References on Wound Healing Studies
Using ALZET® Osmotic Pumps

Q7251: J. H. Park*, et al.* TAK-733 inhibits inflammatory neointimal formation by suppressing proliferation, migration, and inflammation in vitro and in vivo. Exp Mol Med 2018;50(4):37
ALZET Comments: Angiotensin II; SC; Rat; 2004; 2 Weeks; Dose (500 ng/kg/min); Controls received mp w/ saline; animal info (Male Sprague-Dawley rats weighing 250-300 g); cardiovascular;.

Q7223: J. Lu*, et al.* ClC-2 knockdown prevents cerebrovascular remodeling via inhibition of the Wnt/beta-catenin signaling pathway. Cell Mol Biol Lett 2018;23(29
ALZET Comments: Angiotensin II; Saline; SC; Mice; 1002; Dose (1.5 mg/kg/day); Controls received mp w/ vehicle; animal info (Male, 12 weeks old, 20-25 g, C57BL/6); gene therapy;.

Q7078: N. Kumar*, et al.* Thymosin beta4 Deficiency Exacerbates Renal and Cardiac Injury in Angiotensin-II-Induced Hypertension. Hypertension 2018;71(6):1133-1142
ALZET Comments: Angiotensin II; Saline; Acetic acid; SC; Mice; 6 weeks; Dose (980 ng/kg/min); animal info (8-10 week old C57BL/6 and TBeta4 KO mice); cardiovascular;.

Q6934: F. Forini*, et al.* Integrative analysis of differentially expressed genes and miRNAs predicts complex T3-mediated protective circuits in a rat model of cardiac ischemia reperfusion. Sci Rep 2018;8(1):13870
ALZET Comments: THyroid hormone; Saline; SC; Rat; 2ML4; Dose (3 µg/kg/day); Controls received mp w/ vehicle; cardiovascular;.

Q7124: M. Cusimano*, et al.* Selective killing of spinal cord neural stem cells impairs locomotor recovery in a mouse model of spinal cord injury. J Neuroinflammation 2018;15(1):58
ALZET Comments: Ganciclovir; Water; SC; Mice; 2002; 28 days; Dose (100 mg/kg/day); animal info (NestinTK); pumps replaced every 2 weeks; neurodegenerative (Spinal Chord); .

Q5725: S. Zhao*, et al.* Tetramethylpyrazine attenuates carbon tetrachloride-caused liver injury and fibrogenesis and reduces hepatic angiogenesis in rats. Biomed Pharmacother 2017;86(521-530
ALZET Comments: Angiotensin II; Rat; 2004; 2ML4; 5 weeks; Controls received mp w/ saline; animal info (male, Sprague Dawley, 180-220g); cardiovascular; peptides; Dose (25 ug/kg/hr);.

Q5739: J. Raber*, et al.* Mitigating effect of EUK-207 on radiation-induced cognitive impairments. Behav Brain Res 2017;320(457-463
ALZET Comments: EUK-207; Water; SC; Mice; Controls received mp w/ vehicle; animal info (2 months old); behavioral testing (Morris Water Maze, Fear Conditioning); EUK-207 is a catalytic ROS scavenger ; Therapeutic indication (Hippocampus, hippocampal injury, cognitive impairment); Dose (0.2 mg/kg/day);.

Q5111: W. Zhang*, et al.* Targeting of Survivin Pathways by YM155 Inhibits Cell Death and Invasion in Oral Squamous Cell Carcinoma Cells. Cell Physiol Biochem 2016;38(6):2426-37
ALZET Comments: YM155; SC; Mice (nude); 1007D; 7 days; Controls received mp w/ vehicle; animal info (female, nude, 5 weeks old); cancer (Oral squamous cell carcinoma SCC9); Dose (5 mg/kg/day); xenograph model;.

Q4902: C. Weber*, et al.* Macrophage Infiltration and Alternative
Activation during Wound Healing Promote
MEK1-Induced Skin Carcinogenesis. Cancer Res 2016;76(4):805-817
ALZET Comments: arginine, N(omega)-hydroxy-nor-l; SC; Mice; 1004; 33 days; animal info (InvEE); functionality of mp verified by plasma levels; stress/adverse reaction: (see pg. 811); stability verified by (10 days see pg 811); immunology; “Continuous dosing at a rate of 0.25 mL per hour ensured constant compound levels. Successful ARG1 inhibition was confirmed in blood plasma and wounded skin samples taken 5 days after implantation” pg 811; nor-NOHA aka N(omega)-hydroxy-nor-l-arginine;.

Q6648: M. Rauner*, et al.* Increased EPO Levels Are Associated With Bone Loss in Mice Lacking PHD2 in EPO-Producing Cells. J Bone Miner Res 2016;31(10):1877-1887
ALZET Comments: Erythropoietin, recomb. human; SC; Mice (knockout); Mice (transgenic); 30 days; Dose (3 U EPO/day or 10 U EPO/day); Controls received mp w/ vehicle; animal info (8-12 week old WT and Osx:cre-PHD2f/f and Vav:cre-PHD2f/f mice);.

Q5171: S. Okizaki*, et al.* Vascular Endothelial Growth Factor Receptor Type 1 Signaling Prevents Delayed Wound Healing in Diabetes by Attenuating the Production of IL-1beta by Recruited Macrophages. Am J Pathol 2016;186(6):1481-98
ALZET Comments: Placenta growth factor, recombinant human; antibody, interleukin-1B; PBS; SC; Mice; 1007D; 7 days; Controls received mp w/ vehicle or control antibody; animal info (male, C57BL6, 8 weeks old, STZ); immunology; diabetes; Dose (PlGF 10 ug/mouse; anti-IL-1B 1 ug/day);.

Q6632: G. Nicolini*, et al.* Early and Short-term Triiodothyronine Supplementation Prevents Adverse Postischemic Cardiac Remodeling: Role of Transforming Growth Factor-beta1 and Antifibrotic miRNA Signaling. Mol Med 2016;21(1):900-911
ALZET Comments: Triiodothyronine; Saline; SC; Rat; 2002; 48 hours; Dose (6 mg/kg/day); Controls received mp w/ vehicle; animal info (adult male Wistar rats weighing 385 ± 9 g); Triiodothyronine aka T3; cardiovascular;.

Q5578: S. E. Thatcher*, et al.* Exogenous 17-beta estradiol administration blunts progression of established angiotensin II-induced abdominal aortic aneurysms in female ovariectomized mice. Biol Sex Differ 2015;6(12
ALZET Comments: Angiotensin II; Mice; 1004; 3 months; Controls received mp w/ vehicle; animal info (Female low-density lipoprotein-receptor-deficient (Ldlr−/−) mice on a C57BL/6 background; 2–3 months of age); functionality of mp verified by ; long-term study; pumps replaced every 4 weeks; Dose (1000 ng/kg/min;);.

Q4028: S. Okizaki*, et al.* Suppressed recruitment of alternatively activated macrophages reduces TGF-beta1 and impairs wound healing in streptozotocin-induced diabetic mice. BIOMEDICINE & PHARMACOTHERAPY 2015;70(317-325
ALZET Comments: Transforming growth factor-B1; PBS; SC; Mice; 1007D; 7 days; Controls received mp w/ vehicle; animal info (male, C57Bl6, 8 weeks old, diabetes induced STZ); immunology; diabetes;.

Q5167: G. Nicolini*, et al.* Early and short-term triiodothyronine supplementation prevents adverse post-ischemic cardiac remodeling: role of transforming growth factor-beta1 and anti-fibrotic miRNA signaling. Mol Med 2015;
ALZET Comments: Triiodothyronine; Saline; SC; Rat; 2002; 3 days; Controls received mp w/ vehicle; animal info (male, Wistar, adult, 385+/- 9 g); functionality of mp verified by serum levels; cardiovascular; pumps removed after 3 days; Dose (6 ug/kg/day);.

Q3977: Y. C. Lim*, et al.* Proinsulin C-Peptide Prevents Impaired Wound Healing by Activating Angiogenesis in Diabetes. Journal of Investigative Dermatology 2015;135(269-278
ALZET Comments: C-peptide; PBS; SC; Mice; 2004; 2 weeks; Controls received sham surgery; animal info (male, C57BL6J, 6 weeks old, streptozotocin induced diabetes); cardiovascular; peptides; diabetes;.

Q3960: J. Y. Lee*, et al.* Simultaneous Inferior Alveolar Nerve Regeneration and Osseointegration With a Nerve Growth Factor-Supplying Implant: A Preliminary Study. Journal of Oral and Maxillofacial Surgery 2015;73(410-423
ALZET Comments: Nerve growth factor, human B-; PBS; CSF/CNS (inferior alveolar nerve); Dog (beagle); 2ML2; 6 weeks; Controls received mp w/ vehicle; animal info (male, beagle, 18 weeks old, 10-12 kg); good methods (picture of implant pg 413); Multiple pumps per animal (2; one pump delivered NGF other delivered PBS); used rat jugular catheter, 15 cm long; pump body placed into retromandibular area; long-term study;.

Q4329: J. C. Bihl*, et al.* Angiotensin-(1-7) counteracts the effects of Ang II on vascular smooth muscle cells, vascular remodeling and hemorrhagic stroke: Role of the NFkappaB inflammatory pathway. VASCULAR PHARMACOLOGY 2015;73(115-123
ALZET Comments: Angiotensin II; angiotensin (1-7); A-779; IP; Mice; 1004; 4 weeks; Controls received mp w/ vehicle; animal info (C57BL6, 8-10 weeks old, 25-32g); ischemia (cerebral); behavioral testing (gait, circling/climbing behavior, body

and front limb symmetry, compulsory circling); cardiovascular; peptides; bp measured using radiotelemetry (DSI); pumps primed for 48h at 37C sterile isotonic saline; used IP catheter; "Ang II and Ang-(1–7) infusions led to a significant increase in plasma Ang II andAng-(1–7) levels,which indicate the success of minipump infusions".

Q4295: A. Aguado*, et al.* HuR mediates the synergistic effects of angiotensin II and IL-1 on vascular COX-2 expression and cell migration. BRITISH JOURNAL OF PHARMACOLOGY 2015;172(3028-3042
ALZET Comments: Angiotensin II; Saline; SC; Mice; 2 weeks; Controls received mp w/ vehicle; animal info (male, C57BL6J); cardiovascular; peptides;.

Q4213: A. Yoshii*, et al.* Role of Uterine Contraction in Regeneration of the Murine Postpartum Endometrium. Biology of Reproduction 2014;91(U48-U57
ALZET Comments: Ritodrine hydrochloride; SC; Mice; Controls received mp w/ saline; animal info (female, ICR, 8-10 weeks old, pregnant, GD18-19, ovariectomy); cardiovascular; immunology; ritodrine is a B-2 adrenergic receptor agonist;.

Q4766: Mohan R Dasu*, et al.* Crosstalk Between Adrenergic and Toll-Like Receptors in Human Mesenchymal Stem Cells and Keratinocytes: A Recipe for Impaired Wound Healing. STEM CELLS TRANSLATIONAL MEDICINE 2014;3):745-759
ALZET Comments: epinephrine, macrophage-activating lipopeptide-2; ICI-118,551; SC; mice; 1002; 7 days; 11 days; animal info (Jax Mice, male, 8-10 weeks of age); peptides; macrophage-activating lipopeptide-2 aka MALP-2; Dose (7mg/kg body weight/day EPI; .7 mg/kg body weight/day ICI);.

Q3234: M. H. Kim*, et al.* Catecholamine Stress Alters Neutrophil Trafficking and Impairs Wound Healing by beta(2)-Adrenergic Receptor-Mediated Upregulation of IL-6. Journal of Investigative Dermatology 2014;134(3):809-817
ALZET Comments: Epinephrine; antagonist, beta adrenergic receptor; Saline; SC; Mice (transgenic); 1002; 8 days; Controls received mp w/ vehicle; animal info (female, EGFP-lys); functionality of mp verified by plasma levels; dose-response (pg. 810); immunology;.

Q3931: B. Johannesson*, et al.* Insulin-like growth factor-1 induces regulatory T cell-mediated suppression of allergic contact dermatitis in mice. Disease Models & Mechanisms 2014;7(977-985
ALZET Comments: Insulin-like growth factor-1, recombinant human; SC; Mice; 2004; Controls received sham surgery; animal info (C57BL6J, 8-10 weeks old); immunology; peptides;.

Q4784: David W. Baker*, et al.* Alternative strategies to manipulate fibrocyte involvement in the fibrotic tissue response: Pharmacokinetic inhibition and the feasibility of directed-adipogenic differentiation. Acta Biomaterialia 2014;10):
ALZET Comments: Adipogenic supplement; Basal medium; SC; Mice; 1002; 14 days; animal info (balb/c, 25g); Dose (0.25 ng/h);.

Q4819: M. R. DASU*, et al.* Crosstalk Between Adrenergic and Toll-Like Receptors in Human Mesenchymal Stem Cells and Keratinocytes: A Recipe for Impaired Wound Healing. STEM CELLS TRANSLATIONAL MEDICINE 2014;3):745-759
ALZET Comments: Epinephrine; macrophage-activating lipopeptide-2; ICI-118,551; SC; mice; 1002; 7 days; 11 days; animal info (Jax Mice, male, 8-10 weeks of age); peptides; macrophage-activating lipopeptide-2 aka MALP-2; Dose (7mg/kg body weight/day EPI; .7 mg/kg body weight/day ICI);.

Q3422: N. A. Bracey*, et al.* Mitochondrial NLRP3 Protein Induces Reactive Oxygen Species to Promote Smad Protein Signaling and Fibrosis Independent from the Inflammasome. Journal of Biological Chemistry 2014;289(19571-19584
ALZET Comments: Angiotensin II, recombinant human; SC; Mice; 28 days; Controls received mp w/ saline; animal info (male, C57BL6 or Nlrp3 +/+, 10-12 weeks old); cardiovascular; peptides; bp measured using tail-cuff;.

Q3040: Y. Q. Zuo*, et al.* Thymosin beta4 and its degradation product, Ac-SDKP, are novel reparative factors in renal fibrosis. Kidney International 2013;84(6):1166-1175
ALZET Comments: Ac-SDKP; Mice; 1007D; Animal info (wt, PAI-1 -/-, 8-10 wks old, 25-30 g).

Q3271: T. Zhuang*, et al.* Involvement of nitric oxide synthase in matrix metalloproteinase-9- and/or urokinase plasminogen activator receptor-mediated glioma cell migration. BMC CANCER 2013;13(;):U1-U11
ALZET Comments: Plasmid, MMP-9; plasmid, uPAR; plasmid, MMP-9-uPAR; Medium, serum free; CSF/CNS; Mice (nude); 5 weeks; Animal info (nude); cancer (glioma);.

Q3594: D. Panigrahy*, et al.* Epoxyeicosanoids promote organ and tissue regeneration. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2013;110(33):13528-13533
ALZET Comments: Epoxyeicosatrienoic acid, 14,15-; epoxyeicosatrienoic acid, 11,12-; IP; Mice; 4 days; Controls received mp w/ vehicle; animal info (male, Tie2-CYP2C8-Tr, Tie2-CYP2J2-Tr, sEH-null, 6 months old); replacement therapy (partial hepatectomy); tissue and organ regeneration.

Q4985: L. L. Nikitenko*, et al.* Adrenomedullin haploinsufficiency predisposes to secondary lymphedema. J Invest Dermatol 2013;133(7):1768-76
ALZET Comments: Adrenomedullin (AM); IP; mice; 1002; peptides; animal info: Adm-knockin stop mutation, heterozygotes; functionality of mp verified by edema score; Paper mentions osmotic minipumps being effective in the range 10^-8 to 10^-6 mol/l (pg. 1770). Adrenomedullin is a 52-amino-acid vasoactive peptide. mp were used to infuse AM to induce edema; dose: 300 ng/kg/hr.

Q4926: A. C. Engevik*, et al.* The acid-secreting parietal cell as an endocrine source of Sonic Hedgehog during gastric repair. Endocrinology 2013;154(12):4627-39
ALZET Comments: recombinant mouse Shh (Sonic Hedgehog); PBS; IP; mice; 1007D; male and female mice, PC-shhKo, C57BL/6, Parabiosis mice; mp were used to infuse Shh (Sonic Hedgehog). Shh is a fundamental protein mediating gastric ulcer healing. Paper is the first to examine effect of parietal cell sonic hedgehog on gastric healing; Shh 200 ng.

Q2477: S. R. Doctrow*, et al.* A Synthetic Superoxide Dismutase/Catalase Mimetic EUK-207 Mitigates Radiation Dermatitis and Promotes Wound Healing in Irradiated Rat Skin. Journal of Investigative Dermatology 2013;133(4):1088-1096
ALZET Comments: EUK-27, custom; Water, ultrapure; SC; Rat; 90 days; Control animals received mp w/ vehicle; animal info (syngenic, male, WAG/RijCmcr, 8 wks old); long-term study.

Q4771: R. F. Amy C. Engevik, Li Yang, and Yana Zavros. The Acid-Secreting Parietal Cell as an Endocrine Source of Sonic Hedgehog During Gastric Repair. Endocrinology 2013;154(12):4627-4639
ALZET Comments: recombinant mouse Shh (Sonic Hedgehog); PBS; IP; Mice; 1007D; male and female mice, PC-shhKo, C57BL/6, Parabiosis mice; dose: Shh 200 ng ; mp were used to infuse Shh (Sonic Hedgehog). Shh is a fundamental protein mediating gastric ulcer healing. Paper is the first to examine effect of parietal cell sonic hedgehog on gastric healing;.

Q2363: R. F. Oppeltz*, et al.* Gamma delta (gammadelta) T-cells are critical in the up-regulation of inducible nitric oxide synthase at the burn wound site. Cytokine 2012;60(2):528-534
ALZET Comments: L-Nil; PBS; SC; Mice; 2001; Animal info (C57BL/6, gamma TCR -/-, male, 8-10 wks old); enzyme inhibitor (nitric oxide synthase, iNOS).

Q2040: T. X. Li*, et al.* Preproendothelin-1 expression is negatively regulated by IFNgamma during hepatic stellate cell activation. American Journal of Physiology-Gastrointestinal and Liver Physiology 2012;302(9):G948-G957
ALZET Comments: Interferon, gamma; PBS; BSA; Rat; 1002; 2 weeks; Controls received mp w/ vehicle; animal info (Sprague Dawley).

Q0886: N. Yoshioka*, et al.* Small Molecule Inhibitor of Type I Transforming Growth Factor-beta Receptor Kinase Ameliorates the Inhibitory Milieu in Injured Brain and Promotes Regeneration of Nigrostriatal Dopaminergic Axons. Journal of Neuroscience Research 2011;89(3):381-393
ALZET Comments: LY-364947; DMSO; Mice; 2002; 2 weeks; Controls received mp w/ vehicle; animal info (2 mo old, ICR, male); enzyme inhibitor (TGF-b receptor kinase); 5% DMSO used.

Q1523: T. C. Wei*, et al.* Expression of Crip2, a LIM-domain-only protein, in the mouse cardiovascular system under physiological and pathological conditions. GENE EXPRESSION PATTERNS 2011;11(7):384-394
ALZET Comments: Isoproterenol; PBS; SC; Mice; 1007D; 7 days; Animal info (8-10 wks old, C57BL/6, male).

Q1697: L. Van Landeghem*, et al.* Enteric glia promote intestinal mucosal healing via activation of focal adhesion kinase and release of proEGF. American Journal of Physiology-Gastrointestinal and Liver Physiology 2011;300(6):G976-G987
ALZET Comments: Ganciclovir; SC; Mice; 7 days; Animal info (GFAP-HSVtk Tg, 22 wks old).

Q1477: H. Laeremans*, et al.* Blocking of Frizzled Signaling With a Homologous Peptide Fragment of Wnt3a/Wnt5a Reduces Infarct Expansion and Prevents the Development of Heart Failure After Myocardial Infarction. Circulation 2011;124(15):1626-U107
ALZET Comments: UM206; UM206 analog; SC; Mice; 2002; 2006; 2, 5 weeks; Controls received mp w/ saline; functionality of mp verified by plasma UM206 levels; animal info (male, Swiss, 10-12 wks old**)**.

Q2240: T. Kadar*, et al.* Delayed Loss of Corneal Epithelial Stem Cells in a Chemical Injury Model Associated with Limbal Stem Cell Deficiency in Rabbits. Current Eye Research 2011;36(12):1098-1107
ALZET Comments: Uridine, bromodeoxy; DMSO; water; SC; Rabbit; Animal info (New Zealand, White, female, 2-3 kg); labeling of slow cycling cells.

Q1500: P. Jain*, et al.* An NGF mimetic, MIM-D3, stimulates conjunctival cell glycoconjugate secretion and demonstrates therapeutic efficacy in a rat model of dry eye. Experimental Eye Research 2011;93(4):503-512
ALZET Comments: Scopolamine hydrobromide; SC; Rat; 2ML2; 2ML4; 14, 28 days; Controls did not receive any scopolamine; animal info (male, Sprague Dawley, 6-8 wks old).

Q0981: J. E. Bond*, et al.* Wound Contraction Is Attenuated by Fasudil Inhibition of Rho-Associated Kinase. PLASTIC AND RECONSTRUCTIVE SURGERY 2011;128(5):438E-450E
ALZET Comments: Fasudil; Saline; SC; Rat; 2ML4; Controls received mp w/ vehicle; animal info (8-10 wks old, Wistar Han, 200-225 g).

Q0676: M. S. Aagren*, et al.* Nonselective matrix metalloproteinase but not tumor necrosis factor-alpha inhibition effectively preserves the early critical colon anastomotic integrity. International Journal of Colorectal Disease 2011;26(3):329-337
ALZET Comments: GM6001; AG3340; DMSO; SC; Rat; 2ML1; Controls received mp w/ vehicle; animal info (male Sprague-Dawley, 205-360 g); enzyme inhibitor (matrix metalloproteinase, MMP); 50% DMSO used.

Q0478: S. Yamano*, et al.* Effects of nicotine on gene expression and osseointegration in rats. CLINICAL ORAL IMPLANTS RESEARCH 2010;21(12):1353-1359
ALZET Comments: Nicotine; Saline; SC; Rat; 2004; 8 weeks; Controls received mp w/vehicle; animal info (male, Sprague Dawley, 4-6 wks old); pumps replaced after 4 weeks; long-term study.

Q0089: K. K. Veeravalli*, et al.* MMP-9, uPAR and Cathepsin B Silencing Downregulate Integrins in Human Glioma Xenograft Cells In Vitro and In Vivo in Nude Mice. PLoS One 2010;5(7):U28-U42
ALZET Comments: Plasmid, MMP-9; uPAR; cathepsin B; CSF/CNS; Mice; Pump infused at a rate of 0.2 u/hr.

Q1029: V. de Waard*, et al.* Systemic MCP1/CCR2 blockade and leukocyte specific MCP1/CCR2 inhibition affect aortic aneurysm formation differently. Atherosclerosis 2010;211(1):84-89
ALZET Comments: Angiotensin II; SC; Mice; 4-5 weeks; Animal info (ApoE -/-); peptides.

Q0389: S. W. M. van den Borne*, et al.* Mouse strain determines the outcome of wound healing after myocardial infarction. Cardiovascular Research 2009;84(2):273-282
ALZET Comments: Metaprolol; hydralazine; SC; Mice; 1007D; 7 days; Controls were sham operated; animal info (male, 10-12 wks old, 129S6/SvEv); myocardial infarction by coronary artery ligation.

P9453: A. A. Thomay*, et al.* Disruption of Interleukin-1 Signaling Improves the Quality of Wound Healing. American Journal of Pathology 2009;174(6):2129-2136
ALZET Comments: Interleukin-1 receptor antagonist, recomb. human; interleukin-6 recomb. mouse; Sodium citrate; sodium chloride; EDTA; Tween 80; PBS; SC; wound site; Mice; 1003D; 2002; 3, 14 days; Controls received mp w/ vehicle; animal info (male, B6D2F1, 8-12 wks, 27-30 g., IL-1R KO); mp was fitted with a polypropylene mesh collar containing a PVA sponge; agent also known as Anakinra; deep tissue wounds; 0.1% Tween 80 used; 0.5 mM EDTA;.

P9588: R. K. Sivamani*, et al.* Stress-Mediated Increases in Systemic and Local Epinephrine Impair Skin Wound Healing: Potential New Indication for Beta Blockers. PLOS MEDICINE 2009;6(1):105-115
ALZET Comments: Salbutamol; ICI-118,551; SC; Mice; 2002; Controls received mp w/saline; animal info (FVB/NJ).

P9814: G. Santulli*, et al.* In vivo properties of the proangiogenic peptide QK. Journal of Translational Medicine 2009;7(;):U1-U10
ALZET Comments: Vascular endothelial growth factor-15; vascular endothelial growth factor-165; QK; IA (femoral); Rat; 2002; 14 days; Peptides; animal info (12 wks old, WKY, normosensitive); QK is a de novo engineered VEGF mimicking peptide.

R0276: J. P. Cooke*, et al.* Endothelial Nicotinic Acetylcholine Receptors and Angiogenesis. TRENDS IN CARDIOVASCULAR MEDICINE 2008;18(7):247-253
ALZET Comments: Mecamylamine; Mice; 2 weeks; REVIEW, see Kiuchi et a.

P8566: J. A. I. Virag*, et al.* Fibroblast growth factor-2 regulates myocardial infarct repair - Effects on cell proliferation, scar contraction, and ventricular function. American Journal of Pathology 2007;171(5):1431-1440
ALZET Comments: Uridine, bromodeoxy-; DMSO; water; SC; Mice (knockout); 1007D; 4 days; Cardiovascular; animal info (FGF2 knockout mice, 6-8 weeks old, 20-30 grams); 50% DMSO 50% water; labeling of endothelial cells.

P8735: K. Nishikawa*, et al.* Effect of dopamine on the healing of acetic acid-induced gastric ulcers in rats. INFLAMMOPHARMACOLOGY 2007;15(5):209-213
ALZET Comments: Dopamine; Saline; SC; Rat; 7 days; Controls received mp w/ vehicle; comparison of SC injections vs. mp; animal info (male, Sprague-Dawley, 230-260g, gastic ulceration).

P7842: R. X. Wu*, et al.* Fibroblast migration after myocardial infarction is regulated by transient SPARC expression. JOURNAL OF MOLECULAR MEDICINE-JMM 2006;84(3):241-252
ALZET Comments: EMD121974; DMSO; PBS; SC; Mice; 2001; 7 days; Controls received mp w/ vehicle; cardiovascular; ischemia (cardiac); animal info (male, female, C57BL/6, 22-25g., coronary artery ligation-induced MI); agent is a specific integrin a-v inhibitor; 50% DMSO; wound healing.

P8211: S. D. Luikart*, et al.* Mactinin treatment promotes wound-healing-associated inflammation in urokinase knockout mice. Wound Repair and Regeneration 2006;14(2):123-128
ALZET Comments: Mactinin; glutathione 5-transferase; Saline; SC; Rat; mice (transgenic); 1007D; 1, 7 days; Controls received mp w/ vehicle, or GST; peptides; animal info (Tgu PA-/- or wt; Fisher, 150-200g); Polyvinyl alcohol sponges soaked in agent implanted SC, with mp catheter directed to center of sponge: "osmotic pumps were used to continually deliver the fragment and replenish the mactinin in the sponges" (p.125); wound healing.

P7813: D. Heffernan*, et al.* Local arginine supplementation results in sustained wound nitric oxide production and reductions in vascular endothelial growth factor expression and granulation tissue formation. Journal of Surgical Research 2006;133(1):46-54
ALZET Comments: Arginine, L-; Saline; Wound site; Pig; 2ML2; 14 days; Controls received mp w/ vehicle; functionality of mp verified by residual volume; animal info (female, domestic, Landrace, 15-20kg., hernia defect); tubing was looped and contained multiple side holes to ensure uniform delivery within the aqueous wound compartment; ultrasonography.

P8096: A. Gosain*, et al.* Exogenous pro-angiogenic stimuli cannot prevent physiologic vessel regression. Journal of Surgical Research 2006;135(2):218-225
ALZET Comments: Vascular endothelial growth factor 164, recomb.; platelet-dreived growth factor; fibroblast growth factor-2; Wound site; Mice; 2002; 11 days; Controls received mp w/ PBS; functionality of mp verified by VEGF levels in wound sponges, residual volume; stability verified by activity of residual VEGF in endothelial cell cord formation assay (fig.4); cardiovascular; peptides; animal info (female, BALB/c, 8-9 wks old, implanted sponge wounds); "The activity of VEGF isolated from the pump was comparable to fresh recombinant VEGF 164, confriming that the recombinant growth factors present in the mini-osmotic pump retain robust biological activity." (p.221).

P6895: T. Poonawala*, et al.* Opioids heal ischemic wounds in the rat. Wound Repair and Regeneration 2005;13(2):165-174
ALZET Comments: Morphine; PBS; SC; Rat; 8 days; Controls received mp w/ vehicle; comparison of topical opioids and injections vs. mp; wound healing.

P7405: S. Fruchtman*, et al.* Suppressor of cytokine signaling-2 modulates the fibrogenic actions of GH and IGF-I in intestinal mesenchymal cells. American Journal of Physiology-Gastrointestinal and Liver Physiology 2005;289(2):G342-G350
ALZET Comments: Insulin-like growth factor I; growth hormone; Saline; SC; Mice (knockout); 5 days; Controls received mp w/ vehicle; peptides.

P6949: M. Fowler*, et al.* Assessment of pancreatic islet mass after islet transplantation using in vivo bioluminescence imaging. Transplantation 2005;79(7):768-776
ALZET Comments: Insulin, human; SC; Mice (SCID); 1002; 7,10 days; Diabetes; bioluminescence imaging (BLI); IVIS 200 system used after pumps were removed.

P7131: P. Brun*, et al.* Neuropeptide neurotensin stimulates intestinal wound healing following chronic intestinal inflammation. American Journal of Physiology-Gastrointestinal and Liver Physiology 2005;288(4):G621-G629
ALZET Comments: Neurotensin; PBS; BSA; SC; Mice; 2002; 5 days; Controls received mp w/ vehicle; peptides; wound healing.

P6855: S. Razani-Boroujerdi*, et al.* Chronic nicotine inhibits inflammation and promotes influenza infection. Cellular Immunology 2004;230(1):1-9
ALZET Comments: Nicotine; SC; Rat; mice; 2004; 23-28 days; Controls received mp w/ saline; influenza.

P5970: A. Deten*, et al.* Effect of propranolol on cardiac cytokine expression after myocardial infarction in rats. MOLECULAR AND CELLULAR BIOCHEMISTRY 2003;251(1-2):127-137
ALZET Comments: Propranolol; SC; Rat; 2ML4; 4 weeks; Cardiovascular.

Q6845: P. Koshy*, et al.* Effects of low-dose candesartan on the rate of re-endothelialisation following vascular wound healing. Journal of the Renin-Angiotensin-Aldosterone System 2001;2(581-583
ALZET Comments: Candesartan; IP; Rabbit; 1 week; Dose (50, 100, and 500 µg/kg/day); animal info (Male New Zealand White rabbits,weighing 3.0–3.5 kg,); Candesartan is an Ang II type 1 (AT1)-receptor blockers; cardiovascular;.

P4811: T. Kiyama*, et al.* Effect of matrix metalloproteinase inhibition on colonic anastomotic healing in rats. JOURNAL OF GASTROINTESTINAL SURGERY 2001;5(303-311
ALZET Comments: BE16627B; DMSO; ethylene glycol; SC; Rat; 1003D; 3 days; Controls received mp w/ vehicle; enzyme inhibitor; vehicle mix was 50:50 ratio; BE16627B is a matrix metalloproteinase inhibitor;.

P4781: D. T. Efron*, et al.* A novel method of studying wound healing. Journal of Surgical Research 2001;98(16-20
ALZET Comments: Methylisothiourea, S-; adenovirus vector; gene, mouse iNOS cDNA sequence; Saline; Dye, methlene blue; Dye, India black ink; PBS; SC (wound healing site);; Rat;; 2001; 2ML1;; 7 days;; Controls received mp w/ saline; functionality of mp verified by dye infusion; gene therapy; enzyme inhibitor; methylisothiourea,S- is an inducible nitric oxide synthase inhibitor (iNOS inhibitor); wound healing; SC-implanted pumps infused 2 hydroxyproline sponges via

catheter; initial studies used 2ML1 pumps to infuse dyes in order to assess the feasibility of direct infusion with pumps; iNOS inhibitor infusion was with 2001 pumps; pumps were designed to infuse directly into SC implanted polyvinyl sponges at the wound site; Adenovirus vector was dissolved in PBS; iNOS inhibitor was delivered in saline; diagram of pump-catheter assembly and location (p. 18); "Dye infusion demonstrated both grossly and microscopically excellent delivery of the infusate to wound sponges" (p. 18);.

P5800: E. Creemers*, et al.* Disruption of the plasminogen gene in mice abolishes wound healing after myocardial infarction. Am J Pathol 2000;156(6):1865-1873
ALZET Comments: Uridine, bromodeoxy-; Mice (knockout); 2001; 7 days; Wound healing.

P3924: S. Koshizuka*, et al.* The beneficial effects of recombinant human insulin-like growth factor-1 (IGF-I) on wound healing in severely wounded senescent mice. Jpn. J. Surg 1997;27(946-952
ALZET Comments: Insulin-like growth factor I; Saline, physiological; SC; mice; 1007D; 7 days; controls received mp w/ vehicle; no stress (see pg. 948); peptides; wound healing; recomb. human IGF-I used.

P3952: M. S. Bitar. Insulin-like growth factor-1 reverses diabetes-induced wound healing impairment in rats. Horm. Metab. Res 1997;29(383-386
ALZET Comments: Insulin-like growth factor I; PBS; SC; Rat; 14 days; controls received mp w/PBS; tissue perfusion (wound chamber); peptides; recomb. human IGF-I used.

P3442: M. R. Schaffer*, et al.* Nitric oxide regulates wound healing. J. Surg. Res 1996;63(237-240
ALZET Comments: MITU; IP; mice; 10 days; controls received mp w/ PBS; immunology; MITU is S-methyl isothiouronium, a competitive NO synthase inhibitor; wound healing.

P4247: M. A. Hollyoak*, et al.* Beneficial wound healing and metabolic effects of clenbuterol in burned and nonburned rats. J. Burn Care Rehabil 1995;16(233-240
ALZET Comments: Clenbuterol; Saline; SC; Rat; 2ML2; 2ML4; 2,3 weeks; controls received mp w/saline; wound healing study.

P2555: R. V. Mueller*, et al.* The effect of insulinlike growth factor I on wound healing variables and macrophages in rats. Arch Surg 1994;129(262-265
ALZET Comments: Insulin-like growth factor I; PBS; Rat; 2002; 11 days; controls received sham operation and/or mp w/ vehicle; tissue perfusion (wound healing chamber); replacement therapy (hypophysectomy); peptides; wound healing; recomb. human IGF-1 used.

P2050: D. Y. Suh*, et al.* Insulin-like growth factor-I reverses the impairment of wound healing induced by corticosteroids in rats. Endocrinology 1992;131(5):2399-2403
ALZET Comments: Insulin-like growth factor I; PBS; wound site; Rat; 7,14 days; tissue perfusion (wound healing site); peptides; pump connected to wound healing chamber by means of a catheter; recomb. human IGF-1 used.

P0846: A. Barbul*, et al.* Interleukin 2 enhances wound healing in rats. J. Surg. Res 1986;40(315-319
ALZET Comments: Interleukin-2; IP; Rat; 2ML1; 7 days; controls received mp w/vehicle; wound healing; functionality of mp verified upon removal; peptides; recomb. human IL-2 used.