

References on the Long-Term Administration of Agents in Mice Using the ALZET® Osmotic Pumps

- Q2934 Thomas CM, Yong QC, Seqqat R, Chandel N, Feldman DL, Baker KM et al. Direct renin inhibition prevents cardiac dysfunction in a diabetic mouse model: comparison with an angiotensin receptor antagonist and angiotensin-converting enzyme inhibitor. *Clin Sci* 2013; 124(7-8):529-541. >>> Insulin; aliskiren (renin inhibitor); benazeprilat (ACEi); valsartan (ARB); streptozotocin; Saline; SC; Mice; 1004; 10 weeks; Controls received mp w/vehicle, or (0.1M sodium citrate buffer (pH 4.5)); cardiovascular; animal info (male, C57b16/J, 12 weeks, blood glucose > 250 mg/dl); pumps replaced every 4 weeks; enzyme inhibitor (renin); long-term study; diabetes.
- Q2899 Broering TJ, Wang HY, Boatright NK, Wang Y, Baptista K, Shayan G et al. Identification of Human Monoclonal Antibodies Specific for Human SOD1 Recognizing Distinct Epitopes and Forms of SOD1. *PLoS One* 2013; 8(4):U413-U425. >>> Antibody, monoclonal, human; CSF/CNS; Mice; 2006; 50 days; Animal info (>20g, 65-115 days old); functionality of mp verified by measuring residual volume; measurement of tissue and serum HuMabs levels; pumps replaced every 50 days; good methods; long-term study.
- Q2883 Yong QC, Thomas CM, Seqqat R, Chandel N, Baker KM, Kumar R. Angiotensin type 1a receptor-deficient mice develop diabetes-induced cardiac dysfunction, which is prevented by renin-angiotensin system inhibitors. *Cardiovascular Diabetology* 2013; 12(4):U1-U13. >>> Aliskiren; benazeprilat; valsartan; PD123319; Saline; SC; Mice; 1004; 10 weeks; Cardiovascular; peptides; animal info (12 wks old, male, AT-KO); functionality of mp verified by echocardiography; pumps replaced every 4 weeks; enzyme inhibitor (renin); long-term study.
- Q2867 Jin HM, Zhou DC, Gu HF, Qiao QY, Fu SK, Liu XL et al. Antioxidant N-Acetylcysteine Protects Pancreatic beta-Cells Against Aldosterone-Induced Oxidative Stress and Apoptosis in Female db/db Mice and Insulin-Producing MIN6 Cells. *Endocrinology* 2013; 154(11):4068-4077. >>> Aldosterone; SC; Mice; 2ML4; 56 days; Animal info (C57BLKS/J, db/db, female, 8 wks old); long-term study; diabetes.
- Q2795 McGraw AP, Bagley J, Chen WS, Galayda C, Nickerson H, Armani A et al. Aldosterone Increases Early Atherosclerosis and Promotes Plaque Inflammation Through a Placental Growth Factor-Dependent Mechanism. *JOURNAL OF THE AMERICAN HEART ASSOCIATION* 2013; 2(1):U658-U670. >>> Aldosterone; Saline; ethanol; Mice; 1004; 8 weeks; Control animals received mp w/ vehicle; animal info (ApoE -/-, PIGF +/-, ApoE -/-, PIGF -/-, 9 wks old); post op care (buprenorphine); pumps replaced after 4 weeks; long-term study.
- Q2767 Schroeter MR, Leifheit-Nestler M, Hubert A, Schumann B, Glueckermann R, Eschholz N et al. Leptin promotes neointima formation and smooth muscle cell proliferation via NADPH oxidase activation and signalling in caveolin-rich microdomains. *Cardiovasc Res* 2013; 99(3):555-565. >>> Leptin, recomb. murine; SC; Mice; 8 week; Control animals received mp w/ saline; animal info (male, apoE -/-, LDL-R -/-; cav-1 -/-, 10 wks old); long-term study; pumps replaced after 4 weeks.
- Q2684 Chen WF, Gao QG, Dai ZJ, Kung AWC, Guo DA, Wong MS. Estrogenic effects of ginsenoside Rg1 in endometrial cells in vitro were not observed in immature CD-1 mice or ovariectomized mice model. *MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY* 2012; 19(9):1052-1061. >>> Estradiol; SC; Mice; 3 months; Control animals received mp w/ vehicle; animal info (C57BL/6J, female, OVX, 5 mo old); long-term study; replacement therapy (ovariectomy).
- Q2675 Secco M, Bueno CJ, Vieira NM, Almeida C, Pelatti M, Zucconi E et al. Systemic Delivery of Human Mesenchymal Stromal Cells Combined with IGF-1 Enhances Muscle Functional Recovery in LAMA2 (dy/2j) Dystrophic Mice. *Stem Cell Reviews and Reports* 2013; 9(1):93-109. >>> Insulin-like growth factor-1, R3, long; Acetic acid; SC; Mice; 1002; 8 weeks; Control animals received mp w/ vehicle; animal info (1 mo old, B6.WK-Lama2 dy/2J); long-term study; pumps replaced every 2 weeks.
- Q2652 Ghoshal S, Loftin CD. Cyclooxygenase-2 Inhibition Attenuates Abdominal Aortic Aneurysm Progression in Hyperlipidemic Mice. *PLoS One* 2012; 7(11):U19-U28. >>> Angiotensin II; SC; Mice; 2004; 2006; 6, 8 weeks; Animal info (ApoE -/-, 14-16 wks old, 3.5 mo old); peptides; pumps replaced after 4 weeks; long-term study.
- Q2616 Yen TH, Yang HY, Yeh YH, Chu PH, Wen CJ, Fu JF et al. Aliskiren attenuates proteinuria in mice with lupus nephritis by a blood pressure-independent mechanism. *LUPUS* 2013; 22(2):180-189. >>> Aliskiren; PBS; Mice; 4, 8 weeks; Control animals received mp w/ vehicle; animal info (MRL/lpr, 6 wks old, female); pumps replaced every 28 days; long-term study; enzyme inhibitor (renin).

Q2564 Mo W, Chen J, Patel A, Zhang L, Chau V, Li YJ et al. CXCR4/CXCL12 Mediate Autocrine Cell-Cycle Progression in NF1-Associated Malignant Peripheral Nerve Sheath Tumors. *Cell* 2013; 152(5):1077-1090. >>> AMD 3100; SC; Mice (nude); 2 months; Control animals received mp w/ saline; animal info (nu/nu, athymic, female, 16 wks old); long-term study.

Q2441 Xie XJ, Lu H, Moorleghen JJ, Howatt DA, Rateri DL, Cassis LA et al. Doxycycline Does Not Influence Established Abdominal Aortic Aneurysms in Angiotensin II-Infused Mice. *PLoS One* 2012; 7(9):U1003-U1008. >>> Angiotensin II; SC; Mice; 2004; 56 days; Animal info (male, LDL -/-); peptides; pumps replaced after 28 days; long-term study.

Q2409 vom Berg J, Prokop S, Miller KR, Obst J, Kaelin RE, Lopategui-Cabezas I et al. Inhibition of IL-12/IL-23 signaling reduces Alzheimer's disease-like pathology and cognitive decline. *Nature Medicine* 2012; 18(12):1812-U229. >>> Antibody, P40; antibody, 2A3; CSF/CNS; Mice; 60 days; Animal info (APPPS1); long-term study; pumps replaced after 4 weeks; neurodegenerative (Alzheimer's disease).

Q2289 Kumar D, Plagov A, Yadav I, Torri DD, Sayeneni S, Sagar A et al. Inhibition of renin activity slows down the progression of HIV-associated nephropathy. *American Journal of Physiology-Renal Physiology* 2012; 303(5):F711-F720. >>> Aliskiren; SC; Mice; 2004; 6, 8 weeks; Controls received mp w/ saline; animal info (FVB/N, Tg26, 6 wks old); long-term study; enzyme inhibitor (renin).

Q2286 Wang XF, Ye H, Ward CJ, Chu JYS, Masyuk TV, LaRusso NF et al. Insignificant effect of secretin in rodent models of polycystic kidney and liver disease. *American Journal of Physiology-Renal Physiology* 2012; 303(7):F1089-F1098. >>> Vasopressin, 1-deamino-8-D arginine; secretin; SC; Rat; mice; 1004; 2002; 2ML4; 7, 12 weeks; Controls received mp w/ vehicle; animal info (3 wks old, PKD2 -/WS25); pumps replaced every 2 weeks, every 4 weeks, or after 2 and 5 weeks; functionality of mp verified via plasma secretin levels; long-term study.

Q2251 Tian Z, Miyata K, Tabata M, Yano M, Tazume H, Aoi J et al. Nifedipine increases energy expenditure by increasing PGC-1alpha expression in skeletal muscle. *HYPERTENSION RESEARCH* 2011; 34(11):1221-1227. >>> Nifedipine; PEG 400; ethanol; water; SC; Mice; 2002; 4 months; Controls received mp w/ vehicle; animal info (male, eNOS KO); 15% PEG 400 used; 15% ethanol used; long-term study.

Q2214 Raufman JP, Shant J, Xie G, Cheng K, Gao XM, Shiu B et al. Muscarinic receptor subtype-3 gene ablation and scopolamine butylbromide treatment attenuate small intestinal neoplasia in *Apc(min/+)* mice. *Carcinogenesis* 2011; 32(9):1396-1402. >>> Scopolamine butylbromide; PBS; SC; Mice; 2004; 8 weeks; Controls received mp w/ vehicle; animal info (6 wks old, male, APC min/+); long-term study; pumps replaced after 4 weeks; post op. care (betadine).

Q2123 Azibani F, Benard L, Schlossarek S, Merval R, Tournoux F, Fazal L et al. Aldosterone Inhibits Antifibrotic Factors in Mouse Hypertensive Heart. *Hypertension* 2012; 59(6):1179-U264. >>> Angiotensin II; SC; Mice; 2004; 2 months; Animal info (aldosterone synthase tg, wt); long-term study; peptides.

Q2109 Westwell-Roper C, Dai DL, Soukhatcheva G, Potter KJ, van Rooijen N, Ehses JA et al. IL-1 Blockade Attenuates Islet Amyloid Polypeptide-Induced Proinflammatory Cytokine Release and Pancreatic Islet Graft Dysfunction. *J Immunol* 2011; 187(5):2755-2765. >>> Anakinra; Mice; 8 weeks; Controls received mp w/ saline; animal info (11 wks old, NOD/SCID); pumps replaced every 2 weeks; long-term study; immunology.

Q2019 Li YZ, Chigurupati S, Holloway HW, Mughal M, Tweedie D, Bruestle DA et al. Exendin-4 Ameliorates Motor Neuron Degeneration in Cellular and Animal Models of Amyotrophic Lateral Sclerosis. *PLoS One* 2012; 7(2):U436-U448. >>> Exendin-4; Saline; SC; Mice; 1004; 12 weeks; Controls received mp w/ vehicle; animal info (SOD1, G93A, 6 wks old); pumps replaced every 3 weeks; long-term study.

Q1998 Peng J, Liang G, Inan S, Wu Z, Joseph DJ, Meng QC et al. Dantrolene ameliorates cognitive decline and neuropathology in Alzheimer triple transgenic mice. *Neuroscience Letters* 2012; 516(2):274-279. >>> Dantrolene; DMSO; PBS; CSF/CNS; Mice; 1004; 90 days; Controls received mp w/ vehicle; animal info (3xTg-AD, 2 mo old); 25% DMSO used; pumps replaced after 1 month; long-term study; adverse effects, significant mortality in drug and vehicle group "when they underwent surgery for the Alzet pump replacement, primarily during the anesthetic induction. Excess mortality in this transgenic animal has been documented before..." pg 278; neurodegenerative (Alzheimer's disease).

Q1983 Yuan Y, Kasar S, Underbayev C, Vollenweider D, Salerno E, Kotenko SV et al. Role of microRNA-15a in autoantibody production in interferon-augmented murine model of lupus. *MOLECULAR IMMUNOLOGY* 2012; 52

(2):61-70. >>> Interferon, alpha; interferon, gamma; PBS; BSA; SC; Mice; 2006; 16 weeks; Animal info (13 wks old, female, B/W); pumps replaced after 8 weeks; long-term study; stability verified after 8 weeks; "residue IFNs from the pumps at the end of treatment were tested on IFN and IFN responsive cell lines and demonstrated that the in vivo conditions in the pump did not affect bioactivity of both IFNs (data not shown)" pg 63.

Q1976 Lei B, Nakano D, Fan YY, Kitada K, Hitomi H, Kobori H et al. Add-On Aliskiren Elicits Stronger Renoprotection Than High-Dose Valsartan in Type 2 Diabetic KKAY Mice That Do Not Respond to Low-Dose Valsartan. JOURNAL OF PHARMACOLOGICAL SCIENCES 2012; 119(2):131-138. >>> Aliskiren; SC; Mice; 1002; 1004; 10 weeks; Controls received mp w/ vehicle; animal info (type 2 diabetic KKAY, C57BL/6J, 12 wks old, male); pumps replaced at weeks 4 and 8; long-term study; enzyme inhibitor (renin).

Q1945 Quante M, Tu SP, Tomita H, Gonda T, Wang SSW, Takashi S et al. Bone Marrow-Derived Myofibroblasts Contribute to the Mesenchymal Stem Cell Niche and Promote Tumor Growth. CANCER CELL 2011; 19(2):257-272. >>> AMD 3100; PBS, sterile; SC; Mice; 2004; 4 months; Controls received mp w/ vehicle; animal info (alpha-SMA-RFP, 16 mo old, fells-infected); long-term study; pumps replaced every 4 weeks.

Q1878 Madsen LW, Knauf JA, Gottfredsen C, Pilling A, Sjoegren I, Andersen S et al. GLP-1 Receptor Agonists and the Thyroid: C-Cell Effects in Mice Are Mediated via the GLP-1 Receptor and not Associated with RET Activation. Endocrinology 2012; 153(3):1538-1547. >>> Exenatide; PBS; SC; Mice; 2006; 13 weeks; Controls received mp w/ vehicle; animal info (CD-1, 5-6 wks old; GLP-1R KO, 4-5 wks old); pumps replaced after 7 weeks; long-term study.

Q1783 Chen JC, Chen JK, Nagai K, Plieth D, Tan MQ, Lee TC et al. EGFR Signaling Promotes TGF-beta-Dependent Renal Fibrosis. J Am Soc Nephrol 2012; 23(2):215-224. >>> Angiotensin II; SC; Mice; 2, 3 months; Controls received mp w/ saline; animal info (9 wks old, FVB/NJ, nephrectomized); peptides; long-term study.

Q1718 Tomas E, Wood JA, Stanojevic V, Habener JF. GLP-1-derived nonapeptide GLP-1(28-36)amide inhibits weight gain and attenuates diabetes and hepatic steatosis in diet-induced obese mice. REGULATORY PEPTIDES 2011; 169(1-3):43-48. >>> Glucagon-like peptide-1 (28-36); Saline; albumin, human serum; acetic acid; SC; Mice; 1004; 4, 8 weeks; Controls received mp w/ vehicle; animal info (C57BL/6, male, 10-17 wks old); peptides; pumps replaced after 4 weeks; long-term study.

Q1650 Panigrahy D, Edin ML, Lee CR, Huang S, Bielenberg DR, Butterfield CE et al. Epoxyeicosanoids stimulate multiorgan metastasis and tumor dormancy escape in mice. J Clin Invest 2012; 122(1):178-191. >>> Epoxyeicosatrienoic acid; IP; Mice; 4 months; Controls received mp w/ vehicle; animal info (C57BL/6, 4-6 wks old, transgenic); pumps replaced every month; pumps replaced after two weeks; long-term study.

Q1644 Leidel F, Eiden M, Geissen M, Kretschmar HA, Giese A, Hirschberger T et al. Diphenylpyrazole-Derived Compounds Increase Survival Time of Mice after Prion Infection. Antimicrob Agents Chemother 2011; 55(10):4774-4781. >>> Diphenylpyrazole, 3, 5-; DMSO; IP; Mice; 2004; 8 weeks; Controls received mp w/ vehicle; animal info (C57BL/6 wt, transgenic Tga20); long-term study; pumps replaced after 4 weeks; IP catheter used; 70% DMSO used; 3, 5-diphenylpyrazole also known as DPP; "This drug delivery schedule allowed a continuous and undisturbed administration of the test agents without the need for perpetual injections." pg 4776.

Q1518 Morris SJ, Gao T, Cooper TK, Kepka-Lenhart D, Awad AS. Arginase-2 Mediates Diabetic Renal Injury. Diabetes 2011; 60(11):3015-3022. >>> Cysteine, S-(2-Boronoethyl)-L-; PBS; SC; Mice; 6, 9 weeks; Controls received mp w/ vehicle; animal info (Ins2Akita, wt, 9 wks old, STZ-induced diabetes); enzyme inhibitor (arginase); S-(2-Boronoethyl)-L-cysteine also known as BEC; long-term study.

Q1506 Sukhanov S, Higashi Y, Shai SY, Blackstock C, Galvez S, Vaughn C et al. Differential requirement for nitric oxide in IGF-1-induced anti-apoptotic, anti-oxidant and anti-atherosclerotic effects. FEBS Lett 2011; 585(19):3065-3072. >>> Insulin-like growth factor-1, recomb. human; Mice; 4, 8, 12 weeks; Controls received mp w/ saline; animal info (ApoE -/-, C57BL/6, 8 wks old); long-term study.

Q1428 Zhu SG, Kukreja RC, Das A, Chen Q, Lesnefsky EJ, Xi L. Dietary Nitrate Supplementation Protects Against Doxorubicin-Induced Cardiomyopathy by Improving Mitochondrial Function. J Am Coll Cardiol 2011; 57(21):2181-2189. >>> Sodium nitrate; SC; Mice; 1002; 13 days; Animal info (adult, male, CF-1); comparison of oral administration (drinking water) vs mp; "The long-term subcutaneous infusion of nitrate failed to significantly improve DOX induced LV dysfunction..., despite the comparable plasma nitrate levels between the oral and subcutaneous routes of administration" pg 2188.

Q1340 Shibata MA, Iinuma M, Morimoto J, Kurose H, Akamatsu K, Okuno Y et al. alpha-Mangostin extracted

from the pericarp of the mangosteen (*Garcinia mangostana* Linn) reduces tumor growth and lymph node metastasis in an immunocompetent xenograft model of metastatic mammary cancer carrying a p53 mutation. *BMC Medicine* 2011; 9(1):U1-U18. >>> Mangostin, alpha-; DMSO; ethanol; SC; Mice; 2002; 6 weeks; Animal info (Balb/c, syngenic, metastatic BJMC3879luc2); long-term study; peptides; pumps replaced every other week; cancer (breast).

Q1308 Saloniemi T, Jaervensivu P, Koskimies P, Jokela H, Lamminen T, Ghaem-Maghani S et al. Novel Hydroxysteroid (17 beta) Dehydrogenase 1 Inhibitors Reverse Estrogen-Induced Endometrial Hyperplasia in Transgenic Mice. *Am J Pathol* 2010; 176(3):1443-1451. >>> HSD17B1; SC; Mice; 2004; 6 weeks; Animal info (adult, TG, male); long-term study; pumps replaced after 3 weeks; post op. care (buprenorphine); HSD17B1 also known as Hydroxysteroid (17beta) dehydrogenase 1.

Q1205 Li YZ, Duffy KB, Ottinger MA, Ray B, Bailey JA, Holloway HW et al. GLP-1 Receptor Stimulation Reduces Amyloid-beta Peptide Accumulation and Cytotoxicity in Cellular and Animal Models of Alzheimer's Disease. *JOURNAL OF ALZHEIMERS DISEASE* 2010; 19(4):1205-1219. >>> Exendin-4; Saline; SC; Mice; 1004; 16 weeks; Controls received mp w/ vehicle; long-term study; animal info (3xTgAD, male, female, 11-12.5 mo old); pumps replaced every 4 weeks; neurodegenerative (Alzheimer's Disease).

Q1183 Kroeller-Schoen S, Schulz E, Wenzel P, Kleschyov AL, Hortmann M, Torzewski M et al. Differential effects of heart rate reduction with ivabradine in two models of endothelial dysfunction and oxidative stress. *Basic Res Cardiol* 2011; 106(6):1147-1158. >>> Angiotensin II; ivabradine; isoproterenol; DMSO; SC; Rat; mice; 2001; 14 weeks; 7, 10 days; Controls received mp w/ vehicle; animal info (male, Wistar, ApoE-/-); long-term study; peptides; multiple pumps per animal (2); blood pressure measured via telemetry (PA-C40, DSI).

Q1142 Jacob A, Hack B, Bai T, Brorson JR, Quigg RJ, Alexander JJ. Inhibition of C5a receptor alleviates experimental CNS lupus. *J Neuroimmunol* 2010; 221(1-2):46-52. >>> Peptide, C5a receptor antagonist; DMSO; SC; Mice; 2001; 6 weeks; Controls received mp w/ vehicle; animal info (MRL/lpr, male); long-term study; C5aRant is a hexapeptide antagonist of C5aR; 50% DMSO used.

Q1127 Huang NK, Lin JH, Lin JT, Lin CI, Liu EMW, Lin CJ et al. A New Drug Design Targeting the Adenosinergic System for Huntington's Disease. *PLoS One* 2011; 6(6):U56-U68. >>> T1-11; DMSO; SC; Mice; 48 hours; 6 weeks; Controls received mp w/ vehicle; animal info (C57BL/6, A2AR KO, 7-99 wks old); long-term study; T1-11 also known as N6-(4-hydroxybenzyl)adenine riboside; 1% DMSO used.

Q1123 Hourez R, Servais L, Orduz D, Gall D, Millard I, d'Exaerde AD et al. Aminopyridines Correct Early Dysfunction and Delay Neurodegeneration in a Mouse Model of Spinocerebellar Ataxia Type 1. *J Neurosci* 2011; 31(33):11795-11807. >>> Pyridine, 3,4-diamino; SC; Mice; 2004; 14 weeks; Controls received mp w/ NaCl; animal info (SCA1 Tg, wt, 5 wks old); long-term study; pumps replaced every 30 days; long-term study.

Q1094 Greco SJ, Bryan KJ, Sarkar S, Zhu XW, Smith MA, Ashford JW et al. Leptin Reduces Pathology and Improves Memory in a Transgenic Mouse Model of Alzheimer's Disease. *JOURNAL OF ALZHEIMERS DISEASE* 2010; 19(4):1155-1167. >>> Leptin, recomb. murine; PBS; SC; Mice; 2004; 8 weeks; Controls received mp w/ vehicle; animal info (CRND8, 4 mo old); pumps replaced after 4 weeks; long-term study.

Q1077 Gan L, Jiang W, Xiao YF, Deng L, Gu LD, Guo ZY et al. Disruption of CD38 gene enhances cardiac functions by elevating serum testosterone in the male null mice. *LIFE SCIENCES* 2011; 89(13-14):491-497. >>> Flutamide; PEG 300; SC; Mice; 2002; 6 weeks; Animal info (male, null, CD38 -/-); long-term study.

Q1039 Dong YF, Liu L, Lai ZF, Yamamoto E, Kataoka K, Nakamura T et al. Aliskiren enhances protective effects of valsartan against type 2 diabetic nephropathy in mice. *J Hypertens* 2010; 28(7):1554-1565. >>> Aliskiren; valsartan; SC; Mice; 6 weeks; Controls received mp w/ vehicle; animal info (6 wks old, Balb/C, db/db); long-term study; enzyme inhibitor (renin).

Q0889 Mihout F, Shweke N, Bige N, Jouanneau C, Dussaule JC, Ronco P et al. Asymmetric dimethylarginine (ADMA) induces chronic kidney disease through a mechanism involving collagen and TGF-beta 1 synthesis. *J Pathol* 2011; 223(1):37-45. >>> L-NAME; dimethylarginine, asymmetric; SC; Mice; 8 weeks; Controls received mp w/ iso-osmotic saline serum; animal info (23 g, male, SV129, 8 wks old, uninephrectomized); long-term study; enzyme inhibitor (nitric oxide synthase, NOS).

Q0861 Chang WP, Huang XP, Downs D, Cirrito JR, Koelsch G, Holtzman DM et al. beta-Secretase inhibitor GRL-8234 rescues age-related cognitive decline in APP transgenic mice. *FASEB J* 2011; 25(2):775-784. >>> GRL-8234; PEG 300; glucose; SC; Mice; 1002; 5-7.5 months; Controls received mp w/ vehicle; animal info (Tg2576); long-term

study; pumps replaced after 21 days; enzyme inhibitor (beta-secretase); neurodegenerative (Alzheimer's disease).

Q0818 Kawamura M, Itoh H, Yura S, Mogami H, Fujii T, Kanayama N et al. Angiotensin II Receptor Blocker Candesartan Cilexetil, but Not Hydralazine Hydrochloride, Protects Against Mouse Cardiac Enlargement Resulting From Undernutrition In Utero. *REPRODUCTIVE SCIENCES* 2009; 16(10):1005-1012. >>> Hydralazine hydrochloride; candesartan cilexetil; Water, distilled; sodium carbonate; SC; Mice; 2004; 8 weeks; Controls received mp w/ vehicle; animal info (9-17 wks old, normally nourished); long-term study; pumps replaced after 4 weeks; Figure 3b, image of pump implantation location.

Q0799 Cabaton NJ, Wadia PR, Rubin BS, Zalko D, Schaeberle CM, Askenase MH et al. Perinatal Exposure to Environmentally Relevant Levels of Bisphenol A Decreases Fertility and Fecundity in CD-1 Mice. *Environ Health Perspect* 2011; 119(4):547-552. >>> Bisphenol A; DMSO; water; SC; Mice; 1004; 8 weeks; Controls received mp w/ vehicle, positive controls received mp w/ diethylstilbestrol; animal info (CD-1, female, GD8); dose-response (pg 549); 50% DMSO used; long-term study.

Q0758 Kiwamoto T, Ishii Y, Morishima Y, Yoh K, Kikuchi N, Haraguchi N et al. Blockade of cysteinyl leukotriene-1 receptors suppresses airway remodelling in mice overexpressing GATA-3. *Clin Exp Allergy* 2011; 41(1):116-128. >>> Montelukast; Mice (transgenic); 2004; 8 weeks; Controls received mp w/ vehicle; animal info (GATA-3-tg, wild-type Balb/c, 6-8 wks old); long-term study.

Q0715 Shibata MA, Morimoto J, Shibata E, Kurose H, Akamatsu K, Li ZL et al. Raloxifene inhibits tumor growth and lymph node metastasis in a xenograft model of metastatic mammary cancer. *BMC CANCER* 2010; 10(1):U1-U14. >>> Raloxifene; DMSO; ethanol; SC; Mice; 2002; 6 weeks; Animal info (female, 6 wks old, BALB/c); long-term study; pumps replaced every other week; cancer (metastatic breast cancer); stress/adverse reaction: "one animal died from an overdose of anesthesia when the osmotic mini-pumps were changed" (see pg. 7 of 14); raloxifene is a novel selective estrogen receptor modulator; chemotherapeutic.

Q0598 Ittner LM, Ke YD, Delerue F, Bi MA, Gladbach A, van Eersel J et al. Dendritic Function of Tau Mediates Amyloid-beta Toxicity in Alzheimer's Disease Mouse Models. *Cell* 2010; 142(3):387-397. >>> TAT-NR2B9c; CSF, artificial; CSF/CNS; Mice; 1004; 56 days; Negative controls received mp w/ Tat-NR2BAA; animal info (6 wks old, APP23, WT); long-term study; pumps replaced after 28 days; ALZET brain infusion kit 3 (with one spacer) used; peptides; neurodegenerative (Alzheimer's Disease).

Q0483 Osako MK, Nakagami H, Koibuchi N, Shimizu H, Nakagami F, Koriyama H et al. Estrogen Inhibits Vascular Calcification via Vascular RANKL System Common Mechanism of Osteoporosis and Vascular Calcification. *Circ Res* 2010; 107(4):466-U57. >>> Estradiol, 17b-; Propylene glycol; Mice; 1004; 3 months; Controls received mp w/saline; animal info (female, ApoE -/-, ovariectomy); long-term study; replacement therapy (ovariectomy).

Q0477 Li JH, Qu XL, Yao J, Caruana G, Ricardo SD, Yamamoto Y et al. Blockade of Endothelial-Mesenchymal Transition by a Smad3 Inhibitor Delays the Early Development of Streptozotocin-Induced Diabetic Nephropathy. *Diabetes* 2010; 59(10):2612-2624. >>> SIS3; advanced glycation end products; Albumin, mouse serum; SC; Mice; 1 month; 8 weeks; Controls received mp w/ vehicle; animal info (male, Tie2-Cre;Loxp-EGFP, C57BL/6J, 20-25g, STZ induced diabetes); long-term study; SIS3 is a specific Smad3 inhibitor.

Q0428 Hathorn T, Snyder-Keller A, Messer A. Nicotinamide improves motor deficits and upregulates PGC-1alpha and BDNF gene expression in a mouse model of Huntington's disease. *NEUROBIOLOGY OF DISEASE* 2011; 41(1):43-50. >>> Nicotinamide; SC; Mice; 2004; 10 weeks; Controls received mp w/saline; animal info (male, female, B6.HDR6/1, 8 wks old); pumps replaced after 5 weeks; long-term study; neurodegenerative (Huntington's disease); behavioral testing (open field testing, rotarod performance, balance beam).

Q00373 Tanifuji C, Suzuki Y, Geot WM, Horikoshi S, Takahashi H, Tomino Y. Beneficial Effects of Combination Therapy with Olmesartan and Azelnidipine in Murine Polycystic Kidneys. *KIDNEY & BLOOD PRESSURE RESEARCH* 2009; 32(4):239-249. >>> Olmesartan; azelnidipine; Mice; 2004; 4, 8 weeks; Animal info (pcy, 6 wks old); long-term study; pumps replaced after 4 weeks.

Q00345 Marino G, Ugalde AP, Fernandez AF, Osorio FG, Fueyo A, Freije JMP et al. Insulin-like growth factor 1 treatment extends longevity in a mouse model of human premature aging by restoring somatotroph axis function. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA* 2010; 107(37):16268-16273. >>> Insulin-like growth factor-1, human, recomb.; HCl; saline, isotonic, sterile; SC; Mice; 1004; 56 days; Animal info (transgenic, Zmpste24 metalloproteinase deficient); long-term study; pumps

replaced after 28 days.

Q00302 Nagashima M, Watanabe T, Shiraishi Y, Morita R, Terasaki M, Arita S et al. Chronic infusion of salusin-alpha and beta exerts opposite effects on atherosclerotic lesion development in apolipoprotein E-deficient mice. *Atherosclerosis* 2010; 212(1):70-77. >>> Salusin-alpha; salusin-beta; anti-salusin-alpha antiserum; anti-salusin-beta antiserum; Saline; SC; Mice; 4, 8 weeks; Controls received mp w/ vehicle; animal info (13 wks old, male, ApoE-/-); long-term study; pumps replaced every week; peptides.

Q00292 Stucchi P, Cano V, Ruiz-Gayo M, Fernandez-Alfonso MS. Aliskiren reduces body-weight gain, adiposity and plasma leptin during diet-induced obesity. *Br J Pharmacol* 2009; 158(3):771-778. >>> Aliskiren; SC; Mice; 2004; 6 weeks; Controls received mp w/ saline; animal info (4 wks old, C57BL/6J); long-term study; enzyme inhibitor (renin).

Q00238 Richards A, McGeechan K, Niknam M, Salomon R, Kurek C, Dong QH et al. Prolonging androgen sensitivity in prostate cancer - a role for COX inhibitors? *ANZ JOURNAL OF SURGERY* 2009; 79(9):641-647. >>> Celecoxib; DMSO; ethanol; water; SC; Mice (nude); 2004; 8 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced after 28 days; stress/adverse reaction (see pg. 646 "local skin dryness and erosion"); enzyme inhibitor (COX-2); cancer (prostate); incorrectly stated pump model 2400; 50% DMSO used; 15% ethanol used.

Q00207 Van Dam D, Coen K, De Deyn PP. Ibuprofen modifies cognitive disease progression in an Alzheimer's mouse model. *JOURNAL OF PSYCHOPHARMACOLOGY* 2010; 24(3):383-388. >>> Ibuprofen; PEG 300; water, ultrapure; SC; Mice; 2004; 8 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced after 4 weeks; animal info (6 wks old, male, APP23); neurodegenerative (Alzheimer's Disease).

Q00161 Jacob A, Bao L, Brorson J, Quigg RJ, Alexander JJ. C3aR inhibition reduces neurodegeneration in experimental lupus. *LUPUS* 2010; 19(1):73-82. >>> C3aRa; DMSO; SC; Mice; 2001; 6 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced weekly; half-life (p. 75) "1.5 hours"; "C3aRa has a short half-life (1.5 h) and therefore was administered continuously using subcutaneously placed osmotic pumps" pg 75; 50% DMSO used.

Q00152 Clausen A, Doctrow S, Baudry M. Prevention of cognitive deficits and brain oxidative stress with superoxide dismutase/catalase mimetics in aged mice. *NEUROBIOLOGY OF AGING* 2010; 31(3):425-433. >>> EUK-189; EUK-207; Mannitol; SC; Mice; 2004; 6 months; Controls received mp w/ vehicle; long-term study; pumps replaced every 28 days; animal info (C57BL/6N Sim, 27-36 g, 17 months old).

Q00109 Chambliss KL, Wu QA, Oltmann S, Konaniah ES, Umetani M, Korach KS et al. Non-nuclear estrogen receptor-alpha signaling promotes cardiovascular protection but not uterine or breast cancer growth in mice. *J Clin Invest* 2010; 120(7):2319-2330. >>> Estradiol; estrogen-dendrimer conjugate; IP; Mice (nude); 3, 7 weeks; 72 hours; Controls received mp w/ empty dendrimer; cardiovascular; cancer (breast); animal info (female, ERE-Luc reporter, 10-13 weeks old; Ex3aERKO, 8-9 weeks old; C57BL/6 Apoe-/-, 6 weeks old; SCID, 8 weeks old); functionality of mp verified by serum agent levels; replacement therapy (ovariectomy; pumps replaced after 28 days); long-term study; photon recording with light emission tomography (LET) system with a CCD camera; Research Diets D10001.

Q00085 Knight ZA, Hannan KS, Greenberg ML, Friedman JM. Hyperleptinemia Is Required for the Development of Leptin Resistance. *PLoS One* 2010; 5(6):U248-U255. >>> Leptin, recomb.; PBS; SC; Mice; 1004; 2002; 2004; 20 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced every 4 weeks, or 12 days; animal info (male, ob/ob C57BL/6J, 4 wks old); functionality of mp verified by plasma leptin levels; "We found, consistent with previous studies, that leptin replacement in ob/ob animals is sufficient to normalize their body weight and other physiologic abnormalities, and furthermore that this normalization can be maintained for 6 months by replacing the pumps monthly." pg. e11377; obesity.

Q00041 Dugan LL, Turetsky M, Cheng D, Lobner D, Wheeler M, Robert Almlı C et al. Carboxyfullerenes as neuroprotective agents. *Proc Natl Acad Sci* 1997; 94:9434-9439. >>> Carboxyfullerene, C3; Saline, physiological; IP; Mice (transgenic); 2004; 2 months; Controls received mp w/ vehicle; long-term study; neurodegenerative (amyotrophic lateral sclerosis); animal info (G93A SOD1 G1, 10 weeks old); functionality of mp verified by residual volume; pumps replaced after 4 weeks; behavioral testing (motor performance).

Q00029 Santhanam L, Tuday EC, Webb AK, Dowzicky P, Kim JH, Oh YJ et al. Decreased S-Nitrosylation of Tissue Transglutaminase Contributes to Age-Related Increases in Vascular Stiffness. *Circ Res* 2010; 107(1):117-U243. >>> L-NAME; Cystamine; Mice; rat; 3 months; 4 weeks; Controls received mp w/vehicle; cardiovascular; enzyme inhibitor (NO synthase; transglutaminase); animal info (male, BL6129S wt, TG2 -/-, 3-5 months old; Fisher 344, 18-19 months

old); pumps replaced every 4 weeks; long-term study.

Q00028 Rudolph TK, Rudolph V, Edreira MM, Cole MP, Bonacci G, Schopfer FJ et al. Nitro-Fatty Acids Reduce Atherosclerosis in Apolipoprotein E-Deficient Mice. *ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY* 2010; 30(5):938-945. >>> Oleic acid; oleic acid, nitro-; Polyethylene glycol; ethanol; SC; Mice; 2004; 12 weeks; Controls received mp w/vehicle; cardiovascular; animal info (male, ApoE ^{-/-}, 8 weeks old); pumps replaced every 4 weeks; agent also known as 9- and 10-nitro-octadecenoic acid; long-term study.

P9977 Koitka A, Cao Z, Koh P, Watson AMD, Sourris KC, Loufrani L et al. Angiotensin II subtype 2 receptor blockade and deficiency attenuate the development of atherosclerosis in an apolipoprotein E-deficient mouse model of diabetes. *Diabetologia* 2010; 53(3):584-592. >>> PD123319; Water, Milli Q; SC; Mice; 2004; 20 weeks; Long-term study; pumps replaced every 28 days; animal info (ApoE ^{-/-}, diabetic); diabetes.

P9961 Nation DA, Szeto A, Mendez AJ, Brooks LG, Zaias J, Herderick EE et al. Oxytocin Attenuates Atherosclerosis and Adipose Tissue Inflammation in Socially Isolated ApoE^{-/-} Mice. *PSYCHOSOMATIC MEDICINE* 2010; 72(4):376-382. >>> Oxytocin; Sodium citrate; SC; Mice; 2006; 12 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced after 6 weeks; animal info (male ApoE ^{-/-}, 11-12 wks old, 22-24 g).

P9906 Police SB, Putnam K, Thatcher S, Batifoulier-Yiannikouris F, Daugherty A, Cassis LA. Weight loss in obese C57BL/6 mice limits adventitial expansion of established angiotensin II-induced abdominal aortic aneurysms. *American Journal of Physiology-Heart and Circulatory Physiology* 2010; 298(6):H1932-H1938. >>> Angiotensin II; SC; Mice; 2004; 12 weeks; Controls received mp w/vehicle, or saline; pumps replaced every 4 weeks; peptides; animal info (male, C57BL/6, 8 wks old); Research Diets D12492; long-term study.

P9769 Johansson ME, Bernberg E, Andersson IJ, Bie P, Skott O, Gan LM et al. High-salt diet combined with elevated angiotensin II accelerates atherosclerosis in apolipoprotein E-deficient mice. *J Hypertens* 2009; 27(1):41-47. >>> Angiotensin II; SC; Mice; 2004; 8 weeks; Peptides; animal info (female, Apo E^{-/-}, 8 wks old); long-term study.

P9435 Pitzer C, Krueger C, Plaas C, Kirsch F, Dittgen T, Mueller R et al. Granulocyte-colony stimulating factor improves outcome in a mouse model of amyotrophic lateral sclerosis. *Brain* 2008; 131:3335-3347. >>> Colony-stimulating factor, G; Sorbitol; sodium acetate buffer; tween 80; SC; Mice (transgenic); 2004; 4, 8 weeks; 4 days; Controls received mp w/ vehicle; functionality of mp verified by G-CSF serum concentration; replacement therapy (sciatic nerve axotomy); long-term study; pumps replaced after 4 weeks; half-life (p. 5) 4 hours in humans and rodents; brain tissue distribution; peptide; animal info (female, C57BL/6, wt, SOD1(G93A)Tg, 11 wks old); neurodegenerative (ALS); behavioral testing (rotarod test, motor performance); 0.004% Tween 80 used.

P9382 Feldmann G, Habbe N, Dhara S, Bisht S, Alvarez H, Fendrich V et al. Hedgehog inhibition prolongs survival in a genetically engineered mouse model of pancreatic cancer. *Gut* 2008; 57(10):1420-1430. >>> Cyclopamine; Sodium citrate buffer; phosphate buffer; cyclodextrin, 2-hydroxy-propyl-beta-; SC; Mice (transgenic); 5, 61-67 days; Controls received mp w/ vehicle; long-term study; pumps replaced weekly; cancer (pancreatic adenocarcinoma); multiple pumps per animal (2); animal info (Pdx1-Cre; LsL-Kras-G12D; Ink4a/ArF-lox/lox Tg, 5 wks old); "pharmacological Hedgehog blockage by continuous administration of low-dose cyclopamine prolongs survival in this model (of pancreatic cancer)." (p. 1420); 30% cyclodextrin used.

P9286 Ciceroni C, Arcella A, Mosillo P, Battaglia G, Mastrantoni E, Oliva MA et al. Type-3 metabotropic glutamate receptors negatively modulate bone morphogenetic protein receptor signaling and support the tumorigenic potential of glioma-initiating cells. *Neuropharmacology* 2008; 55(4):568-576. >>> LY379268; LY341495; SC; Mice (nude); 3 months; Controls received mp w/ saline; long-term study; pumps replaced every 15-28 days; cancer (brain, glioma); MRI; animal info (male, CD-1, nude); mGlu3 receptor-agonist, antagonist.

P9273 Ito M, Gomori A, Suzuki J, Tsujioka S, Sasaki M, Matsuda M et al. Antagonism of central melanin-concentrating hormone 1 receptor alleviates steatohepatitis in mice. *J Endocrinol* 2008; 198(2):309-315. >>> Melanin-concentrating hormone 1, receptor antagonist; Water, distilled; propylene glycol; CSF/CNS; Mice; 2004; 4, 8 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced after 2 or 4 weeks; no stress (see pg. 311, 314); ALZET brain infusion kit used; peptides; post op. care (Cefamezin); animal info (male, C57BL/6, 10 wks old, 16 wks old, 1 year old); animals received mp w/vehicle for 2 or 4 weeks, then mp with agent or vehicle for 2 or 4 more weeks; dental cement used; cannula placement confirmed at end of experiment with Evans blue dye.

P9234 Di Zhang A, Cat AND, Soukaseum C, Escoubet B, Cherfa A, Messaoudi S et al. Cross-Talk Between Mineralocorticoid and Angiotensin II Signaling for Cardiac Remodeling. *Hypertension* 2008; 52(6):1060-1U44. >>> Angiotensin II; SC; Mice (transgenic); 2 months; Controls received mp w/ vehicle; functionality of mp verified by

systolic blood pressure); long-term study; pumps replaced; cardiovascular; peptides; animal info (male, MHCtTA/tetO-hMR DTg, 2 months old, 28-35 g.).

P9078 Billes SK, Cowley MA. Catecholamine reuptake inhibition causes weight loss by increasing locomotor activity and thermogenesis. *Neuropsychopharmacology* 2008; 33(6):1287-1297. >>> Nisoxetine; GBR12783; bupropion; DMSO; saline, nonpyrogenic; SC; Mice; 1007D; 2001; 7 days; Controls received mp w/vehicle; multiple pumps per animal (2); animal info (adult, male, C57BL/6J); 10% DMSO used; "we were limited to 7 days by drug solubility." pg. 1288; incision was closed with wound clips; nisoxetine is a norepinephrine reuptake inhibitor; GBR12783 is a dopamine reuptake inhibitor; "This study emphasizes that although acute studies may infer long-term drug effects, they do not necessarily predict a drug's chronic effects. Even though the chronic studies presented here were limited (by method of administration and drug solubility) to 1 week of treatment, they were sufficient to illustrate differences between the acute and subchronic effects of catecholamine reuptake inhibitors."

P9032 Fukuda D, Sata M, Ishizaka N, Nagai R. Critical role of bone marrow angiotensin II type 1 receptor in the pathogenesis of atherosclerosis in apolipoprotein E-deficient mice. *ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY* 2008; 28(1):90-96. >>> Angiotensin II; Mice; 8 weeks; Controls received mp w/ vehicle; long-term study; peptides; animal info (ApoE -/-, AT1aR -/-).

P9029 Recinos AI, LeJeune WS, Sun H, Lee CY, Tieu BC, Lu M et al. Angiotensin II induces IL-6 expression and the Jak-STAT3 pathway in aortic adventitia of LDL receptor-deficient mice. *Atherosclerosis* 2007; 194(1):125-133. >>> Angiotensin II; SC; Mice; 7 weeks; Controls were sham operated; long-term study; pumps replaced after 4 weeks; peptides; animal info (LDLR -/-, 7 wks old).

P8984 Flamant M, Placier S, Rodenas A, Curat CA, Vogel WF, Chatziantoniou C et al. Discoidin domain receptor 1 null mice are protected against hypertension-induced renal disease. *J Am Soc Nephrol* 2006; 17(12):3374-3381. >>> Angiotensin II; SC; Mice (transgenic); 4, 6 weeks; Functionality of mp verified by systolic blood pressure; pumps replaced; peptides; animal info (male, 129/Sv x CD1, wt, DDR1 -/-, 4-6 months old, 30-35 g.); nephrology; long-term study; pump model incorrectly stated as 1004.

P8980 Mueller MA, Beutner F, Teupser D, Ceglarek U, Thiery J. Prevention of atherosclerosis by the mTOR inhibitor everolimus in LDLR(-/-) mice despite severe hypercholesterolemia. *Atherosclerosis* 2008; 198(1):39-48. >>> SDZ RAD; Ethanol; propylene glycol; SC; Mice; 2004; 12 weeks; Long-term study; pumps replaced every 28 days; animal info (LDL receptor deficient, male); SDZ RAD also known as everolimus or certican; compound is a mammalian target of rapamycin inhibitor.

P8928 Tejeda M, Gaal D, Hullan L, Csuka O, Schwab R, Szokolocz O et al. A comparison of the tumor growth inhibitory effect of intermittent and continuous administration of the somatostatin structural derivative TT-232 in various human tumor models. *Anticancer Res* 2006; 26(4B):3011-3015. >>> TT-232; Water, distilled; acetic acid; sodium acetate; mannitol; SC; Mice (SCID); 2002; 14, 28 days; Comparison of IP, SC injections vs. SC mp; stability verified by 3 weeks at 37 degree Celsius by HPLC analysis for agent + degradation products; cancer (epidermoid carcinoma, breast carcinoma); peptides; animal info (female, SCID, 22-24 g.); somatostate structural derivative; "The comparative experiments (injection and infusion) confirmed that continuous treatments and long-term administration were associated with the best treatment responses" (p. 3014); "Continuous infusion administration of TT-232 significantly inhibited the growth of the tumor when compared with intraperitoneal (ip) and subcutaneous (sc) intermittent injection treatments." (p. 3011).

P8926 Cui GL, Takaishi S, Ai WD, Betz KS, Florholmen J, Koh TJ et al. Gastrin-induced apoptosis contributes to carcinogenesis in the stomach. *LABORATORY INVESTIGATION* 2006; 86(10):1037-1051. >>> Gastrin-17; SC; Mice; 8 weeks; Controls received mp w/ PBS; functionality of mp verified by serum gastrin levels; long-term study; pumps replaced; cancer (gastric); peptides; animal info (male, GAS-KO, 2 months old).

P8813 Kubota Y, Takubo K, Suda T. Bone marrow long label-retaining cells reside in the sinusoidal hypoxic niche. *Biochem Biophys Res Commun* 2008; 366(2):335-339. >>> Uridine, bromodeoxy-; PBS; SC; Mice; 2004; 2 months; Long-term study; pumps replaced after 28 days; multiple pumps per animal (2); animal info (C57BL/6, 1 month old); labeling of bone marrow LRC's.

P8796 Van Dam D, Coen K, De Deyn PP. Cognitive evaluation of disease-modifying efficacy of donepezil in the APP23 mouse model for Alzheimer's disease. *Psychopharmacology* 2008; 197(1):37-43. >>> Donepezil, HCL; Saline; IP; Mice (transgenic); 2004; 8 weeks; Controls received mp w/ vehicle; pumps replaced after 4 weeks; good methods (pg. 39); enzyme inhibitor (acetyl cholinesterase); animal info (transgenic APP23); neurodegenerative (Alzheimer's

disease); long-term study.

P8787 Sharma U, Rhaleb NE, Pokharel S, Harding P, Rasoul S, Peng HM et al. Novel anti-inflammatory mechanisms of N-Acetyl-Ser-Asp-Lys-Pro in hypertension-induced target organ damage. *American Journal of Physiology-Heart and Circulatory Physiology* 2008; 294(3):H1226-H1232. >>> Angiotensin II; peptide, Ac-SDKP; Saline; acetic acid; SC; Mice; 2004; 8 weeks; Controls received mp w/ vehicle; functionality of mp verified by systolic blood pressure; long-term study; pumps replaced after 4 weeks; cardiovascular; peptides; animal info (male, C57BL6/J, 12-14 wks old).

P8773 Lu H, Rateri DL, Feldman DL, Charnigo RJ, Fukamizu A, Ishida JJ et al. Renin inhibition reduces hypercholesterolemia-induced atherosclerosis in mice. *J Clin Invest* 2008; 118(3):984-993. >>> Aliskiren; PBS; SC; Mice; 2004; 4, 12 weeks; Controls received mp w/ vehicle; functionality of mp verified by plasma Aliskiren levels; dose-response (fig. 1); long-term study; pumps replaced every 28 days; no stress (see pg. 985); enzyme inhibitor (Renin); cardiovascular; animal info (male, C57BL/6, Ldlr -/-, 6-8 wks old, 30g.).

P8739 Qiao XT, Ziel JW, Mckimpson W, Madison BB, Todisco A, Merchant JL et al. Prospective identification of a multilineage progenitor in murine stomach epithelium. *Gastroenterology* 2007; 133(6):1989-1998. >>> Interferon-gamma; PBS; BSA; IP; Mice (transgenic); 2, 8, 12 weeks; Controls received mp w/ vehicle; comparison of IP injections vs. mp; peptides; animal info (12.4 KVi1-EGFP tg; C57BL/6J; 4 months old); long-term study.

P8709 Wen J, Wang PY, Smith SV, Haller CA, Chaikof EL. Syndecans are differentially expressed during the course of aortic aneurysm formation. *JOURNAL OF VASCULAR SURGERY* 2007; 46(5):1014-1025. >>> Angiotensin II; SC; Mice; 1002; 2004; 1, 4, 8 weeks; functionality of mp verified by systolic blood pressure; long-term study; pumps replaced after 4 weeks; cardiovascular; peptides; animal info (male, C57BL/6, ApoE -/-, 8 wks old).

P8649 Sancho-Bru P, Bataller R, Fernandez-Varo G, Moreno M, Ramalho LN, Colmenero J et al. Bradykinin attenuates hepatocellular damage and fibrosis in rats with chronic liver injury. *Gastroenterology* 2007; 133(6):2019-2028. >>> Bradykinin; Saline; SC; Rat; mice; 1007D; 2004; 10 weeks; 6 days; Controls received mp w/ vehicle; dose-response (fig 2); long-term study; pumps replaced; no stress (see pg. 2026); animal info (male, Wistar, 205g; male, C57/BL6, 8 wks old); nephrology.

P8636 Shao TC, Li H, Ittmann M, Cunningham GR. Effects of dutasteride on prostate growth in the large probasin-large T antigen mouse model of prostate cancer. *Journal of Urology* 2007; 178(4):1521-1527. >>> Dutasteride; DMSO; PEG 400; SC; Mice (transgenic); 2004; 4, 8 weeks; Controls received mp w/ vehicle; comparison of oral admin. vs. mp; long-term study; pumps replaced after 4 weeks; no stress (see pg. 1522); enzyme inhibitor (5 α -reductase); cancer (prostate); animal info (male, LPB-Tag, tg, wt, 6-7 and 10-11 wks old); 40% DMSO; "Dutasteride greatly decreased prostate tumor growth... without significant negative effects." p. 1526.

P8617 Carro E, Trejo JL, Busiguina S, Torres-Aleman I. Circulating Insulin-Like Growth Factor I Mediates the Protective Effects of Physical Exercise against Brain Insults of Different Etiology and Anatomy. *J Neurosci* 2001; 21(15):5678-5684. >>> Antibody, anti-IGF-I; serum, rabbit; insulin-like growth factor I, recomb.; Saline; SC; Rat; mice; 1002; 2004; 4-6 weeks; 14 days; Controls received mp w/ normal rabbit serum; long-term study; peptides; animal info (male, C57BL/6, 25 grams, male, wistar, 250-300 grams).

P8572 Surwit RS, Edwards CL, Murthy S, Petro AE. Transient effects of long-term leptin supplementation in the prevention of diet-induced obesity in mice. *Diabetes* 2000; 49(7):1203-1208. >>> Leptin, recomb. mouse; SC; Mice; 2004; 12 weeks; Controls received mp w/ PBS; functionality of mp verified by plasma levels and residual volume; long-term study; pumps replaced every 4 weeks; no stress (see pg. 1205); peptides; animal info (male, C57BL/6J, B6, A/J, 20 grams); obesity.

P8567 Zhang J, Tokui Y, Yamagata K, Kozawa J, Sayama K, Iwahashi H et al. Continuous stimulation of human glucagon-like peptide-1 (7-36) amide in a mouse model (NOD) delays onset of autoimmune type 1 diabetes. *Diabetologia* 2007; 50(9):1900-1909. >>> Glucagon-like peptide-1; Acetic acid buffer, 5%; SC; Mice; 2004; 4 or 8 weeks; Controls received mp w/ saline; functionality of mp verified by GLP-1 plasma levels; long-term study; pumps replaced after 4 weeks; animal info (female, NOD mice, 8 weeks old); diabetes; "plasma concentrations of active GLP-1...after pump implantation were significantly elevated and about 1.5 fold higher than before the pump implantation. We therefore considered this delivery system to be appropriate for this experiment." (p. 1903); peptides.

P8559 Samuel CS, Lin F, Hossain MA, Zhao CX, Ferraro T, Bathgate RAD et al. Improved chemical synthesis and demonstration of the relaxin receptor binding affinity and biological activity of mouse relaxin. *Biochemistry* 2007; 46(18):5374-5381. >>> Relaxin, synthetic mouse; SC; Mice; 2004; 4 months; Controls received no treatment; dose-

response (fig. 4); long-term study; pumps replaced every month; half-life (p. 5376) 10-15 minutes; peptides; animal info (Rln -/-, Rln +/-, 2 months old, male).

P8513 Gomori A, Ishihara A, Ito M, Matsushita H, Ito M, Mashiko S et al. Blockade of MCH1 receptor signalling ameliorates obesity and related hepatic steatosis in ovariectomized mice. *Br J Pharmacol* 2007; 151(6):900-908. >>> Melanin-concentrating hormone 1, receptor antagonist; Propylene glycol; water, distilled; CSF/CNS; Mice; 2004; 8 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced after 4 weeks of vehicle delivery; ALZET brain infusion kit used; post op. care (cefamezin-a); animal info (female, C57BL/6J, 12 weeks old, female Mch1r KD, 14-16 weeks old, 22 g); cannula placement confirmed with Evans Blue dye; obesity.

P8471 Fewlass DC, Noboa K, Pi-Sunyer FX, Johnston JM, Yan SD, Tezapsidis N. Obesity-related leptin regulates Alzheimer's A beta. *FASEB J* 2004; 18(15):1870-1878. >>> Leptin, recomb. mouse; PBS; SC; Mice (transgenic); 2004; 4, 8 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced after 4 weeks; peptides; post op. care (lidocaine); neurodegenerative (Alzheimer's disease); animal info (male, female, Tg2576 APPswe, C57BL/6 wt, 10 wks old, 32 wks old); obesity.

P8452 Doran DE, Weiss D, Zhang Y, Griendling KK, Taylor WR. Differential effects of AT₁ receptor and Ca₂₊ channel blockade on atherosclerosis, inflammatory gene expression, and production of reactive oxygen species. *Atherosclerosis* 2007; 195(1):39-47. >>> Candesartan; Saline; Na₂CO₃; SC; Mice; 1002; 2,4 months; 2,6 weeks; Cardiovascular; animal info (male, C57BL/6 apoE -/-, 6-8 wks old); long-term study.

P8443 Banach-Petrosky W, Jessen WJ, Ouyang X, Gao H, Rao J, Quinn J et al. Prolonged exposure to reduced levels of androgen accelerates prostate cancer progression in Nkx3.1; Pten mutant mice. *Cancer Res* 2007; 67(19):9089-9096. >>> Testosterone propionate; PEG 400; SC; Mice; 2004; 7 months; Controls received mp w/ vehicle, or no treatment; replacement therapy (castration); dose-response (fig 1A); long-term study; pumps replaced every 28 days; cancer (prostate); animal info (male, Nkx3.1+/, Pten+/, Nkx3.1 +/-, Nkx3.1-/, Pten+/-, 6 wks old).

P8397 Park JH, Widi GA, Gimbel DA, Harel NY, Lee DHS, Strittmatter SM. Subcutaneous Nogo receptor removes brain amyloid-beta and improves spatial memory in Alzheimer's transgenic mice. *J Neurosci* 2006; 26(51):13279-13286. >>> Nogo-66 receptor (310) ecto-Fc, rat; immunoglobulin G, rat; PBS; SC; Mice (transgenic); 2004; 12 weeks; Controls received mp w/ rat IgG; long-term study; pumps replaced every 28 days; animal info (APPswe/PSEN-1delta E9, 7-10 months old); neurodegenerative (Alzheimer's disease).

P8343 Bone W, Walden CM, Fritsch M, Voigtman U, Leifke E, Gottwald U et al. The sensitivity of murine spermiogenesis to miglustat is a quantitative trait: a pharmacogenetic study. *Reproductive Biology and Endocrinology* 2007; 5:U1-U13. >>> Miglustat; SC; Mice; 2004; 7 weeks; Functionality of mp verified by serum agent levels; comparison of oral vs. mp; long-term study; enzyme inhibitor (ceramide glucosyltransferase); animal info (male, C57BL/6J, BALB/C, FVB/N, 6 weeks old); reproductive endocrinology.

P8323 Shibata MA, Morimoto J, Doi H, Morishima S, Naka M, Otsuki Y. Electrogenic therapy using endostatin, with or without suicide gene therapy, suppresses murine mammary tumor growth and metastasis. *Cancer Gene Therapy* 2007; 14(3):268-278. >>> Ganciclovir; Saline; SC; Mice; 2002; 8 weeks; Controls received mp w/ agent and empty control vector; long-term study; pumps replaced every 14 days; no stress (see pg. 271); cancer (mammary adenocarcinoma); animal info (BALB/C, female, 20-24 grams).

P8289 Banach-Petrosky W, Ouyang XS, Gao H, Nader K, Ji Y, Suh N et al. Vitamin D inhibits the formation of prostatic intraepithelial neoplasia in Nkx3.1; Pten mutant mice. *Clinical Cancer Research* 2006; 12(19):5895-5901. >>> Vitamin D3, 1,25-dihydroxy-; Propylene glycol; SC; Mice; 2004; 1-4 months; Controls received mp w/ vehicle; long-term study; pumps replaced every 4 weeks; stability verified by serum calcium levels; cancer (prostate); animal info (4-7 months old, male).

P8243 Saxe MD, Malleret G, Vronskaya S, Mendez I, Garcia AD, Sofroniew MV et al. Paradoxical Influence of hippocampal neurogenesis on working memory. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA* 2007; 104(11):4642-4646. >>> Ganciclovir; Saline, sterile; SC; Mice (transgenic); 2004; 8 weeks; Controls received mp w/ agent but did not contain GFAP-Tk Tg; long-term study; pumps replaced after 4 weeks, with 2 weeks in between implantations; no stress (see pg. 4643); animal info (male, C57BL/6-BALB/C, 12-20 weeks old); "Because this system has previously been shown to cause gastrointestinal toxicity at high doses (16), we delivered a constant low dose of GCV for several weeks via SC osmotic minipumps...This modification achieved a nearly complete reduction in hippocampal neurogenesis...but resulted in no effects on activity, body weight, food consumption, or (GI) pathology." (p. 4643).

P8075 Myint KM, Yamamoto Y, Doi T, Kato I, Harashima A, Yonekura H et al. RAGE control of diabetic nephropathy in a mouse model - Effects of RAGE gene disruption and administration of low-molecular weight heparin. *Diabetes* 2006; 55(9):2510-2522. >>> Heparin, low molecular weight; PBS; SC; Mice (transgenic); 3 months; Controls received vehicle by sc injection; comparison of sc injections vs. mp; animal info (male, iNOSTg, 1-4 months old diabetic); long-term study.

P8042 Wentz W, Efanov AM, Brenner M, Kharitonov A, Koester A, Sandusky GE et al. Fibroblast growth factor-21 improves pancreatic beta-cell function and survival by activation of extracellular signal-regulated kinase 1/2 and Akt signaling pathways. *Diabetes* 2006; 55(9):2470-2478. >>> Fibroblast growth factor-21; Saline; SC; Mice; 1002; 8 weeks; FGF-21 plasma levels taken; long-term study; pumps replaced every two weeks; animal info (C57BL/6, 8 weeks old); diabetes.

P7875 Lund AK, Goens MB, Nunez BA, Walker MK. Characterizing the role of endothelin-1 in the progression of cardiac hypertrophy in aryl hydrocarbon receptor (AhR) null mice. *TOXICOLOGY AND APPLIED PHARMACOLOGY* 2006; 212(2):127-135. >>> BQ123; Saline; SC; Mice; 2004; 7, 28, 58 days; 8 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced on day 29; cardiovascular; peptides; animal info (C57B6N, AhR -/-, wt, 2 month old, 5 month old, 20-30g.); ET-A receptor antagonist.

P7809 Ma J, Weisberg A, Griffin JP, Vaughan DE, Fogo AB, Brown NJ. Plasminogen activator inhibitor-1 deficiency protects against aldosterone- induced glomerular injury. *Kidney International* 2006; 69(6):1064-1072. >>> Aldosterone, D-; DMSO; SC; Mice; 2004; 12 weeks; Controls received mp w/ vehicle; replacement therapy (uninephrectomy); long-term study; pumps replaced every 4 weeks; cardiovascular; animal info (male, C57BL/6J wt or PAI-1(-/-), 8-10 wk old, 27g.); 3.6% DMSO; nephrology.

P7771 Henderson WJ, Chiang GKS, Tien YT, Chi EY. Reversal of allergen-induced airway remodeling by CysLT₁ receptor blockade. *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE* 2006; 173(7):718-728. >>> Montelukast sodium; dexamethasone; SC; Mice; 2004; 90 days; Controls received mp w/ saline; pumps replaced every 30 days; animal info (female, BALB/C, 6-8 wk old); long-term study.

P7756 Shibuya K, Kanasaki K, Isono M, Sato H, Omata M, Sugimoto T et al. N-acetyl-seryl-aspartyl-lysyl-proline prevents renal insufficiency and mesangial matrix expansion in diabetic db/db mice. *Diabetes* 2005; 54(3):838-845. >>> Peptide, Ac-SDKP; Balanced salt solution; SC; Mice; 2004; 8 weeks; Controls received mp w/ vehicle, or control peptide; functionality of mp verified by plasma AC-SDKP levels; replacement therapy (diabetes); long-term study; pumps replaced at 4 weeks; no stress (see pg. 839, 843); peptides; animal info (male, db/db, db/m, 10 wk. old).

P7750 Suzuki J, Iwai M, Li Z, Li JM, Min LJ, Ide A et al. Effect of combination of calcium antagonist, azelnidipine, and AT₁ receptor blocker, olmesartan, on atherosclerosis in apolipoprotein E-deficient mice. *J Hypertens* 2005; 23(7):1383-1389. >>> Olmesartan; IP; Mice; 1002; 10 weeks; Dose-response (fig. 1); long-term study; pumps replaced every 2 weeks; cardiovascular; animal info (adult, male, ApoE -/-, 6 wk. old, 25-30g.).

P7633 Bao LH, Osawe I, Haas M, Quigg RJ. Signaling through up-regulated C3a receptor is key to the development of experimental lupus nephritis. *J Immunol* 2005; 175(3):1947-1955. >>> C3aRa; DMSO; Mice; 2001; 6 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced every week; half-life (p. 1948), 1.5 hours; animal info (BALB/c, male); 50% DMSO used.

P7631 Barton ER, Morris L, Kawana M, Bish LT, Torsell T. Systemic administration of L-arginine benefits mdx skeletal muscle function. *Muscle & Nerve* 2005; 32(6):751-760. >>> Arginine, L-; SC; Mice; 4, 8 weeks; Controls received mp w/ saline; animal info (male, MDX and C57BL/6, 8 weeks old); long-term study.

P7621 Narai H, Nagano I, Ilieva H, Shiote M, Nagata T, Hayashi T et al. Prevention of spinal motor neuron death by insulin-like growth factor-1 associating with the signal transduction systems in SOD(G93A) transgenic mice. *J Neurosci Res* 2005; 82(4):452-457. >>> Insulin-like growth factor I, recomb. human; CSF, artificial; CSF/CNS (intrathecal, subarachnoid space, lumbar); Mice (transgenic); 2004; 5-10 weeks; Controls received mp w/ vehicle; dose-response (fig 1); long-term study; pumps replaced every 4 weeks; neurodegenerative (Amyotrophic Lateral Sclerosis); animal info (C57BL/6J, female); cannula used for IT placement.

P7618 Park JH, Gimbel DA, GrandPre T, Lee JK, Kim JE, Li WW et al. Alzheimer precursor protein interaction with the Nogo-66 receptor reduces amyloid-beta plaque deposition. *J Neurosci* 2006; 26(5):1386-1395. >>> Nogo-66 receptor (310) ecto-Fc; immunoglobulin G, rat; PBS; CSF/CNS; Mice (transgenic); 2004; 56 days; Controls received mp w/ rat IgG; long-term study; pumps replaced after 28 days; Alzet Brain Infusion Kit 2 used; brain tissue distribution; cyanoacrylate adhesive; neurodegenerative (Alzheimer's disease) animal info (C57BL/6J, APP^{swe}/PSEN

or WT, 6-8 months old).

P7616 Eiden S, Simon E, Schmidt I. Dose-related steady states of fat loss in long-term leptin-treated ob/ob mice: Leptin resistance or desensitization versus counterregulatory signaling. *JOURNAL OF COMPARATIVE PHYSIOLOGY B-BIOCHEMICAL SYSTEMIC AND ENVIRONMENTAL PHYSIOLOGY* 2005; 175(7):487-497. >>> Leptin, recomb. murine His 6-tagged; Saline; SC; Mice; 1002; 55, 60 days; Controls received mp w/ agent and were 2 months old; functionality of mp verified by residual volume; dose-response (fig 1); long-term study; pumps replaced every 15 days; no stress (see pg.488); peptides; animal info (C57B1/6J, male, ob/ob; 2 or 5 months old 33 g, 58 g).

P7607 Fernandez AM, Carro EM, Lopez-Lopez C, Torres-Aleman I. Insulin-like growth factor I treatment for cerebellar ataxia: Addressing a common pathway in the pathological cascade? *BRAIN RESEARCH REVIEWS* 2005; 50(1):134-141. >>> Insulin-like growth factor I; SC; CSF/CNS; Rat; mice; 1 month; 2 weeks; Peptides; neurodegenerative (cerebellar ataxia); Review, pg. 138, ref #21; "This long-term delivery system increases therapeutically available IGF-1 at least 30-fold as compared to single subcutaneous injections" (p. 138).

P7602 Iwai M, Chen R, Li Z, Shiuchi T, Suzuki J, Ide A et al. Deletion of angiotensin II type 2 receptor exaggerated atherosclerosis in apolipoprotein E-null mice. *Circulation* 2005; 112(11):1636-1643. >>> Valsartan; IP; Mice; 1002; 10 weeks; Controls received no treatment; long-term study; cardiovascular; animal info (male); AT1 receptor blocker.

P7575 Zhan GX, Serrano F, Fenik P, Hsu R, Kong LH, Pratico D et al. NADPH oxidase mediates hypersomnolence and brain oxidative injury in a murine model of sleep apnea. *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE* 2005; 172(7):921-929. >>> Apocynin; DMSO; SC; Mice; 1002; 8 weeks; Controls received mp w/ vehicle or PBS; long-term study; pumps replaced; enzyme inhibitor (NADPH oxidase); animal info (male, C57BL/6J, 10 wk old).

P7554 Lautrette A, Li SQ, Alili R, Sunnarborg SW, Burtin M, Lee DC et al. Angiotensin II and EGF receptor cross-talk in chronic kidney diseases: a new therapeutic approach. *Nature Medicine* 2005; 11(8):867-874. >>> Angiotensin II; Saline; SC; Mice; mice (transgenic); 2004; 2 months; 7 days; Controls received mp w/ vehicle; replacement therapy (nephrectomy); long-term study; pumps replaced at 1 month; peptides; animal info (C57Bl6, female, 1 week old).

P7476 Lund AK, Peterson SL, Timmins GS, Walker MK. Endothelin-1-mediated increase in reactive oxygen species and NADPH oxidase activity in hearts of aryl hydrocarbon receptor (AhR) null mice. *TOXICOLOGICAL SCIENCES* 2005; 88(1):265-273. >>> BQ123; Saline; SC; Mice; 2004; 28, 58 days; Controls received mp w/ vehicle; long-term study; pumps replaced on day 29; no stress (see pg. 266); cardiovascular; animal info (C57BL6N, 8 wks old); ET-A receptor antagonist.

P7473 Minhas KM, Khan SA, Raju SVY, Phan AC, Gonzalez DR, Skaf MW et al. Leptin repletion restores depressed beta-adrenergic contractility in ob/ob mice independently of cardiac hypertrophy. *JOURNAL OF PHYSIOLOGY-LONDON* 2005; 565(2):463-474. >>> Leptin, recomb. mouse; SC; Mice; 1002; 28 days; Functionality of mp verified by plasma agent levels; long-term study; pumps replaced after 14 days; cardiovascular; peptides; animal info (C57BL/6J wt, ob/ob, 6 wk old).

P7401 Donners MMPC, Bot I, De Windt LJ, van Berkel TJC, Daemen MJAP, Biessen EAL et al. Low-dose FK506 blocks collar-induced atherosclerotic plaque development and stabilizes plaques in ApoE^{-/-} mice. *AMERICAN JOURNAL OF TRANSPLANTATION* 2005; 5(6):1204-1215. >>> FK-506; PBS; SC; Mice; 2004; 4,8 weeks; Controls received mp w/ vehicle; plasma levels taken; long-term study; pumps replaced every 4 weeks.

P7341 Zhou Y, Chen R, Catanzaro SE, Hu LF, Dansky HM, Catanzaro DF. Differential effects of angiotensin II on atherogenesis at the aortic sinus and descending aorta of apolipoprotein-E-deficient mice. *Am J Hypertens* 2005; 18(4):486-492. >>> Angiotensin II; Saline; SC; Mice (knockout); 2004; 8-32 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced every 4 weeks; cardiovascular; peptides.

P7328 Kharitonov A, Shiyanova TL, Koester A, Ford AM, Micanovic R, Galbreath EJ et al. FGF-21 as a novel metabolic regulator. *J Clin Invest* 2005; 115(6):1627-1635. >>> Fibroblast growth factor-21; Saline; SC; Mice; 8 weeks; Controls received mp w/ vehicle; replacement therapy (diabetic, db/db); comparison of SC injections vs. mp (minipump used to study mitogenicity during longer exposure); long-term study.

P7245 Mashiko S, Ishihara A, Gomori A, Moriya R, Ito M, Iwaasa H et al. Antiobesity effect of a melanin-concentrating hormone 1 receptor antagonist in diet-induced obese mice. *Endocrinology* 2005; 146(7):3080-3086. >>>

Melanin-concentrating hormone 1 receptor antagonist; Propylene glycol; CSF, artificial; CSF/CNS; CSF/CNS (third ventricle); Mice; 1007D; 2002; 2004; 3, 8 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced after 1 or 4 weeks of vehicle; ALZET brain infusion kit used; peptides; cyanoacrylate adhesive; post op. care (cefamedin); DEXA; cannula placement confirmed by Evans blue dye injection; animal info (C57BL/6); pumps used in lateral ventricle for one group of animals, and third ventricle for others. Third ventricle group used Plastics One cannulae.

P7184 Mathian A, Weinberg A, Gallegos M, Banchereau J, Koutouzov S. IFN-alpha induces early lethal lupus in preautoimmune (New Zealand black x New Zealand White) F_1 but not in BALB/c mice¹. *J Immunol* 2005; 174 (5):2499-2506. >>> Interferon, mouse; PBS; BSA; SC; Mice; 1002; 8-10 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced every 2 weeks; immunology.

P7053 Zucker B, Ludin DE, Gerds TA, Luecking CH, Landwehrmeyer GB, Feuerstein TJ. Gabapentin-lactam, but not gabapentin, reduces protein aggregates and improves motor performance in a transgenic mouse model of Huntington's disease. *NAUNYN-SCHMIEDEBERGS ARCHIVES OF PHARMACOLOGY* 2004; 370(2):131-139. >>> Gabapentin-lactam; gabapentin; Isobutanol; saline; SC; Rat; mice (transgenic); 2002; 4-8 weeks; Controls received mp w/ vehicle, or no treatment; functionality of mp verified by residual volume; long-term study; pumps replaced every 2 weeks; no stress (see pg. 137); half-life (pg. 134, 136) approx. 2 hours; "The continuous application of both GBP-L and of GBP by ALZET pumps have maintained the plasma levels so that the actions of these drugs at their targets in the CNS were not interrupted due to their rather short half-lives." (pg. 138); neurodegenerative (huntington's disease).

P7005 Duncan RE, El-Soheby A, Archer MC. Mevalonate promotes the growth of tumors derived from human cancer cells in vivo and stimulates proliferation in vitro with enhanced cyclin-dependent kinase-2 activity. *J Biol Chem* 2004; 279(32):33079-33084. >>> Mevalonate; SC; Mice (nude); 2004; 13 weeks; Controls received mp w/ vehicle, or isotonic saline; long-term study; pumps replaced every 28 days; cancer (MDA-MB-435); MDA-MB-435 is a highly malignant human cancer of either breast adenocarcinoma or occult melanoma (origin uncertain); cancer (breast, melanoma, adenocarcinoma).

P6807 Christie PE, Jonas M, Tsai CH, Chi EY, Henderson WJ. Increase in laminin expression in allergic airway remodelling and decrease by dexamethasone. *Eur Respir J* 2004; 24(1):107-115. >>> Dexamethasone; SC; Mice; 2004; 50 days; Controls received mp w/ saline; long-term study; pumps replaced after 28 days; no stress (see pg. 110); Asthma.

P6794 Pittner RA, Moore CX, Bhavsar SP, Gedulin BR, Smith PA, Jodka CM et al. Effects of PYY[3-36] in rodent models of diabetes and obesity. *Int J Obes* 2004; 28(8):963-971. >>> Peptide YY (3-36); PBS; SC; Rat; mice; 2004; 2ML4; 4, 8 weeks; Controls received mp w/ vehicle; dose-response (fig. 1); comparison of IP injections vs. mp; long-term study; pumps replaced after 4 weeks; diabetes; obesity; peptide.

P6774 Bello L, Lucini V, Costa F, Pluderi M, Giussani C, Acerbi F et al. Combinatorial administration of molecules that simultaneously inhibit angiogenesis and invasion leads to increased therapeutic efficacy in mouse models of malignant glioma. *Clinical Cancer Research* 2004; 10(13):4527-4537. >>> PEX, recomb. human; PF-4/CTF; P4-4/DLR; vascular endothelial growth inhibitor, cyclo-; Water, sterile; SC; Mice; mice (nude); 2004; 28, 112, 140 days; Dose-response; long-term study; pumps replaced every 28 days; no stress (see pg. 4532); cancer (glioma); peptides; "The treatment was always very well tolerated without the occurrence of any side effects." (p. 4532); angiogenesis inhibitor.

P6725 Shannon KE, Keene JL, Settle SL, Duffin TD, Nickols MA, Westlin M et al. Anti-metastatic properties of RGD-peptidomimetic agents S137 and S247. *CLINICAL & EXPERIMENTAL METASTASIS* 2004; 21(2):129-138. >>> S247; SC; Mice (SCID); 2, 4, 8 weeks; Controls received mp w/ vehicle; half-life (p. 133), 5 hours; cancer (lung); S247 is a RGD peptidomimetic compound; long-term study.

P6721 Hashimoto N, Maeshima Y, Satoh M, Odawara M, Sugiyama H, Kashihara N et al. Overexpression of angiotensin type 2 receptor ameliorates glomerular injury in a mouse remnant kidney model. *American Journal of Physiology-Renal Physiology* 2004; 286(3):F516-F525. >>> PD123319; SC; Mice; 2002; 6 weeks; Long-term study; pumps replaced every two weeks; AT₂R specific antagonist.

P6627 Doh-ura K, Ishikawa K, Murakami-Kubo I, Sasaki K, Mohri S, Race R et al. Treatment of transmissible spongiform encephalopathy by intraventricular drug infusion in animal models. *JOURNAL OF VIROLOGY* 2004; 78 (10):4999-5006. >>> Quinacrine; chloroquine; amphotericin B; E-64d; pentosan polysulfate; PBS; water, distilled; DMSO; SC; CSF/CNS; Rat; mice; dog (mongrel); 2 months; 4 weeks; Controls received mp w/ vehicle; dose-response

(fig. 2); no stress (see pg. 5004); stress/adverse reaction: (see pg. 5002) PPS at highest dose (20mg/kg/day) showed hemorrhage in the SC area surrounding the mp; enzyme inhibitor (cysteine protease [E-64d]); long-term study.

P6497 Tejeda M, Gaal D, Barna K, Csuka O, Keri G. The antitumor activity of the somatostatin structural derivative (TT-232) on different human tumor xenografts. *Anticancer Res* 2003; 23(5A):4061-4066. >>> TT-232; Acetic acid; sodium acetate; water, distilled; mannitol; SC; Mice; 2002; 14,28 days; Dose-response (fig.2); comparison of daily SC injections vs. mp; pumps replaced at day 14; stability verified over 3 weeks; cancer (prostate, breast, colon, melanoma, leukemia); peptides; "a significant antitumor activity of TT-232 was observed following long-term infusion using osmotic minipumps" (p. 4064).

P6477 Browne SE, Roberts LI, Dennery PA, Doctrow SR, Beal MF, Barlow C et al. Treatment with a catalytic antioxidant corrects the neurobehavioral defect in ataxia-telangiectasia mice. *Free Radic Biol Med* 2004; 36(7):938-942. >>> EUK-189; Mannitol; SC; Mice; 2004; 56, 84 days; Controls received mp w/ vehicle; long-term study; pumps replaced every 28 days; no stress (see pg.941); cancer (thymoma); EUK-189 is a synthetic catalytic antioxidant w/ both catalase & superoxide dismutase activities; neurodegenerative (ataxia telangiectasia).

P6171 Nikolovski Z, Hof A, Baumlin Y, Hof RP. Efficacy of SDZ RAD compared with CsA monotherapy and combined RAD/FTY720 treatment in a murine cardiac allotransplantation model. *TRANSPLANT IMMUNOLOGY* 2001; 9:43-49. >>> SDZ RAD; cyclosporin A; Propanediol propylene glycol, 1,2-; sandimmune IV solution; SC; Mice; 2002; 8 weeks; Controls received mp w/ vehicle; pumps replaced every two weeks; cardiovascular; SDZ RAD (everolimus or certican) is an immunosuppressant; "SDZ RAD has a shorter half-life than rapamycin; CsA was dissolved in sandimmune IV solution; long-term study.

P6108 Damaj MI, Kao W, Martin BR. Characterization of spontaneous and precipitated nicotine withdrawal in the mouse. *J Pharmacol Exp Ther* 2003; 307(2):526-534. >>> Nicotine; Saline; SC; Mice; 2001; 2002; 2004; 7,14,28, 56 days; Pumps replaced every 28 days for the 2 month study; dependence; long-term study.

P6100 Feeney SJ, Austin L, Bennett TM, Kurek JB, Jean-Francois MJB, Muldoon C et al. The effect of leukaemia inhibitory factor on SOD1 G93A murine amyotrophic lateral sclerosis. *Cytokine* 2003; 23(4-5):108-118. >>> Leukemia inhibitory factor; CSF/CNS (intrathecal); Mice (transgenic); 2004; 13 weeks; Comparison of SC injections vs. IT mp; long-term study; pumps replaced every 4 weeks; ALZET brain infusion kit 1 used (per Dr. Feeney); used the BIK for the IT infusion; glued and sutured the cannula in place; "All mice that entered the study recovered from the surgical procedure and appeared to have no adverse effects." (p. 111); neurodegenerative (Amyotrophic Lateral Sclerosis).

P6025 Saraff K, Babamusta F, Cassis LA, Daugherty A. Aortic dissection precedes formation of aneurysms and atherosclerosis in angiotensin II-infused, apolipoprotein E-deficient mice. *ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY* 2003; 23(9):1621-1626. >>> Angiotensin II; Saline; SC; Mice (knockout); 2004; 56 days; Controls received mp w/ vehicle; long-term study; pumps replaced every 4 weeks; cardiovascular; peptides.

P5946 Zilberberg L, Shinkaruk S, Lequin O, Rousseau B, Hagedorn M, Costa F et al. Structure and inhibitory effects on angiogenesis and tumor development of a new vascular endothelial growth inhibitor. *J Biol Chem* 2003; 278(37):35564-35573. >>> CBO-p11; PBS; SC; Mice (nude); 2004; 28,58 days; Controls received mp w/ vehicle; long-term study; pumps replaced every 28 days for the long-term study; cancer (glioma); CBO-p11 is a cyclo-VEGI inhibitor; angiogenesis inhibitor.

P5936 Liu RL, Liu IY, Bi XN, Thompson RF, Doctrow SR, Malfroy B et al. Reversal of age-related learning deficits and brain oxidative stress in mice with superoxide dismutase/catalase mimetics. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA* 2003; 100(14):8526-8531. >>> EUK-189; EUK-207; Mannitol; water; SC; Mice; 2004; 3 months; Controls received mp w/ vehicle; long-term study; pumps replaced every 28 days in same location; pumps primed for >40 hours in 5% mannitol; eukarion is a synthetic catalytic scavenger of reactive oxygen species; stress/adverse reaction: in 10% of mice, the pumps were replaced on the other side of hip area due to skin damage of original site of implantation; behavioral study.

P5890 Gregorevic P, Plant DR, Leeding KS, Bach LA, Lynch GS. Improved contractile function of the mdx dystrophic mouse diaphragm muscle after insulin-like growth factor-I administration. *Am J Pathol* 2002; 161(6):2263-2272. >>> Insulin-like growth factor; HCL; Saline; SC; Mice; 1002; 8 weeks; Functionality of mp verified by residual volume; long-term study; pumps replaced after 2 weeks; no stress (see pg. 2264); good methods p. 2264; muscular dystrophy; partially dipped in paraffin wax to achieve a pumping rate of 0.125 ul/hr for 28 days.

P5887 Matsumoto Y, Hof A, Baumlin Y, Hof RP. Differential effect of cyclosporine A and SDZ RAD on neointima

formation of carotid allografts in apolipoprotein E-deficient mice. *Transplantation* 2003; 76(8):1166-1170. >>> SDZ RAD; cyclosporin A; Propylene glycol; sandimmune IV solution; SC; Mice (knockout); 2002; 8 weeks; Dose-response (survival dose response) p. 1168; pumps replaced every 2 weeks; immunology; (RAD) is a novel rapamycin derivative and is an immunosuppressant, aka everolimus or certican; sandimmune IV solution used; "CSA & RAD were administered by ALZET minipumps, which we prefer because of the well-defined drug exposure." p. 1168; long-term study.

P5819 Giussani C, Carrabba G, Pluderi M, Lucini V, Pannacci M, Caronzolo D et al. Local intracerebral delivery of endogenous inhibitors by osmotic minipumps effectively suppresses glioma growth in vivo. *Cancer Res* 2003; 63(12):2499-2505. >>> Platelet factor-4; MMP-2 (hemopexin fragment); PBS; SC; CSF/CNS (intratumoral); Mice; 2004; 28 or 94 days; Controls received mp w/ PBS; tissue perfusion (tumor); dose-response (p.2502); comparison of IP injections SC systemic mp infusion vs. local intracranial mp infusion; long-term study; pumps replaced after 28 days in some groups; stability verified by in vitro assay; cancer (glioma); Angiogenesis inhibitors; COOH terminal fragment of PF-4 used; In vitro activity of agents confirmed for up to 16 days; "In conclusion, our data demonstrates that local intracerebral delivery of endogenous inhibitors by osmotic minipumps is a very effective modality for the treatment of aggressive tumors..." (p.2505); tissue perfusion (tumor).

P5726 Eder IE, Hoffmann J, Rogatsch H, Schafer G, Zopf D, Bartsch G et al. Inhibition of LNCaP prostate tumor growth in vivo by an antisense oligonucleotide directed against the human androgen receptor. *Cancer Gene Therapy* 2003; 9(2):117-125. >>> Oligonucleotide, antisense; Water, distilled; SC; Mice (nude); 7 weeks; Controls received mp w/ vehicle; long-term study, pumps replaced every two weeks; no stress (see pg. 122); cancer (prostate); antisense; pumps implanted SC in the vicinity of tumors; ODN w/ specificity to the androgen receptor; "...mice did not show any reaction on the subcutaneously installed ALZET diffusion pumps. These were chosen to guarantee a continuous systemic administration of oligonucleotides, a commonly used method for antisense treatment in vivo." (p 122).

P5214 Permanne B, Adessi C, Saborio GP, Fraga S, Frossard MJ, Van Dorpe J et al. Reduction of amyloid load and cerebral damage in a transgenic mouse model of Alzheimer's disease by treatment with a beta-sheet breaker peptide. *FASEB J* 2002; 16(8):860-862. >>> Amyloid protein, beta; Saline; DMSO; CSF/CNS; Mice (Transgenic); 1002; 2 months; Controls received mp w/ vehicle; comparison of IP injections vs. icv infusion via mp; half-life (37 +/- 5 min); peptides: neurodegenerative (Alzheimer's disease); 10% DMSO in saline vehicle used; long-term study.

P4942 Sakamoto H, Aikawa M, Hill CC, Weiss D, Taylor WR, Libby P et al. Biomechanical strain induces class a scavenger receptor expression in human monocyte/macrophages and THP-1 cells - A potential mechanism of increased atherosclerosis in hypertension. *Circulation* 2001; 104:109-114. >>> Angiotensin II; Saline; Acetic acid; SC; mice; 1002; 8 weeks; Functionality of mp verified by systolic blood pressure measurements; pumps replaced every 2 weeks for 8 week study; cardiovascular; immunology; peptides; atherosclerosis; vehicle was .01M/L acetic acid in saline; long-term study.

P4775 Weiss D, Kools JJ, Taylor WR. Angiotensin II-induced hypertension accelerates the development of atherosclerosis in ApoE-deficient mice. *Circulation* 2001; 103:448-454. >>> Angiotensin II; Norepinephrine; Water; Sodium chloride; Acetic acid; SC; mice; 1002; 4 or 8 weeks; Functionality of mp verified by plasma angiotensin levels; long-term study, pumps replaced 4 to 8 week study; vehicle solution was 0.15 M NaCl, .01 N acetic acid.

P4567 Rafael J, Herling AW. Leptin effect in *ob/ob* mice under thermoneutral conditions depends not necessarily on central satiation. *Am J Physiol Regulatory Integrative Comp Physiol* 2000; 278:R790-R795. >>> Leptin; PBS; SC; Mice; 1002; 15-75 days; Controls received mp w/vehicle; functionality of mp verified by plasma levels; long-term study, pumps replaced every 2 weeks; peptides.

P4528 Maruno K, Absood A, Said SI. Vasoactive intestinal peptide inhibits human small-cell lung cancer proliferation *in vitro* and *in vivo*. *Proc Natl Acad Sci* 1998; 95:14373-14378. >>> Vasoactive intestinal peptide; forskolin; PBS; DMSO; SC; Mice (nude); 2002; 8 weeks; Controls received mp w/PBS; dose-response (pg. 14376-14377); long-term study, pumps replaced after 2 weeks; cancer (lung); multiple pumps per animal (2) in some animals; "For systemic delivery of peptides in vivo, constant infusion by osmotic pumps increases efficacy and reduces side effects relative to bolus injection." (p. 14377).

P4466 Fehniger TA, Carson WE, Mrózek E, Caligiuri MA. Stem cell factor enhances interleukin-2-mediated expansion of murine natural killer cells in vivo. *Blood* 1997; 90(9):3647-3653. >>> Interleukin-2; PBS; Serum, syngenic mouse; SC; Mice; 8 weeks; Controls received mp w/vehicle; functionality of mp verified by plasma levels; long-term study, pump replaced every 10 days; immunology; peptides.

P4452 Li M, Ona VO, Guégan C, Chen M, Jackson-Lewis V, Andrews LJ et al. Functional role of caspase-1 and

caspase-3 in an ALS transgenic mouse model. *Science* 2000; 288(14):335-339. >>> zVAD-fmk; DMSO; Pipes; CSF/CNS; Mice (transgenic); 56 days; Controls received mp w/vehicle; pumps replaced after 28 days; zVAD-fmk is a broad caspase inhibitor; also called N-benzyloxycarbonyl-Val-Asp- fluoromethylketone; neurodegenerative (Amyotrophic Lateral Sclerosis); long-term study.

P3823 Huang Y, Snyder R, Kligshsteyn M, Wickstrom E. Prevention of tumor formation in a mouse model of burkitt's lymphoma by 6 weeks of treatment with anti-c-myc DNA phosphorothioate. *Molec Medicine* 1995; 1(6):647-658. >>> Oligodeoxynucleotide, phosphorothioate antisense; Saline; SC; mice; 2002; 6 weeks; Controls received mp w/saline or scrambled DNA; comparison of pellets and SC injections vs. mp; long-term study, pumps replaced every 2 weeks; "Total amount of DNA in the pellets and the rate of release from each pellet varied widely and unpredictably." (pg. 649); cancer; toxicology; antisense.

P3746 Walduck AK, Opdebeeck JP. Effect of the profile of antigen delivery on antibody responses in mice. *J Controlled Release* 1997; 43:75-80. >>> BSA; PBS; SC; mice; 2002; 4, 8, 12 weeks; controls received PBS injections; comparison of sc injections vs. mp; long-term study, pumps replaced every 2 weeks; immunology.

P3679 Steppuhn KG, Turski L. Diazepam dependence prevented by glutamate antagonists. *Proc Natl Acad Sci* 1993; 90:6889-6893. >>> CPP; NBQX; GYKI 52466; IP; mice; 2002; 1003D; 14 days, 72 hours; controls received mp w/ vehicle; agents are glutamate antagonists; 4 pumps (1003D) per mouse implanted; NBQX is an AMPA antagonist; article states "NBQX has not been used for long-term administration by means of osmotic minipumps because of insufficient solubility" (p. 6890); tolerance; dependence.

P3610 Fisher WE, Muscarella P, O'Dorisio TM, O'Dorisio MS, Kim JA, Doran TA et al. Expression of the somatostatin receptor subtype-2 gene predicts response of human pancreatic cancer to octreotide. *Surgery* 1996; 120:234-241. >>> Octreotide; Saline; SC; mice (nude); 2002; 36 days; controls received mp w/ saline; long-term study, pumps replaced every two weeks; cancer; pumps implanted on flank opposite tumor.

P2803 Carballido JM, Schols D, Namikawa R, Zurawski S, Zurawski G, Roncarolo M-G et al. IL-4 induces human B cell maturation and IgE synthesis in SCID-hu mice. *J Immunol* 1995; 155:4162-4170. >>> Interleukin-4; PBS; SC; mice (SCID); 2002; no duration posted; long-term study, pumps replaced; immunology; human IL-4 used.

P2302 Bell SA, Hobbs MV, Rubin RL. Isotype-restricted hyperimmunity in a murine model of the toxic oil syndrome. *J Immunol* 1992; 148:3369-3376. >>> Oleic acid anilide; Saline; IP; mice; 2002; 6 weeks; Long-term study, pumps replaced every 2 weeks; immunology; toxicology; SC pump connected to IP catheter; fatty acid.

P1852 Dauvois S, Geng C-S, Levesque C, Merand Y, Labrie F. Additive inhibitory effects of an androgen and the antiestrogen EM-170 on estradiol-stimulated growth of human ZR-75-1 breast tumors in athymic mice. *Cancer Res* 1991; 51:3131-3135. >>> EM-170; Progesterone acetate, medroxy-; DMSO; mice; 40 days; replacement therapy (ovariectomy); long-term study, pumps replaced every 20 days; cancer; antiestrogen.

P1639 Dennis JW, Koch K, Yousefi S, VanderElst I. Growth inhibition of human melanoma tumor xenografts in athymic nude mice by swainsonine. *Cancer Res* 1990; 50:1867. >>> Swainsonine; Saline; SC; mice (nude); 2002; 6 weeks; dose-response; long-term study, pump replaced every 2 weeks; cancer.

P1216 Colley DG, Ahn M-H. [Immunological responses by soluble egg antigen of *Schistosoma mansoni* in mice]. *Korean J Parasitol* (Korean, English abstract) 1984; 22(2):203-208. >>> Antigens, soluble egg; HGG; IP; mice; 9 weeks; pump model not stated; controls received mp w/HGG; Korean paper with English abstract; immunology; long-term study; pump replaced every 2 weeks.

P0734 Potter GK, Mohamed AN, Dracopoli NC, Groshen SLB, Shen RN, Moore MAS. Action of 1,25-(OH)₂D₃ in nude mice bearing transplantable human myelogenous leukemic cell lines. *Exp Hematol* 1985; 13:722-732. >>> Vitamin D₃, 1,25-dihydroxy-; Propylene glycol; SC; mice (nude); 2001; 70 days; mp replaced periodically; long-term study; comparison of various agents iv vs. mp infusion; cancer chemotherapy.

P0667 Dembinski TC, Leung CKH, Shiu RPC. Evidence for a novel pituitary factor that potentiates the mitogenic effect of estrogen in human breast cancer cells. *Cancer Res* 1985; 45(7):3083-3089. >>> Growth hormone, human; Growth hormone, ovine; Prolactin, ovine; mice; 49-56 days; comparison of daily sc injec. vs. mp infusion; comparison of agents effects; long-term study; cancer; peptides.