Recent References on the Administration of Agents to Immunodeficient Mice Using ALZET® Osmotic Pumps

NOG Mice

Q10584: K. Kudo, *et al.* Secreted Phospholipase A(2) Modifies Extracellular Vesicles and Accelerates B Cell Lymphoma. Cell Metabolism 2022;34(4):615-633 e8
Agents: Varespladib **Vehicle:** Sulfobutylether-beta-cyclodextrin; **Route:** Intrasplenic; **Species:** Mice; **Pump:** 2006; 1004; **Duration:** 3 weeks;
ALZET Comments: Dose (1 ug/g body weight/day); Controls received mp w/ vehicle; mouse jugular catheter used; animal info: humanized NOG mice; Varespladib is a sPLA2 inhibitor; immunology;

Q6623: T. Morishita, *et al.* The photosensitizer verteporfin has light-independent antileukemic activity for Ph-positive acute lymphoblastic leukemia and synergistically works with dasatinib. ONCOTARGET 2016;7(35):56241-56252
Agents: Verteporfin **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days;
ALZET Comments: Dose (140 mg/kg/day); Controls received mp w/ vehicle; animal info (NOG mice); Resultant plasma level (654 nM); cancer (leukemia);

Q5592: S. Ando, *et al.* Tofacitinib induces G1 cell-cycle arrest and inhibits tumor growth in Epstein-Barr virus-associated T and natural killer cell lymphoma cells. Oncotarget 2016;7(47):76793-76805
Agents: Tofacitinib **Vehicle:** DMSO, PEG, Saline; **Route:** SC; **Species:** Mice (NOG); **Pump:** Not Stated; **Duration:** 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; 50% DMSO, 10% PEG, 40% Saline used; cancer (Lymphoma); Therapeutic indication (lymphoma); Dose (30 mg/kg/day); enzyme inhibitor (JAK3)

Q4667: P. Yu, *et al.* Augmented efficacy with the combination of blockade of the Notch-1 pathway, bortezomib and romidepsin in a murine MT-1 adult T-cell leukemia model. LEUKEMIA 2015;29(556-566
Agents: Compound E **Vehicle:** PEG 300; **Route:** SC; **Species:** Mice (NOG); **Pump:** Not Stated; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ PBS; animal info (NOG); cancer (leukemia, adult T-cell);

Q2329: Y. Zhang, *et al.* CXCR4 inhibitors selectively eliminate CXCR4-expressing human acute myeloid leukemia cells in NOG mouse model. Cell Death & Disease 2012;3(;):U31-U41
Agents: AMD 3100; TN140 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NOG); **Pump:** Not Stated; **Duration:** 7 days;
ALZET Comments: Control animals received mp w/ PBS; animal info (NOG -/-); cancer; half-life, pg 2 "Taking into consideration the short in vivo half-life of AMD3100 (3-5 h) and TN140 (9.6 h) the drugs were administered by s.c. pumps implantation during 7 days."

Q0599: M. S. Smith, *et al.* Granulocyte-Colony Stimulating Factor Reactivates Human Cytomegalovirus in a Latently Infected Humanized Mouse Model. Cell Host & Microbe 2010;8(3):284-291
Agents: Granulocyte-colony stimulating factor; AMD 3100 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NOG); **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ PBS; animal info (7-10 wks old, NOD-scid, IL2Rgc null); immunology

NSG Mice

Q10613: N. Moskovits, *et al.* Palbociclib in Combination With Sunitinib Exerts a Synergistic Anti-Cancer Effect in Patient-Derived Xenograft Models of Various Human Cancers Types. Cancer Letters 2022;536(215665
Agents: Estradiol **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 28 days;
ALZET Comments: Dose (1.08 mg/pellet); animal info (5–8 weeks old immunodeficient NRG or NSG mice (NSG, NOD.Cg-25 PrkdcscidIl2rgtm1Wjl/SzJl; NRG, NOD.Cg-Rag1tm1Mom Il2rgtm1Wjl/SzJ) female or male according to the patient's sex.); cancer (Breast);

Q10274: S. Hegde, *et al.* Inhibition of the RacGEF VAV3 by the small molecule IODVA1 impedes RAC signaling and overcomes resistance to tyrosine kinase inhibition in acute lymphoblastic leukemia. Leukemia 2022;36(3):637-647
Agents: IODVA1; Imatinib **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Vav3-deficient mice and Rac1Δ/Δ+Rac2-deficient mice; C57Bl/10 (females, 8–16 weeks old) and NSG (NOD/SCID/IL2RG-/- males and females, 8–14 weeks old); IODVA1 aka 2-guanidinobenzimidazole derivative with anti-tumorigenic properties; cancer (leukemia)

Q10479: A. Freuchet, *et al.* IL-34 deficiency impairs FOXP3(+) Treg function in a model of autoimmune colitis and decreases immune tolerance homeostasis. Clinical and Translational Medicine 2022;12(8):e988
Agents: Interleukin-34, recombinant human **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice; **Pump:** 1004; **Duration:** 14 days;
ALZET Comments: Dose: (.42 µg/h); animal info: NOD/SCID/Il2rg−/− (NSG) 8–12-week-old; peptide; immunology;

Q9781: Development of a huBLT Mouse Model to Study HCMV Latency, Reactivation, and Immune Response. Methods in Molecular Biology 2021;
Agents: Granulocyte-colony stimulating factor **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Pump:** 1000; **Duration:** Not Stated;
ALZET Comments: Animal info (Adult NOD.Cg-Prkdcscid IL2rgtm1Wjil/SxJ (NSG) mice); functionality of mp verified by weight; Granulocyte-colony stimulating factor aka G-CSF; dependence;

Q9511: T. H. Turner, *et al.* Identification of synergistic drug combinations using breast cancer patient-derived xenografts. Scientific Reports 2020;10(1):1493
Agents: YM-155 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Dose (5 mg/kg); Controls received mp w/ vehicle; animal info (female non-obese diabetic severe combined immunodeficient gamma (NSG) mice); dependence;

Q9470: J. Shi, *et al.* Restoring apoptosis dysregulation using survivin inhibitor in nasopharyngeal cancer. Head Neck 2020;42(5):913-923
Agents: YM-155 **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Dose (5 mg/kg/day); Controls received mp w/ vehicle; animal info (6-week-old female NOD scid gamma (NSG) mice); YM-155 aka survivin inhibitor; cancer (Nasopharyngeal carcinoma);

Q9429: S. A. Richman, *et al.* Ligand-Induced Degradation of a CAR Permits Reversible Remote Control of CAR T Cell Activity In Vitro and In Vivo. Molecular Therapy 2020;28(7):1600-1613
Agents: Aquashield 1 **Vehicle:** PBS; **Route:** SC; **Species:** MIce; **Pump:** 2001; **Duration:** 7 days;
ALZET Comments: Dose (1.3 mg/day); animal info (6-8-week-old female NSG mice); Aquashield 1 aka AS-1; cancer (Tumor);

Q10261: B. S. Moon, *et al.* Epigenetic modulator inhibition overcomes temozolomide chemoresistance and antagonizes tumor recurrence of glioblastoma. Journal of Clinical Investigation 2020;130(11):5782-5799
Agents: Temozolomide; Pyr-Pam **Vehicle:** Saline; **Route:** CSF/CNS (intrathecal); **Species:** Mice; **Pump:** 1004; **Duration:** 26 days;
ALZET Comments: Dose: TMZ (100 µL at 32.5 mg/mL); Pyr-Pam (100 µL at 7 mg/mL); Controls received mp w/ vehicle; animal info: immunocompromised (NSG) mice; Temozolomide aka (TMZ); Pyrvinium pamoate aka (Pyr-Pam); (Brain Infusion Kit 3, 1–3 mm); Alzet used; Brain coordinates ((coordinates: 2 mm anterior and 3 mm to the right of bregma at a depth of 3 mm); dental cement used; (sterile bone wax)cancer (Glioblastoma multiforme); incorrectly labelled pump as Model 1004D

Q8432: C. Dai, *et al.* Tacrolimus- and sirolimus-induced human beta cell dysfunction is reversible and preventable. JCI Insight 2020;5(1):
Agents: Tacrolimus **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Dose (0.25 mg/kg/day); Controls received mp w/ vehicle; animal info (Male NSG mice, age 12–18 weeks); Tacrolimus aka TAC; dependence;

Q7638: J. Enriquez Perez*, et al.* The effect of locally delivered cisplatin is dependent on an intact immune function in an experimental glioma model. Sci Rep 2019;9(1):5632
Agents: Cisplatin **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** 3 days;
ALZET Comments: Dose (1080, 120, or 12 ug/kg/day); 0.9% Saline used; animal info (C57BL/6, NSG, 8-10 weeks old, 18-21 weeks old); ALZET brain infusion kit 3 used; cyanoacrylate adhesive; cancer (Glioma);

Q7075: B. Li*, et al.* Epigenetic Regulation of CXCL12 Plays a Critical Role in Mediating Tumor Progression and the Immune Response In Osteosarcoma. Cancer Research 2018;78(14):3938-3953
Agents: AMD3100; AMG487 **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (nude); **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: animal info (Five-week-old female immunocompetent BALB/c mice and immunodeficient NOD-SCID IL2rgnull (NSG) mice); cancer (osteosarcoma);

Q6335: H. Zhou*, et al.* Combined inhibition of beta-catenin and Bcr-Abl synergistically targets tyrosine kinase inhibitor-resistant blast crisis chronic myeloid leukemia blasts and progenitors in vitro and in vivo. Leukemia 2017;31(10):2065-2074
Agents: Not Stated **Vehicle:** PRI-724; **Route:** Not Stated; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Dose (30 mg/kg per day); animal info (8-week-old female NSG mice); cancer (myeloid leukemia);

Q5357: F. Muller*, et al.* Paclitaxel synergizes with exposure time adjusted CD22-targeting immunotoxins against B-cell malignancies. ONCOTARGET 2017;1-12
Agents: HA22- PE24 recombinant immunotoxin **Vehicle:** Citrate buffer; **Route:** IP; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (6-8-week-old NSG mice); JeKo-1 xenograft model; Citrate buffer: 32 mM citrate, 0.65% Tween80, 5 mM EDTA; comparison of 3 times IV bolus injections vs mp; cancer (Mantle Cell Lymphoma); half-life: 15 minutes in mice (p. 4); To enable continuous drug delivery in vivo, the rIT-formulation buffer was optimized to ensure protein stability. Stability for 7-days with citrate buffer verified using WST-8 cell proliferation assay; "Continuous infusion substantially increased efficacy of LR compared to bolus dose administration." pg 4; "a well-tolerated total amount of 84 µg LR given by continuous infusion is substantially more active than the 120 µg LR given as three bolus doses QOD." (P. 5); Because rITs have a short plasma half-life in mice and men, blood levels fall quickly after a bolus dose; Dose (1 mg/ml); Immunotoxin plasma concentration was on average 45 ng/ml, correlating with an AUC of 350 ng x day/mlPlasma. This steady state plasma concentration was higher than the IC50 of any of the MCL cell lines tested.

Q6296: Kim J*, et al.* Targeting aldehyde dehydrogenase activity in head and neck squamous cell carcinoma with a novel small molecule inhibitor. Oncotarget 2017;8(32):52345-52356
Agents: Aldi-6 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 3 weeks;
ALZET Comments: Dose (24 mg/kg/day); Controls received mp w/ vehicle; animal info (Six-week-old male NSG mice); Aldi-6 is a novel small molecule ALDH inhibitor; cancer (carcinoma);

Q6099: C. Dai*, et al.* Age-dependent human beta cell proliferation induced by glucagon-like peptide 1 and calcineurin signaling. J Clin Invest 2017;127(10):3835-3844
Agents: Exendin-4; FK506 **Vehicle:** PBS; saline; **Route:** SC; **Species:** Mice (NSG), mice (NOD); **Pump:** 1004; 1002; **Duration:** 4 weeks; 2 weeks;
ALZET Comments: Dose (exendin-4: 24 nmol/kg/d; FK506: 0.25 mg/kg/d); Controls received mp w/ vehicle; animal info (NOD.Cg-PrkdcscidIl2rgtm1Wjl/Sz (NSG) mice); Multiple pumps per animal (2): some animals received a second pump containing FK506 after 2 weeks; diabetes;

Q6103: S. Y. Cho*, et al.* A Novel Combination Treatment Targeting BCL-XL and MCL1 for KRAS/BRAF-mutated and BCL2L1-amplified Colorectal Cancers. Mol Cancer Ther 2017;16(10):2178-2190
Agents: YM155 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 21 days;
ALZET Comments: 0.9% saline used; Controls received mp w/ vehicle; animal info (4-week-old NSG female mice); cancer (colorectal);

Q5115: Y. Zhao, *et al.* CBP/catenin antagonist safely eliminates drug-resistant leukemia-initiating cells. Oncogene 2016;35(28):3705-17
Agents: ICG-001 **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice (NSG); **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, NSG, 8-10 weeks old); cancer (chronic myelogenous leukemia K562); Dose (50 mg/kg/day);

Q6626: F. Muller, *et al.* Wide Variability in the Time Required for Immunotoxins to Kill B Lineage Acute Lymphoblastic Leukemia Cells: Implications for Trial Design. Clinical Cancer Research 2016;22(19):4913-4922
Agents: HA22 **Vehicle:** PBS; **Route:** IP; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days;
ALZET Comments: Dose (0.5 ug/hr); Controls received mp w/ vehicle; animal info (6- to 8-week-old NSG mice); HA22 aka CAT-8015 aka Moxetumomab pasudotox; cancer (leukemia);

Q4845: A. G. Kotini, *et al.* Escape Mutations, Ganciclovir Resistance, and Teratoma Formation in Human iPSCs Expressing an HSVtk Suicide Gene. MOLECULAR THERAPY 2016;5(**Agents:** Ganciclovir **Vehicle:** PBS; **Route:** SC; **Species:** Mice (NSG); **Pump:** 1007D; **Duration:** 2 weeks;
ALZET Comments: animal info (female, NSG, 8 weeks old); pumps replaced every week; cancer (teratoma); Dose (5 mg/kg/day);

Q5543: T. R. Jost, *et al.* Role of CXCR4-mediated bone marrow colonization in CNS infiltration by T cell acute lymphoblastic leukemia. J Leukoc Biol 2016;99(6):1077-87
Agents: AMD3100 **Vehicle:** PBS; **Route:** IP; **Species:** Mice (NSG); **Pump:** 1002, 1004; **Duration:** 14 days, 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Immunodeficient, non-obese, diabetic);

Q5344: U. Eskiocak, *et al.* Synergistic effects of ion transporter and MAP kinase pathway inhibitors in melanoma. Nat Commun 2016;7(12336
Agents: Digoxin **Vehicle:** Promethylcellulose, Tween80, DMSO; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (NSG mice); 0.5% used Promethylcellulose, 0.2% Tween80 used, 5% DMSO; cancer (xenograft models); dose-response (pg. 14); Dose (10 mg/kg/day);

Q5312: K. Caviness, *et al.* Complex Interplay of the UL136 Isoforms Balances Cytomegalovirus Replication and Latency. MBio 2016;7(2):e01986
Agents: Granulocyte-colony stimulating factor; AMD3100 **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (NOD/SCID); **Pump:** 1007D; **Duration:** 1 week;
ALZET Comments: animal info (NOD-scid humanized (huNSG) mice); gene therapy; immunology; Engraftment of human CD45+ cells; viral persistence; Dose (300mg/ml Colony-stim; 125 ug AMD3100);

Q4644: M. Wermke, *et al.* RNAi profiling of primary human AML cells identifies ROCK1 as a therapeutic target and nominates fasudil as an antileukemic drug. Blood 2015;125(3760-3768
Agents: Fasudil **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NSG); **Pump:** Not Stated; **Duration:** 2 weeks;
ALZET Comments: Animal info (female, NSG, 4-6 weeks old); cancer (acute myeloid leukemia); immunology;

Q3475: E. J. Gang, *et al.* Small-molecule inhibition of CBP/catenin interactions eliminates drug-resistant clones in acute lymphoblastic leukemia. ONCOGENE 2014;33(2169-2178
Agents: ICG-001 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NSG); **Pump:** 1004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ saline; animal info (Survivin-floxed, NSG); cancer (leukemia); "ICG-001 was delivered via subcutaneous micro-osmotic pump to ensure stable plasma dosing levels" pg 2177; ICG-001 is a small-molecule modulator of Wnt/catenin signaling;

Q3421: A. Bouchekioua*, et al.* JAK3 deregulation by activating mutations confers invasive growth advantage in extranodal nasal-type natural killer cell lymphoma. LEUKEMIA 2014;28(2):338-348
Agents: CP-690550 **Vehicle:** PEG 300; saline; **Route:** SC; **Species:** Mice (NSG); **Pump:** 2002; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, NSG, 6-8 weeks old); 50% PEG 300 used; cancer (extranodal, nasal-type natural killer lymphoma); CP-690550 is a JAK3 inhibitor; enzyme inhibitor (JAK);

Q2663: E. Salomonnson*, et al.* Imaging CXCL12-CXCR4 Signaling in Ovarian Cancer Therapy. PLoS One 2013;8(1):U82-U91
Agents: AMD 3100 **Vehicle:** NaCl; **Route:** SC; **Species:** Mice (NSG); **Pump:** Not Stated; **Duration:** 2 weeks;
ALZET Comments: Control animals received mp w/ vehicle; animal info (NOD/SCID, IL2r gamma -/-)

Q3100: D. S. Krause*, et al.* Differential regulation of myeloid leukemias by the bone marrow microenvironment. Nature Medicine 2013;19(11):1513-+
Agents: Parathyroid hormone, human (1-34) **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice (NSG); **Pump:** Not Stated; **Duration:** 4 weeks; 14 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (NSG; BALB/c); pumps replaced every 2 weeks; cancer (leukemia); immunology; peptides

Q3065: P. Cravedi*, et al.* Immune Cell-Derived C3a and C5a Costimulate Human T Cell Alloimmunity. American Journal of Transplantation 2013;13(10):2530-2539
Agents: Peptide, C5a receptor antagonist **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice (NSG); **Pump:** Not Stated; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, NOD/SCID gamma, 6-8 weeks old); immunology; C5a receptor antagonist aka C5aRA;

Q3059: V. Chandramohan*, et al.* Construction of an Immunotoxin, D2C7-(scdsFv)-PE38KDEL, Targeting EGFRwt and EGFRvIII for Brain Tumor Therapy. Clinical Cancer Research 2013;19(17):4717-4727
Agents: Immunotoxin, D2C7-(scdsFv)-PE38KDEL **Vehicle:** PBS-HSA; **Route:** CSF/CNS; **Species:** Mice (NSG); **Pump:** Not Stated; **Duration:** 3 days; 5 days;
ALZET Comments: Controls received mp w/ vehicle or P588-(scdsFv)-PE38KDEL; animal info (male, NOD SCID gamma, 30 g, 8-12 weeks old); cancer (gliomas); toxicology; immunology; "This method of continuous intracranial delivery will aid in achieving elevated concentrations and uniform distribution of D2C7-(scdsFv)-PE38KDEL at the tumor site, which would be expected to optimize its antitumor activity. By this method, we were able to achieve significant increase in survival at a very low dose of 1 mg of D2C7-(scdsFv)-PE38KDEL" pg.4725;

Q7211: V. Chandramohan*, et al.* Recombinant anti-podoplanin (NZ-1) immunotoxin for the treatment of malignant brain tumors. Int J Cancer 2013;132(10):2339-48
Agents: Immunotoxin, NZ-1-(scdsFv)-PE38KDELImmunotoxin, P588-(scdsFv)-PE38KDEL **Vehicle:** PBS, human serum albumin; **Route:** CSF/CNS (intratumoral); **Species:** Mice (NSG); **Pump:** 1003D; **Duration:** 3 days;
ALZET Comments: 0.2% PBS-HSA used; Controls received mp w/ vehicle; animal info (Male NOD scid gamma (NSG) mice (20–30 g; 12 weeks)); cancer (glioblastoma, medulloblastoma);

Q2314: S. L. Maude*, et al.* Targeting JAK1/2 and mTOR in murine xenograft models of Ph-like acute lymphoblastic leukemia. Blood 2012;120(17):3510-3518
Agents: Ruxolitinib **Vehicle:** Dimethylacetamide; propylene glycol; **Route:** SC; **Species:** Mice (NSG); **Pump:** Not Stated; **Duration:** 3-4 weeks;
ALZET Comments: Control animals received mp w/ vehicle; animal info (NOD SCID, nonobese); ruxolitinib also known as INCB018424; stress/adverse effects "One ruxolitinib-treated mouse... experienced a wound dehiscence at the subcutaneous pump surgical site" pg 3512; cancer (leukemia); chemotherapeutic; 40% DMA used; 60% propylene glycol used;

Q1299: J. Rowe, *et al.* Compounds that target host cell proteins prevent varicella-zoster virus replication in culture, ex vivo, and in SCID-Hu mice. Antonie van Leeuwenhoek Journal of Microbiology 2010;86(3):276-285
Agents: Phosphonoacetic acid; Roscovitine **Vehicle:** DMSO; **Route:** SC; **Species:** Mice (NSG); **Pump:** 2001; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (SCID-Hu, 7-8 wks old); enzyme inhibitor (cyclin-dependent kinase); 50% DMSO used; bioluminescence (IVIS 200); antiviral

Q0172: B. Maier, *et al.* The unique hypusine modification of eIF5A promotes islet beta cell inflammation and dysfunction in mice. Journal of Clinical Investigation 2010;120(6):2156-2170
Agents: GC7 **Vehicle:** Saline; **Route:** SC; **Species:** Mice (NSG); **Pump:** Not Stated; **Duration:** 8 days;
ALZET Comments: Controls received mp w/ vehicle; enzyme inhibitor (deoxyhypusine synthase); animal info (male, C57BL/6J, NOD/SCID/Il2rg-null, 10 weeks old); comparison of IP injections vs. mp; endocrinology; agent also known as N1-guanyl-1,7-diaminoheptane

NOD/SCID Mice

Q10274: S. Hegde, *et al.* Inhibition of the RacGEF VAV3 by the small molecule IODVA1 impedes RAC signaling and overcomes resistance to tyrosine kinase inhibition in acute lymphoblastic leukemia. Leukemia 2022;36(3):637-647
Agents: IODVA1; Imatinib **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Vav3-deficient mice and Rac1Δ/Δ+Rac2-deficient mice; C57Bl/10 (females, 8–16 weeks old) and NSG (NOD/SCID/IL2RG-/- males and females, 8–14 weeks old); IODVA1 aka 2-guanidinobenzimidazole derivative with anti-tumorigenic properties; cancer (leukemia)

Q10143: K. E. Chen, *et al.* Prolactin enhances T regulatory cell promotion of breast cancer through the long form prolactin receptor. Translational Oncology 2021;14(11):101195
Agents: SMO; LFPRLR SMO, mice; LFPRLR SMO, human **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice (NOD/SCID);
Pump: 2004; **Duration:** 28 days;
ALZET Comments: Dose: (100 pmoles/h); Controls received mp w/ vehicle; animal info:8-week old Foxp3+EGFP Balb/c or NOD-SCID mice; pumps replaced (as needed); SMO aka splice modulating oligomer; LFPRLR aka long form prolactin receptor; cancer (Breast cancer);

Q7957: Z. Chen, *et al.* USP9X deubiquitinates ALDH1A3 and maintains mesenchymal identity in glioblastoma stem cells. J Clin Invest 2019;129(5):2043-2055
Agents: WP1130 **Vehicle:** Not stated; **Route:** CSF/CNS (caudate nucleus); **Species:** Mice; **Pump:** Not stated; **Duration:** 7 days;
ALZET Comments: Dose (25 mg/kg at 0.5 µl/h); Controls received mp w/ vehicle; animal info (NOD/SCID); WP1130 is a USP9X inhibitor; enzyme inhibitor (USP9X); Brain coordinates (2 mm anterior, 2 mm lateral, 3 mm depth from the dura); Cannula placement verified via MRI after removal of the pump system.; cancer (glioblastoma); MRI; vehicle use stated but identity not listed in paper.; Therapeutic indication (promotes robust polyubiquitylation of ALDH1A3, which results in a marked reduction in ALDH1A3 protein levels and functional activity, leading to attenuation of the tumor-initiating ability of MES GSCs);

Q9001: K. Zhang, *et al.* Targeting histone methyltransferase G9a inhibits growth and Wnt signaling pathway by epigenetically regulating HP1alpha and APC2 gene expression in non-small cell lung cancer. Molecular Cancer 2018;17(1):153
Agents: UNC0638 **Vehicle:** PBS; **Route:** IP; **Species:** Mice; **Pump:** Not Stated; **Duration:** 28 days;
ALZET Comments: Dose (5, 10 mg/ml at 0.25 µl/h); Controls received mp w/ vehicle; animal info (6-8 weeks, NOD/SCID/IL2Rgamma null, 24-27g); UNC0638 is a selective G9a inhibitor; cancer (lung); pump model not stated but listed as 100 µl capacity with 0.25 µl/h rate; Therapeutic indication (Targeting G9a by the specific inhibitor UNC0638 down-regulates HP1alpha, and epigenetically restores expression of APC2 and other tumor suppressors through promoter demethylation, and then significantly inhibits Wnt signaling pathways and growth of non-small cell lung cancer;

Q7245: M. Tsoli, *et al.* Dual targeting of mitochondrial function and mTOR pathway as a therapeutic strategy for diffuse intrinsic pontine glioma. Oncotarget 2018;9(7541-7556
Agents: Temsirolimus; Phenylarsonous acid, 4-(N-(S-penicillaminylacetyl)-amino) **Vehicle:** Saline; **Route:** SC, IP; **Species:** Mice; **Pump:** 2002; **Duration:** 4 weeks;
ALZET Comments: Dose (PEMAO-3 mg/kg/day, Temsirolimus-10 mg/kg/day and 5 mg/kg/day); Controls received mp w/ vehicle; animal info (5 week-old, female, NOD/SCID); pumps replaced every 2 weeks;
4-(N-(S-penicillaminylacetyl)-amino)phenylarsonous acid aka Anti-cancer compound (PENAO); enzyme inhibitor (PENAO Inhibits adenine nucleotide translocase, Temsirolimus inhibits mTOR; cancer (Glioma);

Q6474: Y. Kojima, *et al.* YM155 induces apoptosis through proteasome-dependent degradation of MCL-1 in primary effusion lymphoma. Pharmacol Res 2017;120(242-251
Agents: YM155 **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 20 days;
ALZET Comments: Dose (5 mg/kg/day); Controls received mp w/ vehicle; animal info (7-week-old male NOD/SCID IL-2RYc−/−); cancer (Primary effusion lymphoma);

Q5312: K. Caviness, *et al.* Complex Interplay of the UL136 Isoforms Balances Cytomegalovirus Replication and Latency. MBio 2016;7(2):e01986
Agents: Granulocyte-colony stimulating factor; AMD310 **Route:** IP; **Species:** Mice (NOD/SCID); **Pump:** 1007D; **Duration:** 1 week;
ALZET Comments: animal info (NOD-scid humanized (huNSG) mice); gene therapy; immunology; Engraftment of human CD45+ cells; viral persistence; Dose (300mg/ml Colony-stim; 125 ug AMD3100);

Q4662: T. Yonezawa, *et al.* Anti-metastatic outcome of isoform-specific prolactin receptor targeting in breast cancer. Cancer Letters 2015;366(84-92
Agents: Prolactin; oligomer, splice-modulating **Route:** SC; **Species:** Mice (NOD/SCID); **Duration:** 5, 25, 40 days
ALZET Comments: Controls received mp w/ vehicle; animal info (female, BALB/cJ or NOD SCID, 8-9 weeks old); functionality of mp verified by plasma levels; pumps replaced every 28 days; cancer (breast); dose-response (pg 87);

Q4093: F. P. Seib, *et al.* Tissue engineering a surrogate niche for metastatic cancer cells. Biomaterials 2015;51(313-319
Agents: Stromal cell-derived factor 1; receptor activator of nuclear factor kappa-B ligand **Vehicle:** Not Stated; **Route:** Bone; **Species:** Mice (NOD/SCID; nude); **Pump:** 1004; **Duration:** 30 days;
ALZET Comments: Controls received mp w/ PBS; animal info (female, NOD/SCID, 6-10 weeks old; male, athymic nude, 6-10 weeks old); cancer (breast; prostate);

Q4564: L. A. Pitt, *et al.* CXCL12-Producing Vascular Endothelial Niches Control Acute T Cell Leukemia Maintenance. Cancer Cell 2015;27(755-768
Agents: AMD3465 **Vehicle:** PBS; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** 2002; **Duration:** 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, C57BL6, 6-8 weeks old); cancer (leukemia);

Q5230: A. W. Mao, *et al.* Application of chemokine receptor antagonist with stents reduces local inflammation and suppresses cancer growth. Tumour Biol 2015;36(11):8637-43
Agents: AMD3100 **Vehicle:** PBS; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** 4 weeks;
ALZET Comments: Controls received mp w/ saline; animal info (NOD/SCID); cancer (pancreatic); dose-response (pg 8640); enzyme inhibitor (SDF-1); 3 % isoflurane used; dose: 2 mg

R0348: M. Malhotra, *et al.* RNAi therapeutics for brain cancer: current advancements in RNAi delivery strategies. Mol Biosyst 2015;11(10):2635-57
Agents: Nanoparticles; RNAi **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice (nude); Mice (NOD/SCID);
ALZET Comments: cancer (brain tumors); Mechanisms of RNAi delivery to brain tumors; adenovirus viral system used for delivery; SNB19 cells used for in vitro model; nanoparticles used for delivery; Therapeutic indication (brain cancer);

Q4150: D. Vecchio, *et al.* Predictability, efficacy and safety of radiosensitization of glioblastoma- initiating cells by the ATM inhibitor KU- 60019. International Journal of Cancer 2014;135(479-491
Agents: KU-60019 **Vehicle:** Ethanol; **Route:** CSF/CNS; **Species:** Mice (NOD/SCID); **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (NOD/SCID); 10% ethanol used; cancer (gliomablastoma); stress/adverse reaction: (see pg. 486); KU-60019 is a specific ATM inhibitor;

Q3525: W. Ju, *et al.* Combination of 9-aminoacridine with Campath-1H provides effective therapy for a murine model of adult T-cell leukemia. Retrovirology 2014;11(U1-U11
Agents: Aminoacridine, 9- **Vehicle:** PEG 300; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle or no mp or cancer; 10% PEG used; cancer (leukemia MET-1);

Q3522: Y. Jiao, *et al.* Elevated Mouse Hepatic Betatrophin Expression Does Not Increase Human beta-Cell Replication in the Transplant Setting. Diabetes 2014;63(1283-1288
Agents: S961 **Vehicle:** Water; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** 2001; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Nod-SCID, 8 weeks old); diabetes; S961 is an insulin receptor antagonist; infusion causes hyperglycemia in NOD/SCID

Q2594: R. Welschinger, *et al.* Plerixafor (AMD3100) induces prolonged mobilization of acute lymphoblastic leukemia cells and increases the proportion of cycling cells in the blood in mice. Experimental Hematology 2013;41(3):293-302
Agents: AMD 3100 **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** 3 weeks;
ALZET Comments: Control animals received mp w/ vehicle; animal info (NOD/SCID)

Q3135: J. D. Tian, *et al.* gamma-Aminobutyric Acid Regulates Both the Survival and Replication of Human beta-Cells. Diabetes 2013;62(11):3760-3765
Agents: Muscimol **Vehicle:** PBS; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, C57BL6, 10 weeks old; NOD/SCID); diabetes

Q3034: N. Suzuki, *et al.* Generation of Engraftable Hematopoietic Stem Cells From Induced Pluripotent Stem Cells by Way of Teratoma Formation. MOLECULAR THERAPY 2013;21(7):1424-1431
Agents: Stem cell factor, human recomb.; **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NOD/SCID); **Duration:** 2 weeks;
ALZET Comments: Animal info (NOD/SCID (male, 5-7 weeks old); KSN/Slc (4-5 weeks old)); immunology; peptides

Q2663: E. Salomonnson, *et al.* Imaging CXCL12-CXCR4 Signaling in Ovarian Cancer Therapy. PLoS One 2013;8(1):U82-U91
Agents: AMD 3100 **Vehicle:** NaCl; **Route:** SC; **Species:** Mice (NSG); **Pump:** Not Stated; **Duration:** 2 weeks;
ALZET Comments: Control animals received mp w/ vehicle; animal info (NOD/SCID, IL2r gamma -/-)

Q3101: C. M. Krejsa, *et al.* Interleukin-21 Enhances Rituximab Activity in a Cynomolgus Monkey Model of B Cell Depletion and in Mouse B Cell Lymphoma Models. PLoS One 2013;8(6):U875-U888
Agents: Interleukin-12, recomb. human **Vehicle:** Saline; **Route:** SC; **Species:** Mice (SCID; NOD/SCID); **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Animal info (female, SCID and NOD/SCID, 8-10 weeks old); cancer (Lymphoma);

Q3065: P. Cravedi, *et al.* Immune Cell-Derived C3a and C5a Costimulate Human T Cell Alloimmunity. American Journal of Transplantation 2013;13(10):2530-2539
Agents: Peptide, C5a receptor antagonist **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice (NSG); **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, NOD/SCID gamma, 6-8 weeks old); immunology; C5a receptor antagonist aka C5aRA;

Q2078: G. Faleo, *et al.* Prevention of Autoimmune Diabetes and Induction of beta-Cell Proliferation in NOD Mice by Hyperbaric Oxygen Therapy. Diabetes 2012;61(7):1769-1778
Agents: Exenatide **Vehicle:** Not Stated; **Route:** SC; IP; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** 2 weeks;
ALZET Comments: Controls received mp without hyperbaric oxygen therapy; animal info (NOD/MrkTac, NOD.SCID); hyperbaric oxygen therapy 100% (HOT-100%); diabetes

Q1832: A. Dubrovska*, et al.* CXCR4 Expression in Prostate Cancer Progenitor Cells. PLoS One 2012;7(2):U454-U466
Agents: AMD 3100 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: Animal info (NOD.CB17-Prkdc, 5-8 wks old); 0.5 ul/hr pump used; cancer

Q2109: C. Westwell-Roper*, et al.* IL-1 Blockade Attenuates Islet Amyloid Polypeptide-Induced Proinflammatory Cytokine Release and Pancreatic Islet Graft Dysfunction. Journal of Immunology 2011;187(5):2755-2765
Agents: Anakinra **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** 8 weeks;
ALZET Comments: Controls received mp w/ saline; animal info (11 wks old, NOD/SCID); pumps replaced every 2 weeks; immunology

Q1234: L. Mirandola*, et al.* Galectin-3C Inhibits Tumor Growth and Increases the Anticancer Activity of Bortezomib in a Murine Model of Human Multiple Myeloma. PLoS One 2011;6(7):U173-U186
Agents: Galectin-3C **Vehicle:** PBS; **Route:** IP; IV; **Species:** Mice (NOD/SCID); **Pump:** 2002; **Duration:** 16 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, 6 wks old, NOD/SCID); cancer (multiple myeloma); half-life, 3 hours (p. e21811); "Our data suggest that sustained delivery may be preferable (over injections intramuscularly twice daily) for maximal response to treatment" pg e21811; galectin-3C is an N-terminally truncated form of galectin-3

Q1055: A. Erlandsson*, et al.* Immunosuppression promotes endogenous neural stem and progenitor cell migration and tissue regeneration after ischemic injury. Experimental Neurology 2011;230(1):48-57
Agents: Epidermal growth factor, recomb. human; erythropoietin; cyclosporine A **Vehicle:** Not Stated; **Route:** CSF/CNS; SC;
Species: Mice (NOD/SCID); **Pump:** 1007D; **Duration:** Not Stated;
ALZET Comments: Animal info (male, C57/BL6, 8-10 wks old); pumps replaced after 7 days; ALZET brain infusion kit 3 used

Q0172: B. Maier*, et al.* The unique hypusine modification of eIF5A promotes islet beta cell inflammation and dysfunction in mice. Journal of Clinical Investigation 2010;120(6):2156-2170
Agents: GC7 **Vehicle:** Saline; **Route:** SC; **Species:** Mice (NSG); **Pump:** Not Stated; **Duration:** 8 days;
ALZET Comments: Controls received mp w/ vehicle; enzyme inhibitor (deoxyhypusine synthase); animal info (male, C57BL/6J, NOD/SCID/Il2rg-null, 10 weeks old); comparison of IP injections vs. mp; endocrinology; agent also known as N1-guanyl-1,7-diaminoheptane

Q0606: T. Kato*, et al.* Efficient delivery of liposome-mediated MGMT-siRNA reinforces the cytotoxity of temozolomide in GBM-initiating cells. Gene Therapy 2010;17(11):1363-1371
Agents: RNA, small interfering; **Species:** Mice (NOD/SCID); **Pump:** 1007D; **Duration:** 1 week;
ALZET Comments: Animal info (6 wks old, female NOD-SCID); MGMT-siRNA/LipoTrust complex; O6-methylguanine- DNA methyltransferase; incorrectly stated 1003D pump; cancer

Q0673: C. L. Roland*, et al.* Cytokine Levels Correlate with Immune Cell Infiltration after Anti-VEGF Therapy in Preclinical Mouse Models of Breast Cancer. PLoS One 2009;4(11):U41-U53
Agents: GU81 **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** 1, 3, 4 weeks;
ALZET Comments: Controls received IP IgG injection; animal info (6-8 wks old, female, NOD/SCID, BALB/c); cancer (breast); chemotherapeutic

P9704: S. Kaneko*, et al.* IL-7 and IL-15 allow the generation of suicide gene-modified alloreactive self-renewing central memory human T lymphocytes. Blood 2009;113(5):1006-1015
Agents: Ganciclovir **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** 7 days;
ALZET Comments: Controls received mp w/PBS; animal info (6-8 wks old, female, NOD/Scid); "ALZET pumps...were implanted subcutaneously to ensure drug release at a constant rate" pg 1008

P9279: L. U. W. Mueller*, et al.* Rac guanosine triphosphatases represent a potential target in AML. Leukemia 2008;22(9):1803-1806
Agents: NSC23766 **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice (NOD/SCID); **Pump:** Not Stated; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ PBS; pumps replaced after 14 days; enzyme inhibitor (Rac GTPas); cancer (acute myeloid leukemia); multiple pumps per animal (2); animal info (NOD/SCID, irradiated);

P8712: G. P. Vasvari, *et al.* Combination of thalidomide and cisplatin in an head and neck squamous cell carcinomas model results in an enhanced antiangiogenic activity in vitro and in vivo. International Journal of Cancer 2007;121(8):1697-1704
Agents: Cisplatin **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (NOD/SCID); **Pump:** 1002; **Duration:** 4 weeks;
ALZET Comments: Controls received no treatment; pumps replaced after 2 weeks; no stress (see pg. 1699); cancer (head/neck squamous cell carcinoma); animal info (female, NOD/SCID, 6-8 wks old, 15-25g)

P8372: H. Bonig, *et al.* Hematopoietic progenitor cells (HPC) from mobilized peripheral blood display enhanced migration and marrow homing compared to steady-state bone marrow HPC. Experimental Hematology 2007;35(2):326-334
Agents: Granulocyte-colony stimulating factor, recomb. human **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** 2001; **Duration:** 5 days;
ALZET Comments: Peptides; hematology

P7936: A. Bondanza, *et al.* Suicide gene therapy of graft-versus-host disease induced by central memory human T lymphocytes. Blood 2006;107(5):1828-1836
Agents: Ganciclovir **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** 2001; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ saline; animal info (female, NOD/SCID, 6-8 weeks old, GvHD); gene therapy

P4297: E. L. Kreklau, *et al.* Prolonged inhibition of O^6-methylguanine DNA methyltransferase in human tumor cells by O^6-benzylguanine in vitro and in vivo. Journal of Pharmacology and Experimental Therapeutics 1999;291(3):1269-1275
Agents: Benzylguanine, 06- **Vehicle:** PEG 400; PBS; **Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** 1003D; **Duration:** 24 hours;
ALZET Comments: Controls received mp w/ vehicle; cancer; "The four groups were comprised of control animals and those implanted s.c. w/ one, two, three Alzet pumps... per mouse" (p. 1270); enzyme inhibitor;

SCID Mice (2016-Present)

Q7082: Gartung A, *et al.* Suppression of chemotherapy-induced cytokine/lipid mediator surge and ovarian cancer by a dual COX-2/sEH inhibitor. Proceedings of the National Academy of Sciences 2019;116(5):1698-1703
Agents: PTUPB **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (SCID); **Pump:** Not Stated; **Duration:** 4 weeks;
ALZET Comments: Dose (30 mg/kg/d); animal info (6-wk-old female C57BL/6 or SCID mice); PTUPB aka 4-(5-phenyl-3-{3-[3-(4-trifluoromethyl-phenyl)-ureido]-propyl}-pyrazol-1-yl) benzenesulfonamide is a dual COX-2/sEH inhibitor; enzyme inhibitor (cyclooxygenase-2 and soluble epoxide hydrolase); cancer (ovarian);

Q6985: E. Binda, *et al.* Drug Delivery in an Orthotopic Tumor Stem Cell-Based Model of Human Glioblastoma. Methods Mol Biol 2019;1869(197-205
Agents: Not Stated **Vehicle:** Saline; **Route:** CSF/CNS (nucleus striatum); **Species:** Mice (SCID); **Duration:** 2 weeks;
ALZET Comments: ALZET brain infusion kit 3 used; cyanoacrylate adhesive; cancer (glioblastoma multiforme); good method; Methods paper describing local intracranial delivery of drugs by osmotic mini-pumps.

Q7306: M. L. Sulciner, *et al.* Resolvins suppress tumor growth and enhance cancer therapy. J Exp Med 2018;215(1):115-140
Agents: Resolvin D1, Resolvin D2, Resolvin E1, Annexin V recombinant protein, **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (SCID); **Pump:** pump model not stated; **Duration:** 28 days, 2 and 3 months;
ALZET Comments: Dose: Resolvins (15 ng/d), Annexin V recombinant protein (4 µg/kg/d); Controls received mp w/ vehicle; animal info (C57BL/6J, SCID); pumps replaced after 14 days for 28 day, every 28 days for 2/3 month studies; cancer (prostate);

Q7079: B. Kuhn, *et al.* Anti-inflammatory nitro-fatty acids suppress tumor growth by triggering mitochondrial dysfunction and activation of the intrinsic apoptotic pathway in colorectal cancer cells. Biochemical Pharmacology 2018;155(48-60
Agents: Nitrooleate, 9- **Vehicle:** PEG 400, ethanol; **Route:** SC; **Species:** Mice (SCID); **Pump:** 2001; **Duration:** 5 days;
ALZET Comments: Dose (16 mg/kg/day); 10% ethanol and 90% PEG400 used; animal info (5–6 week old SCID mice); pumps replaced after 7 days; 9-NOA is a Nitro-fatty acids; cancer (colorectal); "we have chosen a continuous application of NFAs via ALZET® osmotic pumps giving the advantage of a reduction of interindividual variations in mice due to a diverse oral chow consumption behavior and therefore kept the number of animals needed as low as possible." pg. 57; Due to poor solubility of 9-NOA and limited pump size in consequence of the weight of the mice, pumps were surgically removed and replaced with new ones on day 8 of the experiment;

Q5930: J. Yang, *et al.* Targeting Histone Demethylases in MYC-Driven Neuroblastomas with Ciclopirox. Cancer Research 2017;77(17):4626-4638
Agents: Ciclopirox **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (SCID); **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; cancer (neuroblastoma);"Because of the short half-life of CPX in mice, we first chose to deliver the drug via a subcutaneously implanted, continuous release pump" pg 9; Therapeutic indication (neuroblastoma); resultant plasma level (calculated 2.5 ;umol/L);

Q5719: X. Yan, *et al.* YM155 Down-Regulates Survivin and Induces P53 Up-Regulated Modulator of Apoptosis (PUMA)-Dependent in Oral Squamous Cell Carcinoma Cells. Medical Science Monitor 2017;23(1963-1972
Agents: YM155 **Vehicle:** Saline; **Route:** SC; **Species:** Mice (SCID); **Pump:** 1003D; **Duration:** 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, SCID, 4-6 weeks old); cancer (oral squamous cell carcinoma, SCC9); xenograft model; Pumps infused for 3 days per week for two weeks; Therapeutic indication (oral squamous cell carcinoma); Dose (50 mg/kg);

Q6651: G. W. Rhyasen, *et al.* AZD5153: A Novel Bivalent BET Bromodomain Inhibitor Highly Active against Hematologic Malignancies. Mol Cancer Ther 2016;15(11):2563-2574
Agents: AZD5153 **Vehicle:** DMSO; Cyclodextrin, 2-hydroxypropyl-b-; water; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days
ALZET Comments: Dose (6.4 mg/kg/wk or 12.8 mg/kg/wk); 20% DMSO; 60% v/v HP-B-CD in water used; animal info (Female CB17 SCID and SCID beige mice); enzyme inhibitor (BRD4); "We enhanced these findings by using mini-pump drug infusion, which eliminates PK fluctuations and provides consistent target inhibition. Compared with daily oral dosing, less than one fifth of AZD5153 was needed per week via mini-pump to achieve comparable efficacy." pg. 2573 ; Industry authored (AstraZeneca.);

Q6169: K. B. Lorvik, *et al.* Adoptive Transfer of Tumor-Specific Th2 Cells Eradicates Tumors by Triggering an In Situ Inflammatory Immune Response. Cancer Research 2016;76(23):6864-6876
Agents: S-(2-boronoethyl)-L-cysteine **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (SCID); **Duration:** 14 days;
ALZET Comments: Dose (mg/kg/d); Controls received mp w/ vehicle; animal info (TCR-transgenic SCID mice);

Q5866: K. M. Henkels, *et al.* PLD-Specific Small-Molecule Inhibitors Decrease Tumor-Associated Macrophages and Neutrophils Infiltration in Breast Tumors and Lung and Liver Metastases. PLoS One 2016;11(11):e0166553
Agents: FIPI, VU0155072-2 **Vehicle:** DMSO; **Route:** SC; **Species:** Mice (SCID); **Pump:** 1004; **Duration:** 4-5 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (8 weeks old)50% DMSO used;
cancer (breast);half-life FIPI: 5.5 hours, 18% bioavailability (p.4);post op. care (Carprofen (5 mg/kg) administered for analgesia);"silencing the PLD2 gene in cancer cells or implanting mice with micro-osmotic (Alzet) pumps containing the PLD small-molecule inhibitors FIPI and VU0155072-2 resulted in smaller tumors and fewer lung metastases" pg. 20; VU0155072-2 aka NOPT; FIPI aka 5-fluoro-2-indolyl des-chlorohalopemide; enzyme inhibitor (Phospholipase D- small-molecule inhibitors); Therapeutic indication (Breast cancer); Dose (1.8 mg/kg/day);

Q5634: W. Chen. Targeting XBP1-mediated β-catenin expression associated with bladder cancer with newly synthetic Oridonin analogues. Oncotarget 2016;7(35):56842-56854
Agents: CYD 6-17 **Vehicle:** DMSO; **Route:** SC; **Species:** Mice (SCID); **Pump: Duration:** 7 days;
ALZET Comments: Controls received mp w/ vehicle; cancer (Bladder); immunology; Therapeutic indication (Bladder Cancer); Dose (30 mg/kg);

Nude Mice (2017-Present)

Q10983: W. Qiu, *et al.* USP10 deubiquitinates RUNX1 and promotes proneural-to-mesenchymal transition in glioblastoma. Cell Death and Disease 2023;14(3):207
Agents: Spautin-1 **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Strain:** Nude;
ALZET Comments: Dose (20 mg/kg); animal info: male nude mice (5-6 weeks of age); Spautin-1 is a selective inhibitor of deubiquitinating enzymes USP10 and USP13; enzyme inhibitor; cancer (Glioblastoma);

Q10855: S. Yuan*, et al.* Ras Drives Malignancy Through Stem Cell Crosstalk With the Microenvironment. Nature 2022;612(7940):555-563
Agents: Leptin; VEGFA; Rapamycin **Vehicle:** PBS; DMSO; **Route:** SC; **Species:** Mice (nude); **Duration:** 4 weeks;
ALZET Comments: Dose: Leptin (2 mg/ml; 0.5 mg/ml); 0.5 mg/ml SMLA; VEGFA 50ug/ml; 10 mM rapamycin; 10% DMSO used; Controls received mp w/ vehicle; animal info (Nude mice); cancer (Squamous cell carcinomas);

Q10495: N. Ben-Jonathan*, et al.* Dopamine Receptors in Breast Cancer: Prevalence, Signaling, and Therapeutic Applications. Critical Reviews TM in Oncogenesis 2022;27(2):51-71
Agents: Fenoldopam **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 3 weeks; 7 days;
ALZET Comments: animal info: athymic nude mice; Fenoldopam aka (Fen) is a D1R agonist; fluorescence imaging; cancer (Breast cancer); xenograft

Q10835: B. Xu*, et al.* An Oncolytic Virus Expressing a Full-Length Antibody Enhances Antitumor Innate Immune Response to Glioblastoma. Nature Communications 2021;12(1):5908
Agents: aCD47-G1 **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** 72 hours;
ALZET Comments: Dose: 24 ug/day; Controls received mp w/ vehicle; animal info: Six- to eight-week-old female athymic nude mice CT2A GBM model; ALZET brain infusion kit 3 used; Brain coordinates (2mm lateral and 1mm anterior to bregma at a depth of 3 mm); immunology;

Q10056: I. Peregrin-Alvarez*, et al.* Anti-Mullerian Hormone (AMH) regulates BRCA1 and BRCA2 gene expression after ovarian cortex transplantation. Gynecological Endocrinology 2021;37(4):349-352
Agents: Antibody, anti-Mullerian hormone **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice; **Pump:** Not Stated; **Duration:** 7 days;
ALZET Comments: Dose (1.23 mcg/day); Controls received mp w/ vehicle; animal info (ovariectomized NU/J mice or nude mice); anti-Mullerian hormone Antibody aka rAMH; replacement therapy (anti-Mullerian hormone);

Q9223: L. H. Feng*, et al.* Irbesartan inhibits metastasis by interrupting the adherence of tumor cell to endothelial cell induced by angiotensin II in hepatocellular carcinoma. Annals of Translational Medicine 2021;9(3):207
Agents: Angiotensin II **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Dose (100 ng/kg/min); animal info (5-week-old male BALB/c nude mice, 18–20 g); cancer (Carcinoma);

Q9855: B. Zhang*, et al.* The stress hormone norepinephrine promotes tumor progression through beta2-adrenoreceptors in oral cancer. Archives of Oral Biology 2020;113(104712
Agents: Norepinephrine; ICI-118,551 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 3 weeks;
ALZET Comments: Dose (10 mg /kg/day); Controls received mp w/ vehicle; animal info (4-week-old female nude mice); Norepinephrine aka NE; cancer (Tumor Growth);

Q9921: T. Yamamoto*, et al.* BRD4 promotes metastatic potential in oral squamous cell carcinoma through the epigenetic regulation of the MMP2 gene. British Journal of Cancer 2020;123(4):580-590
Agents: JQ1 **Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Pump:** Not Stated; **Duration:** 2 weeks;
ALZET Comments: Dose (20 mg/kg/day); Controls received mp w/ vehicle; animal info (Female BALB/c-nu/nu nude mice (4–6 weeks old)); JQ1 aka Bromodomain containing 4 inhibitor; cancer (Squamous cell carcinoma);

Q9534: X. Wang*, et al.* The synergistic inhibitory effect of combining therapies targeting EGFR and mitochondria in sarcomas. Oncotarget 2020;
Agents: Phenylarsonous acid, 4-(N-(S-penicillaminylacetyl)amino)- **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 20 days;
ALZET Comments: Dose (3 mg/kg/day); Controls received mp w/ vehicle; animal info (Ten-week Balb/c nude mice); 4-(N-(S-penicillaminylacetyl)amino)-phenylarsonous acid aka PENAO; cancer (Sarcoma);

Q8512: F. Gourgue*, et al.* Obesity and triple-negative-breast-cancer: Is apelin a new key target? Journal of Cellular and Molecular Medicine 2020;24(17):10233-10244
Agents: Apelin-13 **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** 2006; **Duration:** 6 weeks;
ALZET Comments: Dose (0.1 umol/kg/day); Controls received mp w/ vehicle; animal info (9-week-old Balb/cJRj or Balb/c nude mice); dependence;

Q8849: G. Flores*, et al.* CDK9 Blockade Exploits Context-dependent Transcriptional Changes to Improve Activity and Limit Toxicity of Mithramycin for Ewing Sarcoma. Molecular Cancer Therapeutics 2020;19(5):1183-1196
Agents: Mithramycin **Vehicle:** PBS; **Route:** IP; **Species:** Mice (Nude); **Pump:** 1003D; **Duration:** 3 days;
ALZET Comments: Dose (100 nM); Controls received mp w/ vehicle; animal info (Athymic nude mice); dependence;

Q8404: H. Castillo-Ecija*, et al.* Treatment-driven selection of chemoresistant Ewing sarcoma tumors with limited drug distribution. Journal of Controlled Release 2020;324(440-449
Agents: Irinotecan **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2001D; **Duration:** 10 days;
ALZET Comments: Dose (130 ug/h); Controls received mp w/ vehicle; animal info (athymic nude mice); cancer (ewing sarcoma);

Q7425: X. Zhi*, et al.* Adrenergic modulation of AMPKdependent autophagy by chronic stress enhances cell proliferation and survival in gastric cancer. Int J Oncol 2019;54(5):1625-1638
Agents: Propranolol Hydrochloride **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** Not stated; **Duration:** 21 days;
ALZET Comments: Dose (2 mg/kg/day); Controls received mp w/ vehicle; animal info (Male BALB/c nude mice (5weeks old, weighing ~20 g)); cancer (gastric cancer);

Q7039: X. Yu*, et al.* Synergistic antitumor effects of 9.2.27-PE38KDEL and ABT-737 in primary and metastatic brain tumors. PLoS One 2019;14(1):e0210608
Agents: 9.2.27-PE38KDEL immunotoxin, ABT-737 **Vehicle:** PBS, captisol, mouse serum albumin; **Route:** CSF/CNS (intratumoral); **Species:** Mice (nude); **Pump:** 1007D; **Duration:** 3 days;
ALZET Comments: 5% Captisol and 2% mouse serum albumin used; animal info (Nude mice (22–30 g, 6–8 weeks); ALZET brain infusion kit 3 used; cancer (glioblastoma); "Convection-enhanced delivery (CED), utilizing osmotic pumps, has been successfully used to bypass the blood-brain barrier and to deliver ITs directly into brain tumors" pg.12 ;

Q7663: G. Shetty*, et al.* Effect of hormone modulations on donor-derived spermatogenesis or colonization after syngeneic and xenotransplantation in mice. Anesthesia & Analgesia 2019;7(2):257-265
Agents: Follicle stimulating hormone, recomb. human **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks;
ALZET Comments: Dose (5 IU/day); Controls received sham surgery; animal info (7-9 weeks, male, C57BL/6Law and nude); replacement therapy (FSH);

Q7080: S. Krishnamurthy*, et al.* Hyperosmotic intraventricular drug delivery of DV1 in the management of intracranial metastatic breast cancer in a mouse model. J Clin Neurosci 2019;62(207-211
Agents: DV1 **Vehicle:** Saline; **Route:** CSF/CNS (left ventricle); **Species:** Mice (nude); **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Dose (50 mg/kg/day); Controls received mp w/ vehicle; animal info (female athymic nude mice, 8 weeks old,); DV1 is a synthetic inhibitor of Chemokine receptor 4 (CXCR4); ALZET brain infusion kit 3 used; cyanoacrylate adhesive; cancer (breast); the skin incision was closed with Vetbond; Brain coordinates (skull at 0.3 mm posterior, 1.0 mm lateral to the bregma, 3.0mm deep);

Q6885: H. Kaneko*, et al.* Developmental ability of oocytes retrieved from Meishan neonatal ovarian tissue grafted into nude mice. Animal Science Journal 2019;
Agents: Follicle stimulating hormone, porcine **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice (nude); **Pump:** 2004; **Duration:** 13 days;
ALZET Comments: Dose (porcine FSH (62.5 or 125 U/ml); animal info (Female nude mice (Crlj:CD1-Foxn1nu));

Q8166: N. Ben-Jonathan*, et al.* Activation of the cGMP/protein kinase G system in breast cancer by the dopamine receptor-1. Cancer Drug Resist 2019;
Agents: Fenoldopam **Vehicle:** Not stated; **Route:** SC; **Species:** Mice; **Pump:** Not stated; **Duration:** 3 weeks;
ALZET Comments: animal info (Athymic nude mice); Fenoldopam mesylate aka fenoldopam; cancer (Breast);

Q7161: X. Yu*, et al.* Zinc Metallochaperones Reactivate Mutant p53 Using an ON/OFF Switch Mechanism: A New Paradigm in Cancer Therapeutics. Clin Cancer Res 2018;24(18):4505-4517
Agents: Zinc metallochaperone 1 **Vehicle:** DMSO; **Route:** IV (jugular); **Species:** Mice (nude); **Pump:** 2001; **Duration:** 7, 17 days;
ALZET Comments: Dose (1 mg/kg/d); Controls received mp w/ vehicle; animal info (8-12 week old mice); pumps replaced after 1 week; comparison of IV bolus injection vs continuous pump infusion; half-life: <30 min (p. 4505); cancer (therapeutics);

Q6915: K. Mitsuoka*, et al.* Predicting response to sepantronium bromide (YM155), a survivin suppressant, by PET imaging with [(11)C]YM155. Nucl Med Biol 2018;64-65(41-46
Agents: YM155 **Vehicle:** DMSO; Saline; **Route:** SC; **Species:** Mice (nude); **Pump:** 1003D; 1007D; **Duration:** 2 weeks;
ALZET Comments: animal info (5-6 week old Male athymic nude mice); YM155 aka Sepantronium bromide; cancer (tumor);

Q7075: B. Li*, et al.* Epigenetic Regulation of CXCL12 Plays a Critical Role in Mediating Tumor Progression and the Immune Response In Osteosarcoma. Cancer Research 2018;78(14):3938-3953
Agents: AMD3100; AMG487 **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (nude); **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: animal info (Five-week-old female immunocompetent BALB/c mice and immunodeficient NOD-SCID IL2rgnull (NSG) mice); cancer (osteosarcoma);

Q7081: S. A. Jannetti*, et al.* PARP-1-Targeted Radiotherapy in Mouse Models of Glioblastoma. J Nucl Med 2018;59(8):1225-1233
Agents: 131I-poly(ADP-ribose) polymerase inhibitor (131I-PARPi), radio-isotope (131I) **Vehicle:** PEG 300, saline, 131I tracer;
Route: CSF/CNS; **Species:** Mice; **Pump:** 1003D; **Duration:** 5 days;
ALZET Comments: 30% PEG-300 used; animal info (6 to 8-week-old female athymic nude CrTac:NCr-Fo mice); 131I-PARPi is an 131I-labeled poly(ADP-ribose) polymerase 1 enzyme inhibitor; ALZET brain infusion kit 3 used; Brain coordinates (2 mm lateral and 1 mm anterior to the bregma); cancer (glioblastoma);

Q7021: H. Hvid*, et al.* Activation of insulin receptors and IGF-1 receptors in COLO-205 colon cancer xenografts by insulin and insulin analogue X10 does not enhance growth under normo- or hypoglycaemic conditions. Diabetologia 2018;61(11):2447-2457
Agents: Insulin, human; X10 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (nude); **Pump:** Not Stated; **Duration:** Not Stated;
ALZET Comments: Dose (insulin at 27 nmol/kg/d; X10 at 41 nmol/kg/d); Controls received mp w/ vehicle; animal info (male BALB/c nude mice); X10 is an insulin analog; cancer (colon); diabetes;

Q7128: L. Detti*, et al.* Xenotransplantation of pre-pubertal ovarian cortex and prevention of follicle depletion with anti-Mullerian hormone (AMH). J Assist Reprod Genet 2018;35(10):1831-1841
Agents: anti-Müllerian hormone, recomb. **Vehicle:** Saline; **Route:** IP; **Species:** Mice (nude); **Pump:** 1002; **Duration:** 2 weeks;
ALZET Comments: Dose (1.23 ug/d); Controls received mp w/ vehicle; animal info (10-week-old NU/J mice, or nude mice,); functionality of mp verified by residual volume;

Q5934: D. Yu*, et al.* Multiplexed RNAi therapy against brain tumor-initiating cells via lipopolymeric nanoparticle infusion delays glioblastoma progression. Proc Natl Acad Sci U S A 2017;114(30):E6147-E6156
Agents: RNA, small interfering **Vehicle:** Not Stated; **Route:** CSF/CNS (intratumoral); **Species:** mice (nude); **Pump:** 1002, 2002;
Duration: 14 days;
ALZET Comments: animal info (athymic nude, 6-8 weeks old); ALZET brain infusion kit 3 used; cancer (glioblastoma); "Because repeated surgery introduces stress and pain that may impact the survival of the experimental animals, we opted for the convection-enhanced delivery (CED) strategy using an Alzet osmotic pump to deliver a continuous supply of the nano RNAi combination..." pg E6151;

Q6546: Xiang Yan, *et al.* YM155 Down-Regulates Survivin and Induces P53 Up-Regulated Modulator of Apoptosis (PUMA)-Dependent in Oral Squamous Cell Carcinoma Cells. Medical Science Monitor 2017;23(1963-1972
Agents: YM155 **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice (nude); **Pump:** 1003D; **Duration:** 2 weeks;
ALZET Comments: Dose (50 mg/kg); Controls received mp w/ vehicle; animal info (4- to 6-week-old severe combined immunodeficient female mice); pumps replaced every week; cancer (SCC9 tumors);

Q6182: B. Sitohy, *et al.* Early Actions of Anti-Vascular Endothelial Growth Factor/Vascular Endothelial Growth Factor Receptor Drugs on Angiogenic Blood Vessels. American Journal of Pathology 2017;187(10):2337-2347
Agents: L-NAME, D-NAME **Vehicle:** PBS; **Route:** SC; **Species:** Mice (nude); **Pump:** 1003D; **Duration:** 1 day;
ALZET Comments: Dose: L-NAME (134 mg/kg/day); Controls received mp w/ vehicle; animal info (4-6 wk female athymic nude, wild-type C57BL/6 and eNOS null; "Because oral administration could not be counted on to deliver a consistent amount of drug reliably over a short (1 day) period of time, L- and D-NAME were administered by way of s.c. implanted minipumps."

Q6341: G. Pascual-Pasto, *et al.* Increased delivery of chemotherapy to the vitreous by inhibition of the blood-retinal barrier. J Control Release 2017;264(34-44
Agents: Topotecan **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice (nude); **Pump:** 2001D; **Duration:** Not Stated;
ALZET Comments: cancer;

Q6348: N. Nakamura, *et al.* RAGE-aptamer Attenuates the Growth and Liver Metastasis of Malignant Melanoma in Nude Mice. Mol Med 2017;23(295-306
Agents: RAGE-aptamer **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice (nude); **Pump:** Not Stated; **Duration:** 42 days;
ALZET Comments: Dose (38.4 pmol/day/g body weight); Controls received mp w/ vehicle; animal info (Six-week-old female athymic nude mice); half-life (p.); cancer (G361 melanoma);

Q6356: J. Mircetic, *et al.* Development of a genetic sensor that eliminates p53 deficient cells. Nat Commun 2017;8(1):1463
Agents: Ganciclovir **Vehicle:** Water; **Route:** SC; **Species:** Mice (nude); **Pump:** 2002; **Duration:** 14 days;
ALZET Comments: Dose (20 mg/kg/day); Controls received mp w/ vehicle; animal info (12 week old NMRI (nu/nu) mice);

Q6593: E. M. Masko, *et al.* Evidence for Feedback Regulation Following Cholesterol Lowering Therapy in a Prostate Cancer Xenograft Model. Prostate 2017;77(5):446-457
Agents: Simvastatin **Vehicle:** DMSO; PBS; **Route:** SC; **Species:** Mice (nude); **Pump:** 2006; **Duration:** Not Stated;
ALZET Comments: Dose (11 mg/kg/day); 40% DMSO, 60% PBS used; Controls received mp w/ vehicle; animal info (6 week old male Athymic Nude-Foxn1Nu mice);

Q6286: T. Lin, *et al.* Orthopaedic wear particle-induced bone loss and exogenous macrophage infiltration is mitigated by local infusion of NF-kappaB decoy oligodeoxynucleotide. J Biomed Mater Res A 2017;105(11):3169-3175
Agents: Polyethylene, ultra-high molecular weight; oligodeoxynucleotide; lipopolysaccharide **Vehicle:** Not Stated; **Route:** Bone (femur); **Species:** Mice (nude); **Pump:** 2006; **Duration:** 21 days;
ALZET Comments: Dose (UHMWPE particles (15 mg/mL), decoy ODN (50 lM), and/or LPS (1 lg/mL)); animal info (10-12 week old male athymic nude mice);

Q5949: L. Laborde, *et al.* Continuous low plasma concentrations of everolimus provides equivalent efficacy to oral daily dosing in mouse xenograft models of human cancer. Cancer Chemotherapy and Pharmacology 2017;80(4):869-878
Agents: Everolimus **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; Mice (nude); **Pump:** 1003D; 1002; **Duration:** 3 days; 2 weeks;
ALZET Comments: Dose (2.4 or 0.6 mg/kg/day) In nude mice (1.6 and 0.9 mg/kg/day); animal info (Female Harlan athymic nude mice weighing 20–30 g); post op. care (buprenorphine and meloxicam); comparison of IV, IP, oral, SC administration versus SC osmotic mini-pumps or via poly-lactic-co-glycolic (PLGA)-microparticles (PLGA-µP); Resultant plasma level (1878 and 450 ng/mL. In nude mice: 614 ± 72 and 604 ± 108 ng/mL); cancer (breast, renal); "Although mini-pumps may not be practical for clinical use, they allowed us a proof-of-concept of whether low continuous dosing could give useful efficacy which might also impact toxicity. Pilot experiments… confirmed that MPs could provide relatively constant everolimus concentrations in the plasma."