to control the estrous cycling activity." pg 4968; tissue perfusion (ovary).

Q2301: K. Nishijima, *et al.* Interactions among pulmonary surfactant, vernix caseosa, and intestinal enterocytes: intra-amniotic administration of fluorescently liposomes to pregnant rabbits. *AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY* 2012;303(3):L208-L214

ALZET Comments: Liposomes, fluorescently labeled; coatasome EL-01-C, hydrated; DMSO; water, distilled; Intrauterine; Rabbit (fetus); 2ML1; 1 week; Control animals received mp w/ liposome alone; animal info (Japanese, White, 4.2-5.4 kg, teen); tissue perfusion (fetus); "5-cm sterile PE 60 silicone catheter with silicone flange was attached to each pump" pg L209; Fig 2, image of pump and catheter placement; multiple pumps used (2); teratology.

Q2166: F. P. Ganchou, *et al.* EFFECT OF CHRONIC ADMINISTRATION OF ENDOTHELIN RECEPTOR TYPE A ANTAGONIST (BQ-610) ON FUNCTIONAL LIFESPAN OF THE CORPUS LUTEUM IN SHEEP. *REVISTA CIENTIFICA-FACULTAD DE CIENCIAS VETERINARIAS* 2012;22(4):321-331

ALZET Comments: BQ610; Methanol; saline; Intraovarian (corpus luteum); Sheep (ewe); 2002; 14 days; Controls received mp w/ vehicle; animal info (nonpregnant, Suffolk); tissue perfusion (corpus luteum); BQ-610 is an endothelin receptor type A antagonist.

Q2056: P. Dorniak, *et al.* Endometrial HSD11B1 and Cortisol Regeneration in the Ovine Uterus: Effects of Pregnancy, Interferon Tau, and Prostaglandins. *Biology of Reproduction* 2012;86(4):U106-U115

ALZET Comments: Interferon, tau, recomb. ovine; meloxicam; PGE₂, ovine serum; PGF_{2a}, ovine serum; PGI₂, ovine serum; Ethanol; saline; Intrauterine (uterine horn); Sheep (ewe); 2ML1; 7 days; Controls received mp w/ vehicle; animal info (Mature Rambouillet); good methods (pg 2); vinyl tubing used (0007760); 2% ethanol used; enzyme inhibitor (prostaglandin synthase two); tissue perfusion (intrauterine).



Q2057: P. Dorniak, *et al.* Conceptus-Derived Prostaglandins Regulate Endometrial Function in Sheep. *Biology of Reproduction* 2012;87(1):U80-U86

ALZET Comments: Interferon, tau, recomb. ovine; meloxicam; PGE2, ovine serum; PGF2a, ovine serum; PGI2, ovine serum; Ethanol; saline; Intrauterine (uterine horn); Sheep (ewe); 2ML1; 5 days; Controls received mp w/ vehicle; animal info (Mature Rambouillet); tissue perfusion (intrauterine); multiple pumps used (2); enzyme inhibitor (prostaglandin synthase two).

Q1903: S. Cuevas, *et al.* Role of Renal DJ-1 in the Pathogenesis of Hypertension Associated With Increased Reactive Oxygen Species Production. *Hypertension* 2012;59(2):446-452

ALZET Comments: RNA, small interfering, DJ-1; In vivo transfection agent; Kidney; Mice; 1007D; 7 days; Controls received mp w/ non-silencing RNA; animal info (F1 hybrid; wt, 6-8 mo old, uninephrectomized, adult, male, C57BL/6J); ALZET polyethylene tubing set used (0007701); tissue perfusion (kidney); "The osmotic pump was sutured to the abdominal wall to prevent excessive movement of the pump" pg 447.

Q2327: H. Chim, *et al.* Stromal-cell-derived factor (SDF) 1-alpha in combination with BMP-2 and TGF-beta1 induces site-directed cell homing and osteogenic and chondrogenic differentiation for tissue engineering without the requirement for cell seeding. *Cell and Tissue Research* 2012;350(1):89-94

ALZET Comments: Stromal-cell-derived factor-1, alpha; bone morphogenic protein 2; transforming growth factor-1, beta; IP (abdominal wall); Rat; 2004; 4 weeks; Negative control animals received no cytokines; animal info (Sprague Dawley, adult); "A custom-made apparatus for the constant delivery of cytokines was assembled consisting in a microneedle system and Alzet osmotic pump" pg 90; fig 1b, image of custom-made cytokine delivery apparatus; tissue perfusion (anterior abdominal wall).

Q2262: A. Casazza, *et al.* Tumour growth inhibition and anti-metastatic activity of a mutated furin-resistant Semaphorin 3E isoform. *EMBO Molecular Medicine* 2012;4(3):234-250

ALZET Comments: Semaphorin 3E; IP; Mice; 2002; 2 weeks; Controls received mp w/ mock saline; animal info (12-14 wks old, RT2); tissue perfusion (pancreas); catheter placement verified post mortem; "(silastic tubing) was passed into the peritoneal cavity and sutured to the abdominal wall to reach directly the pancreas." data supplement; protein.

Q1394: J. M. Wen, *et al.* A(2B) adenosine receptor contributes to penile erection via PI3K/AKT signaling cascade-mediated eNOS activation. *FASEB Journal* 2011;25(8):2823-2830

ALZET Comments: Intrapenile; Mice; Animal info (A2BR-deficient, C57CL/6); tissue perfusion (corpus cavernosum); ALZET mouse jugular catheter used; 25-gauge needle inserted into the right corpus cavernosum was connected to a pressure transducer and an amplifier unit; intracavernosal pressure (ICP) measurement.

Q1236: E. A. Miyasaka, *et al.* In vivo growth of a bioengineered internal anal sphincter: comparison of growth factors for optimization of growth and survival. *PEDIATRIC SURGERY INTERNATIONAL* 2011;27(2):137-143

ALZET Comments: Fibroblast growth factor-2; vascular endothelial growth factor-2; platelet-derived growth factor; SC; Mice; 1004; 28 days; Controls received mp with no growth factors; animal info (C57BL/6); good methods, pg 138; tissue perfusion (internal anal sphincter); silicone catheter used; "the osmotic pumps we used completed delivery of the growth factors by 28 days, which would clearly limit the duration of exposure to the growth factor, lessening the risk of malignancy" pg 143.

Q1509: X. Li, *et al.* Protective Role of Hydrogen Sulfide against Noise-Induced Cochlear Damage: A Chronic Intracochlear Infusion Model. *PLoS One* 2011;6(10):U487-U492

ALZET Comments: Sodium hydrosulfide; propargylglycine, DL-; Ear (cochlea); Rat; 2002; Controls received mp w/ artificial perilymph; animal info (Sprague Dawley, 250-350 g); tissue perfusion (cochlear); ALZET mouse jugular catheter used (#0007700); stress/adverse effects, pg e26728 "Two rats died of post-surgical infection, and one rat died of hemorrhage."

Q1195: P. A. Leake, *et al.* Brain-Derived Neurotrophic Factor Promotes Cochlear Spiral Ganglion Cell Survival and Function in Deafened, Developing Cats. *Journal of Comparative Neurology* 2011;519(8):1526-1545



ALZET Comments: Brain-derived neurotrophic factor, human; Perilymph, artificial; Ear (cochlea); Cat; 1002; 2004; 10 weeks; Controls received mp w/ vehicle; long-term study; animal info (adult, 4 wks old, deafened); functionality of mp verified via residual volume; pumps replaced after two weeks then after 28 days; tissue perfusion (cochlea); "The drug-delivery cannula within the cochlear implant... was connected to vinyl tubing..., which was connected to the regulator of the osmotic pump, which was implanted behind the right pinna."; artificial perilymph recipe.

Q1178: T. Kondo, *et al.* Wnt Signaling Promotes Neuronal Differentiation from Mesenchymal Stem Cells Through Activation of Tlx3. *Stem Cells* 2011;29(5):836-846

ALZET Comments: Wnt1; brain-derived neurotrophic factor; Ear (cochlea); Gerbil; 2004; 28 days; Controls received mp w/ saline or BDNF only; animal info (Mongolian, 4 mo old); pumps replaced after 72 hours; tissue perfusion (intracochlea).

Q0856: J. Q. Huang, *et al.* Renal (pro)renin receptor contributes to development of diabetic kidney disease through transforming growth factor-beta1 - connective tissue growth factor signalling cascade. *Clinical and Experimental Pharmacology and Physiology* 2011;38(4):215-221

ALZET Comments: Handle region peptide; valsartan; Kinney (renal cortex); Rat; 14 days; Controls received sham mp w/ saline; animal info (male, Sprague-Dawley, 230-260 g); tissue perfusion (renal cortex); peptides.

Q0954: L. Abamrane, *et al.* Intracochlear perfusion of leupeptin and z-VAD-FMK: influence of antiapoptotic agents on gunshot-induced hearing loss. *European Archives of Oto-rhino-laryngology* 2011;268(7):987-993

ALZET Comments: Leupeptin; z-VAD-FMK; Ear (cochlea); Guinea pig; 2001; 7 days; Controls received no treatment; animal info (albino, 400-600 g); enzyme inhibitor (caspase); artificial perilymph solution recipe; "A miniature glass pipette with a ring of glue placed next to the tip to provide a leak-proof seal protecting the cochlea from contamination was connected to the catheter." pg 988; tissue perfusion.

Q1665: F. Watanabe, *et al.* Signaling through erbB receptors is a critical functional regulator in the mature cochlea. *European Journal of Neuroscience* 2010;32(5):717-724

ALZET Comments: PD153035; 4557W; DMSO; artificial perilymph; Ear (cochlea); Guinea pig; 2002; Controls received mp w/ artificial perilymph; animal info (female, pigmented, 250-500 g); functionality of mp verified by residual volume; tissue perfusion (intracochlear); 0.1% DMSO used; enzyme inhibitor (tyrosine kinase).

Q1391: A. Warnecke, *et al.* Artemin improves survival of spiral ganglion neurons in vivo and in vitro. *NeuroReport* 2010;21(7):517-521

ALZET Comments: Artemin; brain-derived neurotrophic factor; Ear (scala tympani); Guinea pig; 2002; 28 days; Negative controls received mp w/ artificial perilymph; animal info (deafened, pigmented, 250-450 g); pumps replaced after 14 days; tissue perfusion (scala tympani); pump connected to silicone-polyimide tubing.

Q1551: J. R. A. Sherwin, *et al.* The Endometrial Response to Chorionic Gonadotropin Is Blunted in a Baboon Model of Endometriosis. *Endocrinology* 2010;151(10):4982-4993

ALZET Comments: Chorionic gonadotropin hormone, human recomb.; Saline; SC; intrauterine; Monkey (baboon); 2ML1; Animal info (30 mo old, spontaneous endometriosis); tissue perfusion (oviductal lumen).

Q1605: M. P. Robich, *et al.* Effects of neuropeptide Y on collateral development in a swine model of chronic myocardial ischemia. *Journal of Molecular and Cellular Cardiology* 2010;49(6):1022-1030

ALZET Comments: Neuropeptide Y (3-36); Heparin; BSA; PBS; Intramyocardial; Pig (miniswine); 4 weeks; Controls received mp w/ placebo; animal info (Intact, adult, male, Yorkshire, miniswine); 2ML sized pump used; tissue perfusion (myocardium).

Q0308: S. Raghavan, *et al.* Successful implantation of physiologically functional bioengineered mouse internal anal sphincter. *American Journal of Physiology-Gastrointestinal and Liver Physiology* 2010;299(2):G430-G439

ALZET Comments: Fibroblast growth factor-2, human, recomb; SC; Mice; 1004; 21 days; Animal info (C57BL/6J female, specific pathogen-free, 8 wk old); ALZET PE catheter used; catheter connected to physiologically functional bioengineered mouse internal anal sphincter; tissue perfusion (internal anal sphincter).



Q1229: L. C. Matavelli, *et al.* (Pro)renin receptor contributes to diabetic nephropathy by enhancing renal inflammation. *Clinical and Experimental Pharmacology and Physiology* 2010;37(3):277-282

ALZET Comments: Handle region peptide; valsartan; Saline; Kidney (renal cortical interstitium); Rat; 2002; 14 days; Controls received mp w/ vehicle; animal info (Sprague Dawley. STZ-induced diabetes, male 230-260 g); peptides; good methods, pg 278; tissue perfusion (interstitium); HRP, also known as handle region peptide, is the decapeptide NH₃-RILLKKMPSVCOOH; good methods, pg 278; "The osmotic minipump was implanted subcutaneously in the subscapular region of all rats. Thereafter, a midline laparotomy was performed and the left kidney was isolated. A PE-10 catheter connected to each minipump was tunneled subcutaneously through a bevel-tipped stainless-steel tube to emerge into the abdominal cavity and the distal end of the catheter was placed under the left renal capsule and glued onto the surface of the kidney using Vetbond." pg 278.

Q1616: H. N. Lang, *et al.* Chronic Reduction of Endocochlear Potential Reduces Auditory Nerve Activity: Further Confirmation of an Animal Model of Metabolic Presbycusis. *JARO-JOURNAL OF THE ASSOCIATION FOR RESEARCH IN OTOLARYNGOLOGY* 2010;11(3):419-434

ALZET Comments: Furosemide; Ear (round window niche); Gerbil; 2004; 4 weeks; Controls were untreated; animal info (3-6 mo old, young adult); good methods, pg 421; tissue perfusion (round window).

Q0063: M. Hashish, *et al.* Surgical implantation of a bioengineered internal anal sphincter. *Journal of Pediatric Surgery* 2010;45(1):52-58

ALZET Comments: Fibroblast growth factor-2, recomb.; PBS, sterile; SC; Mice; 1004; 25 days; Controls received mp w/ vehicle; tissue perfusion (internal anal sphincter); no stress (see pg. 57); good methods (pg. 53); animal info (female, C57BL/6, 8 wks old); "use of such pumps provided constant infusion over the postimplantation period without observed evidence of systemic effects and allowed increased efficiency of the drug owing to its proximity" pg. 57; operative photographs (pg. 54).

Q1685: A. Fransson, *et al.* Post-Treatment Effects of Local GDNF Administration to the Inner Ears of Deafened Guinea Pigs. *Journal of Neurotrauma* 2010;27(9):1745-1751

ALZET Comments: Glial-derived neurotrophic factor; Ear (cochlea); Guinea pig; 2002; 4 weeks; Controls received mp w/ artificial perilymph; animal info (deafened); silicone tube used; tissue perfusion (cochlea); pump replaced after 2 weeks; post op. care (lidocaine).

Q1005: J. J. Brosens, *et al.* Proteomic analysis of endometrium from fertile and infertile patients suggests a role for apolipoprotein A-I in embryo implantation failure and endometriosis. *MOLECULAR HUMAN REPRODUCTION* 2010;16(4):273-285

ALZET Comments: Chorionic gonadotropin hormone, human recomb.; Oviductal; Monkey (baboon); 5 days; Animal info (cycling, female, 7-12 years old, 12-18 kg); tissue perfusion (oviduct).

P9515: V. Scheper, *et al.* Effects of Delayed Treatment With Combined GDNF and Continuous Electrical Stimulation on Spiral Ganglion Cell Survival in Deafened Guinea Pigs. *Journal of Neuroscience Research* 2009;87(6):1389-1399

ALZET Comments: Glial-derived neurotrophic factor; Ear (cochlea); Guinea pig; 2002; 48 days; Controls received mp w/artificial perilymph; tissue perfusion (cochlea); long-term study; pumps replaced after 13 days; good methods (pg. 1391); animal info (male, pigmented, 250-450 g.); pumps primed; image of pump and electrode cannula device used on fig. 1.

P9844: H. Orita, *et al.* Unilateral intra-perilymphatic infusion of substance P enhances ipsilateral vestibulo-ocular reflex gains in the sinusoidal rotation test. *Neuroscience Letters* 2009;449(3):207-210

ALZET Comments: Substance P; neurokinin-1 receptor antagonist; Ear (round window); Guinea pig; 2002; Post op. care (piperacillin sodium); animal info (Hartley); pump was connected to a PE catheter filled with artificial perilymph for a 12-hour delayed infusion; tissue perfusion (round window).

Q0333: Y. Nguyen, *et al.* An animal model of cochlear implantation with an intracochlear fluid delivery system. *Acta Oto-laryngologica* 2009;129(11):1153-1159



ALZET Comments: Saline; Ear (cochlea); Guinea pig; 1007D; Controls received pump without electrode implant; animal info (albino, male, 3 to 7 months old, 290-1030 g.); good methods pg 1154; post op. care (enrofloxacin); "the pump was fixed subcutaneously between the scapulae using a vicryl 3/0 suture (Ethicon)" pg 1154; image of pump-electrode device, Fig. 1; tissue perfusion (cochlea).

P9613: T. Ma, *et al.* In Vivo Murine Model of Continuous Intramedullary Infusion of Particles-A Preliminary Study. JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART B-APPLIED BIOMATERIALS 2009;88B(1):250-253

ALZET Comments: Polystyrene particles, blue dyed; PBS; Bone (femur); Mice; 2004; 4 weeks; Functionality of mp verified by gross inspection of retrieved femora; animal info (9 wks old, male, C57BL/6); Fig. 1, X-ray image of pump and delivery system; tissue perfusion (femur).

P9426: Y. H. Liu, *et al.* N-acetyl-seryl-aspartyl-lysyl-proline prevents cardiac remodeling and dysfunction induced by galectin-3, a mammalian adhesion/growth-regulatory lectin. American Journal of Physiology-Heart and Circulatory Physiology 2009;296(2):H404-H412

ALZET Comments: Galectin-3; Ac-SDKP; Saline; Intrapericardial; Rat; 2004; 2, 4 weeks; Controls received mp w/ vehicle; tissue perfusion (heart); no stress (see pg. H407); cardiovascular; peptides; animal info (male, Sprague Dawley, 275-300 g.); "We used intrapericardial administration of Gal-3 and/or Ac-SDKP in rats. This method allows us to target the heart and obtain site-selective drug efficiency with low-level systemic effects." (p. H404-H405).

Q1126: Z. Q. Hu, *et al.* Functional Evaluation of a Cell Replacement Therapy in the Inner Ear. OTOTOLOGY & NEUROTOLOGY 2009;30(4):551-558

ALZET Comments: Nerve growth factor; Hank's based salt solution; albumin, guinea pig serum; Ear (cochlea); Guinea pig; 2002; Controls received mp w/ vehicle; animal info (pigmented, adult, 270-470 g); pumps replaced after 13 days; post op. care (daily injections of cyclosporin and doxycycline); tissue perfusion.

P9866: J. L. Haylor, *et al.* Inhibition of compensatory renal growth by the N-terminus of a sheep-derived peptide. REGULATORY PEPTIDES 2009;152(1-3):48-53

ALZET Comments: EPL001; antibody, EPL001, mouse, monoclonal; Kidney; Rat; 2002; Tissue perfusion (renal); replacement therapy (unilateral nephrectomy); peptides; animal info (male, Wistar, 250-300 g.); EPL001 is a novel sheep derived 14 amino acid peptide.

P9871: C. Gillio-Meina, *et al.* Expression patterns and role of prostaglandin-endoperoxide synthases, prostaglandin E synthases, prostacyclin synthase, prostacyclin receptor, peroxisome proliferator-activated receptor delta and retinoid x receptor alpha in rat endometrium during artificially-induced decidualization. REPRODUCTION 2009;137(3):537-552

ALZET Comments: Carbaprostacyclin; cicaprost; AFP-07; L-165041; docasahexanoic acid; Ethanol; cyclodextrin, beta-; Tris; DMSO; indomethacin; Intrauterine (uterine horn); Rat; 2001; Controls received mp w/ vehicle; replacement therapy (ovariectomy); good methods (pg. 551); animal info (female, Sprague Dawley, 7 wks old, 200-225 g., OVX); 50% DMSO used; AFP-07 and cicaprost are high-affinity ligands for prostacyclin receptor; carbaprostacyclin is a ligand for both prostacyclin receptor and peroxisome proliferator-activated receptor delta; tissue perfusion (uterus); 3 mg/ml beta-cyclodextrin used.

P9796: A. Fransson, *et al.* In Vivo Infusion of UTP and Uridine to the Deafened Guinea Pig Inner Ear: Effects on Response Thresholds and Neural Survival. Journal of Neuroscience Research 2009;87(7):1712-1717

ALZET Comments: Uridine triphosphate; uridine; Ear (cochlea); Guinea pig; 2002; 25 days; Controls received mp w/ artificial perilymph; pumps replaced on day 13; animal info (pigmented, 280-440 g); tissue perfusion.

Q0453: M. J. H. Agterberg, *et al.* Enhanced Survival of Spiral Ganglion Cells After Cessation of Treatment with Brain-Derived Neurotrophic Factor in Deafened Guinea Pigs. JARO-JOURNAL OF THE ASSOCIATION FOR RESEARCH IN OTOLARYNGOLOGY 2009;10(3):355-367

ALZET Comments: Brain-derived neurotrophic factor; BSA; Ear (cochlea); Guinea pig; 2004; 4 weeks; Controls were untreated; animal info (albino, female, 250-350 g); pump connected to Cochlear (R) electrode array; tissue perfusion (cochlea).



P9335: A. Abbaspour, *et al.* Optimal increase in bone mass by continuous local infusion of alendronate during distraction osteogenesis in rabbits. *Bone* 2009;44(5):917-923

ALZET Comments: Alendronate; PBS; Bone (tibia); Rabbit; 2ML2; 14 days; Controls received mp w/ vehicle; tissue perfusion (tibia); animal info (male, Japanese White rabbits); disphosphonate; the pump was connected to polyvinyl catheter leading to a hole drilled on the tibia (lengthened segment).

P9687: J. Yatabe, *et al.* Effects of Decreased Renal Cortical Expression of G Protein-Coupled Receptor Kinase 4 and Angiotensin Type 1 Receptors in Rats. *HYPERTENSION RESEARCH* 2008;31(7):1455-1464

ALZET Comments: Oligodeoxynucleotide, antisense; oligodeoxynucleotide, scrambled; G-protein-coupled receptor kinase 4; Ringer's solution, lactated; Kidney; Rat; 5 weeks; Controls received mp w/ vehicle; pumps replaced following 1 week recovery period; antisense (GRK4, AT₁R); animal info (4 wks old, male, WKY, SHR, uninephrectomized); tissue perfusion (kidney).

P9292: R. J. Vivero, *et al.* Dexamethasone Base Conserves Hearing from Electrode Trauma-Induced Hearing Loss. *Laryngoscope* 2008;118(11):2028-2035

ALZET Comments: Dexamethasone base; Perilymph, artificial; Ear (scala tympani); Guinea pig; 2001; 8 days; Controls received mp w/ vehicle; replacement therapy (cochleostomy); tissue perfusion (scala tympani); animal info (pigmented, 250-300 g.).

R0266: E. E. L. Swan, *et al.* Inner ear drug delivery for auditory applications. *Advanced Drug Delivery Reviews* 2008;60(15):1583-1599

ALZET Comments: Cisplatin; Sodium thiosulfate; Brain-derived neurotrophic factor; Fibroblast growth factor; D-JNK1-1; BN82270; Tetrodotoxin; Perilymph, artificial; Dexamethasone; Methylprednisone; Caroverine; Methionine, D-; Thiourea; Liposome, cationic; Neomycin; SC; Ear (round window membrane); Ear (cochlea); Ear (scala tympani); Ear; Guinea pig; 3, 7, 14, 28 days; Gene therapy; peptides; no stress; enzyme inhibitor (peroxidase); stress/adverse reaction (see pg 1593) "Ref #161 found local trauma and inflammatory responses"; tissue perfusion (scala tympani, cochlea, round window membrane); comparison of middle ear injections vs. mp; Review, see pgs. 1587 - 1589, 1591, 1593 - 1595, refs #49, 50, 60, 63, 72, 75, 102, 104,180, 181, 194-201.

P9051: B. N. Song, *et al.* Effects of delayed brain-derived neurotrophic factor application on cochlear pathology and auditory physiology in rats. *Chinese Medical Journal* 2008;121(13):1189-1196

ALZET Comments: Brain-derived neurotrophic factor, recomb. human; Albumin, rat; Ringer's solution; Ear (cochlea); Rat; 2004; 28 days; Controls received mp w/ vehicle; animal info (male, albino, Sprague Dawley, 10-12 wks old, 220-250 g.); tissue perfusion (cochlea); functionality of mp verified by residual volume; good methods pg. 1191; pumps were primed in sterile saline at 37 degree Celsius for 48 hours; 1-cm len.

P9217: G. B. Silva, *et al.* Angiotensin II-Dependent Hypertension Increases Na Transport-Related Oxygen Consumption by the Thick Ascending Limb. *Hypertension* 2008;52(6):1091-1098

ALZET Comments: Angiotensin II; dye, coomassie blue R250; G86976; tempol; SC; kidney (outer medulla); Rat; 1007D; 4, 7 days; Controls received mp w/ vehicle; tissue perfusion (kidney); functionality of mp verified by residual volume and dye infusion; enzyme inhibitor (PKC a/b); cardiovascular; antihypertensive; peptide; cyanoacrylate adhesive; animal info (Sprague Dawley, 7 wks old, 200-250 g.); catheter fenestrated in one side 10 mm from the tip.

P9218: R. K. Shepherd, *et al.* Neurotrophins and electrical stimulation for protection and repair of spiral ganglion neurons following sensorineural hearing loss. *Hearing Research* 2008;242(1-2):100-109

ALZET Comments: Brain-derived neurotrophic factor, recomb. human; Ringer's solution; albumin, guinea pig; Ear (scala tympani); Guinea pig; 2004; 4 weeks; Controls received no treatment to contralateral cochlea; functionality of mp verified by residual volume and intact connections; peptides; post op. care (Carprofen, Baytril); tissue perfusion (scala tympani); animal info (pigmented, 400-844 g., kanamycin/furosemide deafened).



P9224: J. H. Reyes, *et al.* Glutamatergic Neuronal Differentiation of Mouse Embryonic Stem Cells after Transient Expression of Neurogenin 1 and Treatment with BDNF and GDNF: In Vitro and In Vivo Studies. *Journal of Neuroscience* 2008;28(48):12622-12631

ALZET Comments: Doxycycline; brain-derived neurotrophic factor; glial cell line-derived neurotrophic factor; Ear (scala tympani); Guinea pig; 2002; 27 days; Controls received no treatment to contralateral ear; pumps replaced; peptides; tissue perfusion (scala tympani); animal info (NIH strain, 275-315 g., deafened); cannula and catheter contained doxycycline, mp contained BDNF/GDNF (delayed delivery) to follow, thus providing 2 days Dox, 25 days BDNF/GDNF.

P9121: Y. W. Qiang, *et al.* Wnt3a signaling within bone inhibits multiple myeloma bone disease and tumor growth. *Blood* 2008;112(2):374-382

ALZET Comments: Gene, Wnt3a, recomb.; Bone; Mice (SCID); 1004; 4 weeks; Controls received mp w/ PBS; animal info (Myelomatous SCID-hu); tissue perfusion (myelomatous bone); Wnt3a is a human gene; ALZET pump was "directly connected to the open side of the implanted bone, allowing continual exposure of the myelomatous bone to rWnt3a".

P9306: R. Panford-Walsh, *et al.* Midazolam reverses salicylate-induced changes in brain-derived neurotrophic factor and Arg3.1 expression: Implications for tinnitus perception and auditory plasticity. *MOLECULAR PHARMACOLOGY* 2008;74(3):595-604

ALZET Comments: Midazolam; Ear (round window niche); Rat; 2001; 7 days; Controls received mp w/ artificial perilymph; comparison of systemic injections vs. mp; animal info (female, Wistar, 200-300 g., cochlear trauma); behavioral testing (tinnitus perception via sound/reward); tissue perfusion (round window niche).

P9212: S. G. Ortiz, *et al.* Continuous Intramedullary Polymer Particle Infusion Using a Murine Femoral Explant Model. *JOURNAL OF BIOMEDICAL MATERIALS RESEARCH PART B-APPLIED BIOMATERIALS* 2008;87B(2):440-446

ALZET Comments: Polystyrene; polyethylene, high molecular weight; Serum, mouse; Bone (femur); Mice; 2004; 2, 4 weeks; Controls received mp w/ vehicle; functionality of mp verified by blue-dyed polystyrene particles; tissue perfusion (femur); dose-response (fig. 4); no stress (see pg. 443); animal info (male, C57BL/6, 12-16 wks old); mp connected to hollow titanium rod by vinyl catheter; titanium rod inserted into femur ex vivo; femur/pump assemblies placed in sterile flasks at 37 degree for 2, 4 wks; "There were no cases of infection or malfunction of the pumps apparatus over the course of the experiment." (p. 443).

P9760: E. M. Keithley, *et al.* Tumor necrosis factor alpha can induce recruitment of inflammatory cells to the cochlea. *OTOLOGY & NEUROTOLOGY* 2008;29(6):854-859

ALZET Comments: Tumor necrosis factor-alpha; Ear (cochlea); Guinea pig; 2001; 2-4 days; Controls received mp w/vehicle; animal info (Hartley albino); tissue perfusion.

P9239: J. A. Harris, *et al.* Afferent Deprivation Elicits a Transcriptional Response Associated with Neuronal Survival after a Critical Period in the Mouse Cochlear Nucleus. *Journal of Neuroscience* 2008;28(43):10990-11002

ALZET Comments: Tetrodotoxin; Citrate buffer; Ear (round window niche); Mice; 1003D; 24 hours; Controls received mp w/ saline or no treatment to contralateral side; tissue perfusion (round window niche); comparison of cochlear removal vs. mp; animal info (male, female, C57BL/6J, 21 days old).

P9200: M. D. Doerr, *et al.* Effects of endothelin receptor type-A and type-B antagonists on prostaglandin F_{2alpha}-induced luteolysis of the sheep corpus luteum. *Biology of Reproduction* 2008;78(4):688-696

ALZET Comments: BQ123; BQ610; BQ788; Methanol; saline; Intraovarian (corpus luteum); Sheep; 2002; 14 days; Controls received mp w/ vehicle; tissue perfusion (corpus luteum); good methods (pg. 689); post op. care (penicillin); animal info (female); pumps were primed overnight prior to surgery; vinyl catheter tubing (0007760) used; catheter stabilized to connective tissue capsule and ovarian tunica albuginea using nylon monofilament; all compounds are EDNRA type-A endothelin antagonists.

P8833: M. Boodhwani, *et al.* Comparison of vascular endothelial growth factor and fibroblast growth factor-2 in a swine model of endothelial dysfunction. *European Journal of Cardio-thoracic Surgery* 2008;33(4):645-650



ALZET Comments: Vascular endothelial growth factor 165, recomb. human; Heparin; Intramyocardial; Pig (miniswine); 2ML4; 4 weeks; Tissue perfusion (myocardial); half-life (p. 649) "short"; cardiovascular; peptides; ischemia (cardiac); animal info (Yucatan mini-swine, 20-30 kg.).

P8930: A. Abbaspour, *et al.* Continuous local infusion of fibroblast growth factor-2 enhances consolidation of the bone segment lengthened by distraction osteogenesis in rabbit experiment. *Bone* 2008;42(1):98-106

ALZET Comments: Fibroblast growth factor-2, recomb. human; Bone (tibia); Rabbit; 2ML4; 14 days; half-life (p. 104) "relatively short"; tissue perfusion (tibia); animal info (male, 1.8-2.2 kg., osteotomized); polyvinyl catheter tubing used; pump image fig. 1e.

P9142: R. M. Wazen, *et al.* In vivo functional analysis of polyglutamic acid domains in recombinant bone sialoprotein. *JOURNAL OF HISTOCHEMISTRY & CYTOCHEMISTRY* 2007;55(1):35-42

ALZET Comments: Bone sialoprotein, recomb., rat, -DNP; bone sialoprotein, recomb., rat, -DNP, mutated; Bone (hemimandible); Rat; 1003D; 2001D; 1, 3 days; Negative controls received mp w/ sodium chloride or were sham operated; peptides; tissue perfusion (right hemimandible); post op. care (buprenorphine hydrochloride); animal info (Wistar, 100g.); bone sialoprotein (BSP) is an anionic phosphoprotein; prBSP-DNP's are prokaryotic recombinant BSP's tagged with dinitrophenol.

P8368: J. Wang, *et al.* Inhibition of the c-Jun N-terminal kinase-mediated mitochondrial cell death pathway restores auditory function in sound-exposed animals. *MOLECULAR PHARMACOLOGY* 2007;71(3):654-666

ALZET Comments: Jun, c-, N-Terminal kinase Inhibitor-1, D-; peptide, D-TAT; Jun, c-, N-Terminal kinase Inhibitor-1-mutant; Perilymph, artificial; PBS; Ear (round window membrane); Guinea pig; 2001; 7 days; Controls received mp w/ vehicle, or inactive JNKI-1-mutant or TAT-empt peptide or contralateral untreated ear; dose-response (fig 6); comparison of acute infusion vs. hyaluronic acid gel vs.; enzyme inhibitor (c-Jun N-terminal kinase); peptides; animal info (pigmented, 250-300g.; sound trauma); D-JNKI-1 peptide contains a 10-amino acid HIV-TAT transporter sequence to facilitate its entry into cells; tissue perfusion (round window membrane).

P8496: Z. Y. Sun, *et al.* Masticatory mechanics of a mandibular distraction osteogenesis site: Interfragmentary micromovement. *Bone* 2007;41(2):188-196

ALZET Comments: Amikacin; Sub-masseteric tunnel; Pig; 2ML2; 14 days; Bone healing; x-ray image showing pump adjacent to mandible bone (p. 189); pump positioned near mandible bone to deliver antibiotics for infection control; tissue perfusion (sub-masseteric tunnel).

P9024: B. Skoglund, *et al.* Locally applied Simvastatin improves fracture healing in mice. *BMC MUSCULOSKELETAL DISORDERS* 2007;8(1):U1-U6

ALZET Comments: Simvastatin; PEG 400; SC; bone (femur); Mice; 1002; 14 days; Comparison of SC injections vs. SC mp vs. localized delivery; half-life (p. 2 of 6) "about 2 hours in humans"; animal info (mature, male, Balb-C); tissue perfusion (femur); compound passed through sterile filter before filling in pumps; silicone tube used; "continuous systemic delivery resulted in a 160% larger force at failure."; "Continuous local delivery... resulted in a 170% larger force at failure as well as a twofold larger energy uptake."

P8738: P. Roehm, *et al.* Gentamicin uptake in the chinchilla inner ear. *Hearing Research* 2007;230(1-2):43-52

ALZET Comments: Gentamicin; Ear (round window); Chinchilla; 2002; 1, 3, 6, 14 days; 4, 8 hours; Comparison of transtympanic injections vs. mp; tissue perfusion (round window); animal info (male, female, chinchilla langier).

P8661: J. M. Miller, *et al.* Delayed neurotrophin treatment following deafness rescues spiral ganglion cells from death and promotes regrowth of auditory nerve peripheral processes: Effects of brain-derived neurotrophic factor and fibroblast growth factor. *Journal of Neuroscience Research* 2007;85(9):1959-1969

ALZET Comments: Brain-derived neurotrophic factor; fibroblast growth factor-1; Perilymph, artificial; albumin, guinea pig serum; Ear (scala tympani); Guinea pig; 2002; 26 days; Controls received mp w/ vehicle; pumps replaced at day 13; peptides; tissue perfusion (scala tympani); animal info (male, female, pigmented, 250-300g, deafened).



P8729: S. Masunaga, *et al.* Dependency of repair of radiation-induced damage on p53 status and efficient inhibition of the repair with wortmannin treatment in vivo, with reference to the effect on intratumor quiescent cell population. *Oncology Reports* 2007;18(6):1589-1596

ALZET Comments: Uridine, bromodeoxy-; Saline; SC; Mice (nude); 2001; 7 days; Tissue perfusion (tumor); cancer; animal info (Balb/cA, nude); labeling of tumor cells.

P8402: J. Maruyama, *et al.* Effects of antioxidants on auditory nerve function and survival in deafened guinea pigs. *NEUROBIOLOGY OF DISEASE* 2007;25(2):309-318

ALZET Comments: Trolox; neomycin; ascorbic acid; Perilymph, artificial; sodium bicarbonate; Ear (cochlea); Guinea pig; 2002; 26 days; Controls received mp w/ vehicle; pumps replaced after 14 days; post op. care (doxycycline); animal info (male, pigmented, 250-400g., neomycin deafening); cannula primed with 10% neomycin solution followed by a small air bubble spacer to allow neomycin infusion for first 2 days; trolox, a vitamin F analogue, and ascorbic acid delivered together in 1 mp; tissue perfusion (cochlea).

P8478: T. Ma, *et al.* Modulation of allograft incorporation by growth factors over a prolonged continuous infusion of duration in vivo. *Bone* 2007;41(3):386-392

ALZET Comments: Fibroblast growth factor-2; osteogenic protein-1, recomb. human; Water, distilled; acetate buffer; Bone (tibia); Rabbit; 2004; 4,36 weeks; Controls received no treatment to contralateral side; long-term study; pumps replaced every 4 weeks, with 4 week rest periods between 4 week infusion periods; animal info (New Zealand white, 6-12 months old, 3.5-4.2 kg); peptides; OP-1 also known as bone morphogenic protein-7 (BMP-7); tissue perfusion (tibia); unique drug test chamber and bone harvest chamber used in conjunction with mp.

P8281: M. C. Lee, *et al.* Epiphysiodesis with infusion of stromal cell-derived factor-1 in rabbit growth plates. *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME* 2007;89A(1):102-113

ALZET Comments: Stromal cell-derived factor-1a, recomb. human; dye, methylene blue; PBS; hypaque; Bone (tibial physis); Rabbit; 2001D; 2004; 2,4 weeks; 24 hours; Controls received mp w/ vehicle and control leg w/ no treatment; functionality of mp verified by methylene blue study, hypaque; good methods (p. 103-105); peptides; post op. care (buprenorphine); tissue perfusion (tibial physis); animal info (New Zealand white, 6 weeks old, 2.5 kg); catheter with 16 fenestrations used; 30% hypaque, which "served as a radio-opaque marker of pump reservoir level."; "A continuous, implantable, direct delivery system offers a practical model for studying the local effects of various reagents on the physis and a therapeutic model by which agents for use in epiphysiodesis may be evaluated." (p. 110).

P8680: M. M. Joyce, *et al.* Pig conceptuses secrete estrogen and interferons to differentially regulate uterine STAT1 in a temporal and cell type-specific manner. *Endocrinology* 2007;148(9):4420-4431

ALZET Comments: Conceptus secretory proteins, porcine; Intrauterine; Pig; 2ML1; Controls received mp w/ albumin, porcine serum; tissue perfusion (uterus); good methods p. 4421; peptides; multiple pumps per animal (2); animal info (female).

P8536: M. M. Joyce, *et al.* Pig conceptuses increase uterine interferon-regulatory factor 1 (IRF1), but restrict expression to stroma through estrogen- induced IRF2 in luminal epithelium. *Biology of Reproduction* 2007;77(2):292-302

ALZET Comments: Conceptus secretory proteins, porcine; Albumin, porcine serum; dye, india ink; PBS; Intrauterine (uterine horn); Pig; 2ML1; 4 days; Controls received mp w/ PSA; peptides; multiple pumps per animal (2); animal info (female, pseudopregnant); india ink used to confirm agent distribution in uterus; tissue perfusion (uterine horn).

P8724: R. Hori, *et al.* Pharmacological inhibition of Notch signaling in the mature guinea pig cochlea. *NeuroReport* 2007;18(18):1911-1914

ALZET Comments: MDL 28170; DMSO; PBS; Ear (cochlea); Guinea pig; 1002; 14 days; Tissue perfusion (cochlea); enzyme inhibitor (gamma secretase); peptides; animal info (Hartley strain, 350-400g); MDL 28170 is a gamma-secretase inhibitor; 0.3% DMSO used; "a silicon tube (180 micron OD) connected to a micro-osmotic minipump..."

P8429: B. L. Frederiksen, *et al.* Does erythropoietin augment noise induced hearing loss? *Hearing Research* 2007;223(1-2):129-137



ALZET Comments: Erythropoietin; Ear (round window); Guinea pig; 1007D; 1 week; Controls received mp w/ saline; replacement therapy (noise-induced hearing impairment); comparison of acute admin. vs. mp; peptides; animal info (male, Dunkin-Hartley); tissue perfusion (round window); mp primed 6 hours in 37 Celsius saline; correct catheter placement confirmed.