



## References (2019-Present) Using the ALZET® Osmotic Pumps in Xenograft Models

**Q11245:** I. Bhutada, *et al.* CDK7 and CDK9 inhibition interferes with transcription, translation, and stemness, and induces cytotoxicity in GBM irrespective of temozolomide sensitivity. *Neuro-Oncology* 2024;26(1):70-84

**Agents:** SNS032 **Vehicle:** Not Stated; **Route:** CSF/CNS (intratumoral); **Species:** Mice; **Strain:** SCID; **Pump:** Not Stated; **Duration:** 4 weeks;

**ALZET Comments:** animal info: 8 weeks-old; ALZET BIK 3 used; good methods see Supp. data; cancer (Glioblastoma);

**Q11321:** J. H. Jun, *et al.* Effects of dexmedetomidine on A549 non-small cell lung cancer growth in a clinically relevant surgical xenograft model. *Scientific Reports* 2023;13(1):12471

**Agents:** Dexmedetomidine **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** BALB/c nude; **Pump:** 1002; **Duration:** 14 days;

**ALZET Comments:** Dose (20 ug/kg/day); animal info (male; 6 weeks old, 17-18 g); receptor agonist (Alpha-2 adrenoceptor); immunology; xenograft

**Q11211:** L. E. Stevens, *et al.* JAK-STAT Signaling in Inflammatory Breast Cancer Enables Chemotherapy-Resistant Cell States. *Cancer Res* 2023;83(2):264-284

**Agents:** Ruxolitinib **Vehicle:** N,N-dymethylacetamide; propylene glycol; **Route:** SC; **Species:** Mice; **Strain:**

NOD.Cg-Prkdcscidll2rgtm1Sug/JicTac **Pump:** 1004; **Duration:** Not Stated;

**ALZET Comments:** Dose (60 mg/kg/day); 60% propylene glycol used; 40% N,N-dymethylacetamide used; animal info: 6-week-old female; Multiple pumps per animal (2); cancer (Breast);

**R0437:** S. A. Shetu, *et al.* Molecular Research in Pancreatic Cancer: Small Molecule Inhibitors, Their Mechanistic Pathways and Beyond. *Current Issues in Molecular Biology* 2023;45(3):1914-1949

**Agents:** IPI-269609 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** E3LZ10.7; **Pump:** Not Stated; **Duration:** 5 days;

**ALZET Comments:** Dose (20 mg/kg/d); animal info: xenograft male mice; cancer (Pancreatic); "...it was shown through immunohistochemistry that IPI-269609 reduced the overexpression of ALDH (aldehyde dehydrogenase-bright cells, a clonogenic tumor-initiating population in pancreatic cancer) in vivo." p. 20

**Q10982:** E. A. Power, *et al.* Overcoming translational barriers in H3K27-altered diffuse midline glioma: Increasing the drug-tumor residence time. *Neuro-oncology Advances* 2023;5(1):vdad033

**Agents:** Alisertib **Vehicle:** DMSO; **Route:** CSF/CNS (pons); **Species:** Rat; **Strain:** DIPGXIIIp; **Pump:** 2001; **Duration:** 7 days;

**ALZET Comments:** animal info: orthotopic patient derived xenograft model; Alisertib is an Aurora kinase (AK) inhibitor; CT was used to confirm cannula placement in the pons (Fig. 5A). cancer (Diffuse midline glioma (DMG); brain tissue distribution; "continuous CED of alisertib via an implantable pump is an efficacious treatment strategy against H3K27M DMG"

**Q10956:** X. Li, *et al.* YM155 inhibits neuroblastoma growth through degradation of MYCN: A new role as a USP7 inhibitor. *European Journal of Pharmaceutical Sciences* 2023;181(106343

**Agents:** YM155 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** BALB/c-nu; **Pump:** 1004; **Duration:** 21 days;

**ALZET Comments:** Dose (2 mg/kg/day); Controls received mp w/ vehicle; animal info (Female mice; 6 weeks old); cancer (Neuroblastoma); therapeutic indication (tumor growth size); xenograft

**Q11309:** L. Guo, *et al.* PER2 integrates circadian disruption and pituitary tumorigenesis. *Theranostics* 2023;13(8):2657-2672

**Agents:** 17 Beta-estradiol **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** Per2-/- (C57BL6 background); **Pump:** 2004;

**Duration:** Not Stated;

**ALZET Comments:** Dose (20 mg); animal info (8-12 weeks old);

**Q11106:** C. Garlapati, *et al.* PLK1 and AURKB phosphorylate survivin differentially to affect proliferation in racially distinct triple-negative breast cancer. *Cell Death & Disease* 2023;14(1):12

**Agents:** YM155 **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** Nude; **Pump:** 1004; **Duration:** 2 weeks;

**ALZET Comments:** Dose (10 mg/kg); Controls received mp w/ vehicle; cancer (Breast); xenograft



**Q11103:** R. L. Fine, *et al.* C-Terminal p53 Palindromic Tetrapeptide Restores Full Apoptotic Function to Mutant p53 Cancer Cells In Vitro and In Vivo. *Biomedicines* 2023;11(1):

**Agents:** Adenovirus, 4R-Pal-p53p plasmid **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** Nude; **Pump:** Not Stated; **Duration:** 14 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (Female; 8-10 weeks old); peptides; gene therapy; xenograft

**Q11270:** W. Dong, *et al.* A designer peptide against the EAG2-Kvbeta2 potassium channel targets the interaction of cancer cells and neurons to treat glioblastoma. *Nature Cancer* 2023;4(10):1418-1436

**Agents:** K90-114 **Vehicle:** DPBS; **Route:** CSF/CNS (intratumoral); **Species:** Mice; **Strain:** NSG; **Pump:** 1002; 1007D;

**Duration:** 14 days;

**ALZET Comments:** Dose (300 µg); animal info: 6–12-week-old female; peptides; brain coordinates (1.5 mm lateral to midline, 2 mm posterior to bregma and –3 mm deep to the cranial surface); cancer (Glioblastoma); brain tissue distribution; "We utilized an osmotic pump with a cannula to infuse peptide intratumorally (Fig. 5c), a delivery route that bypasses the blood–brain barrier and increases peptide local concentration." p. 8

**Q11155:** Q. Zhang, *et al.* USP21 promotes self-renewal and tumorigenicity of mesenchymal glioblastoma stem cells by deubiquitinating and stabilizing FOXD1. *Cell Death and Disease* 2022;13(8):712

**Agents:** Disulfiram **Vehicle:** Not Stated; **Route:** CSF/CNS **Species:** Mice **Strain:** BALB/c nude **Pump:** Not Stated **Duration:** 10w

**ALZET Comments:** Dose: (50 mg/kg); animal info: 8-weeks-old male; Brain coordinates (2mm anterior, 2mm lateral, 3mm depth from the dura); cancer (Glioblastoma);

**Q11223:** Y. Tanaka, *et al.* Combined treatment with glucagon-like peptide-1 receptor agonist exendin-4 and metformin attenuates breast cancer growth. *Diabetology International* 2022;13(3):480-492

**Agents:** Exendin-4 **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice; **Strain:** athymic CAnN.Cg-Foxn1nu/CrlCrlj; **Pump:** 1004;

**Duration:** Not Stated;

**ALZET Comments:** Dose: 300 pmol/kg/day; Controls received mp w/ vehicle; animal info: Female mice 6 weeks; cancer (Breast cancer); diabetes;

**Q10692:** S. Talele, *et al.* Central Nervous System Distribution of the Ataxia-Telangiectasia Mutated Kinase Inhibitor AZD1390: Implications for the Treatment of Brain Tumors. *Journal of Pharmacology and Experimental Therapeutics* 2022;383(1):91-102

**Agents:** AZD1390 **Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Strain:** Wild-type, TKO; **Pump:** 1003D; **Duration:** 24 hours;

**ALZET Comments:** Dose (10 mg/ml); Controls received mp w/ vehicle; animal info (Male; Female; 8-14 weeks old; ); enzyme inhibitor (AZD1390 is a ataxia telangiectasia mutant kinase inhibitor); cancer (Glioblastoma);

**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(2):15665

**Agents:** Estradiol **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Strain:** NSG, NOD.Cg-25 PrkdcscidIl2rgtm1Wjl/SzJl; NRG, NOD.Cg-Rag1tm1Mom Il2rgtm1Wjl/SzJl; **Pump:** Not Stated; **Duration:** 28 days;

**ALZET Comments:** Dose (1.08 mg/pellet); animal info (5–8 weeks old); cancer (Breast);

**Q11166:** D. Laha, *et al.* Preclinical assessment of synergistic efficacy of MELK and CDK inhibitors in adrenocortical cancer. *Journal of Experimental & Clinical Cancer Research* 2022;41(1):282

**Agents:** RGB-286638 **Vehicle:** DMSO; **Route:** Not Stated; **Species:** Mice; **Strain:** Not Stated; **Pump:** 1002;

**Duration:** Not Stated;

**ALZET Comments:** Dose: 0.06 mg/ul; 0.1% DMSO vehicle used Controls received mp w/ vehicle; RGB-286638 is a cyclin-dependent kinase inhibitor; cancer (Adrenocortical)



**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; **Strain:** Vav3-deficient; Rac1Δ/Δ+Rac2-deficient; C57Bl/10; NOD/SCID/IL2RG<sup>-/-</sup>; **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<sup>-/-</sup> males and females, 8–14 weeks old); IODVA1 aka 2-guanidinobenzimidazole derivative with anti-tumorigenic properties; cancer (leukemia)

**Q10381:** L. M. Fernandez-Sevilla, *et al.* High BMP4 expression in low/intermediate risk BCP-ALL identifies children with poor outcomes. *Blood* 2022;139(22):3303-3313

**Agents:** DMH1 **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 5 weeks;

**ALZET Comments:** Dose (3 mg/kg/day); Controls received mp w/ vehicle; animal info (8-12 weeks old; IV-infused via tail vein with human primary cells); DMH1 is a BMP inhibitor; cancer (Blood); Therapeutic indication (Leukemic CNS disease);

**Q10434:** A. DeGuzman, *et al.* Bittersweet: relevant amounts of the common sweet food additive, glycerol, accelerate the growth of PC3 human prostate cancer xenografts. *BMC Research Notes* 2022;15(1):101

**Agents:** Glycerol **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** 2004; **Duration:** 32 days;

**ALZET Comments:** Dose (0.25 μL/h); Controls received mp w/ vehicle; animal info (Male; 6 weeks old); post op. care (Bupivacaine 7 mg/kg); wound clips used; cancer (Prostate);

**Q10421:** A. Casazza, *et al.* PhAc-ALGP-Dox, a Novel Anticancer Prodrug with Targeted Activation and Improved Therapeutic Index. *Molecular Cancer Therapeutics* 2022;21(4):568-581

**Agents:** Doxorubicin; PhAc-ALGP-Dox **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice; **Strain:** Not Stated; **Pump:** 1007D; **Duration:** 7 days;

**ALZET Comments:** Dose (58 mg/kg; 1026 mg/kg/wk); animal info (Female; 6-8 weeks old); doxorubicin and PhAc-ALGP-Dox are chemotherapeutics; cancer (General);

**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; **Strain:** athymic nude; **Pump:** Not Stated;

**Duration:** 3 weeks; 7 days;

**ALZET Comments:** animal info: mice; Fenoldopam aka (Fen) is a D1R agonist; fluorescence imaging; cancer (Breast cancer);

**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; **Strain:** athymic nude; **Pump:** 1003D; **Duration:** 72 hours;

**ALZET Comments:** Dose: 24 ug/day; Controls received mp w/ vehicle; animal info: Six- to eight-week-old female 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;

**Q10236:** Y. Li, *et al.* Tacrolimus inhibits oral carcinogenesis through cell cycle control. *Biomedicine & Pharmacotherapy* 2021;139(111545)

**Agents:** Tacrolimus **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** Not Stated; **Duration:** 4 weeks;

**ALZET Comments:** Dose: (5 mg/kg/d); Controls received mp w/ vehicle; animal info: Male (SD) rats (6–8 weeks old); Tacrolimus aka (TAC, FK506) is a major calcineurin inhibitor; cancer ();



**Q10214:** S. H. Kizilbash, *et al.* In Vivo Efficacy of Tesevatinib in EGFR-Amplified Patient-Derived Xenograft Glioblastoma Models May Be Limited by Tissue Binding and Compensatory Signaling. *Molecule Cancer Therapeutics* 2021;20(6):1009-1018

**Agents:** Tesevatinib **Vehicle:** DMSO; **Route:** IP; **Species:** Mice; **Strain:** FVB wild-type (WT); TKO; **Pump:** 1003D; **Duration:** 48 h  
**ALZET Comments:** Controls received mp w/ vehicle; animal info: 8 to 14 weeks; half-life (p.3); Tesevatinib is a potent oral brain penetrant EGFR inhibitor, cancer (Glioblastoma)

**Q10561:** J. H. Jun, *et al.* Effects of Bisphenol A on the Proliferation, Migration, and Tumor Growth of Colon Cancer Cells: In vitro and in Vivo Evaluation with Mechanistic Insights Related to ERK and 5-HT3. *Food and Chemical Toxicology* 2021;158(112662

**Agents:** Bisphenol A **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** BALB/c nude; **Pump:** 1004; **Duration:** 28 days;  
**ALZET Comments:** Dose (100 ug/kg/day); animal info (6 weeks old; Male mice ; Weigh 17-18 g); BPA aka Bisphenol A; cancer (Colon);

**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:** Ang II **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Strain:** BALB/c nude; **Pump:** 1004; **Duration:** 4 weeks;  
**ALZET Comments:** Dose (100 ng/kg/min); animal info (5-week-old male mice, 18–20 g); Angiotensin II aka Ang II; cancer (Carcinoma); "Ang II was administered by an ALZET osmotic pump (ALZA, Cupertino, California, USA; model: 1004; sustained release rate: 0.11 µL/hour; duration: 4 weeks), which could release Ang II continuously, homogeneously and stably; avoid stress due to repeated administration; and protect the short half-life of the drug" pg 3

**Q8715:** M. H. Chasse, *et al.* Mithramycin induces promoter reprogramming and differentiation of rhabdoid tumor. *EMBO Molecular Medicine* 2021;13(2):e12640

**Agents:** Mithramycin **Vehicle:** PBS supplemented with magnesium or calcium; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** 1003D; **Duration:** 3 days;  
**ALZET Comments:** Dose (2.4 mg/kg); Controls received mp w/ vehicle; cancer (rhabdoid tumor)

**Q10114:** D. C. Borchering, *et al.* Suppression of Breast Cancer by Small Molecules That Block the Prolactin Receptor. *Cancers (Basel)* 2021;13(11):

**Agents:** SMI-6 **Vehicle:** Hydroxypropyl-β-cyclodextrin; **Route:** SC; **Species:** Mice; **Strain:** athymic nude; **Pump:** 1004; **Duration:** 4 weeks;  
**ALZET Comments:** Dose: (0.11 u/h); dose-response (see pg 3) fig.1; PEG300; 37% hydroxypropyl-β-cyclodextrin; Controls received mp w/ vehicle; animal info: Eight-week-old female mice; SMI-6 aka small molecule inhibitor 6; cancer (Breast cancer);

**Q9511:** T. H. Turner, *et al.* Identification of synergistic drug combinations using breast cancer patient-derived xenografts. *Scientific Reports* 2020;10(1):1493

**Agents:** YM155 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** NSG; **Pump:** 1007D; **Duration:** 7 days;  
**ALZET Comments:** Dose (5 mg/kg); Controls received mp w/ vehicle; dependence;

**Q9470:** J. Shi, *et al.* Restoring apoptosis dysregulation using survivin inhibitor in nasopharyngeal cancer. *Head Neck* 2020;42(5):913-923

**Agents:** YM155 **Vehicle:** Saline; **Route:** Not Stated; **Species:** Mice; **Strain:** NSG; **Pump:** 1007D; **Duration:** 7 days;  
**ALZET Comments:** Dose (5 mg/kg/day); Controls received mp w/ vehicle; animal info (6-week-old female; YM-155 aka survivin inhibitor; cancer (Nasopharyngeal carcinoma);

**Q10328:** L. Shaashua, *et al.* Spontaneous regression of micro-metastases following primary tumor excision: a critical role for primary tumor secretome. *BMC Biology* 2020;18(1):163

**Agents:** Conditioned medium **Vehicle:** Serum-free medium; **Route:** IP; **Species:** Mice; **Strain:** BALB/c; **Pump:** 1003D; **Duration:** Not Stated;  
**ALZET Comments:** Dose: (100 µl/mouse); animal info: Eight-week-old female mice; Conditioned medium aka (CM) made with MDA-MB-231HM cells, Serum-free medium (SM); cancer



**Q9426:** J. S. Rechberger, *et al.* Evaluating infusate parameters for direct drug delivery to the brainstem: a comparative study of convection-enhanced delivery versus osmotic pump delivery. *Neurosurgical Focus* 2020;48(1):E2

**Agents:** FITC-Dextran **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** 2001D; 2ML1; **Duration:** 24 hours; 5 days;

**ALZET Comments:** Animal info (Female rats (mean age 6 weeks, mean weight 140 g)); ALZET brain infusion kit II used; cyanoacrylate adhesive; dependence;

**Q8815:** A. Rahman, *et al.* Antiproliferative Effects of Monoclonal Antibodies against (Pro)Renin Receptor in Pancreatic Ductal Adenocarcinoma. *Molecular Cancer Therapeutics* 2020;19(9):1844-1855

**Agents:** Handle region peptide **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** 1004; **Duration:** 28 days; **ALZET Comments:** Dose (0.1 mg/kg); Controls received mp w/ vehicle; animal info (5 weeks old, Male); Handle region peptide aka HRP (Pro)Renin Receptor Antagonist; 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; **Species:** Mice; **Strain:** NSG; **Pump:** 1004; **Duration:** 26 d **ALZET Comments:** Dose: TMZ (100 µL at 32.5 mg/mL); Pyr-Pam (100 µL at 7 mg/mL); Controls received mp w/ vehicle; (Brain Infusion Kit 3); 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

**Q8881:** S. Liu, *et al.* Assessment and Comparison of the Efficacy of Methotrexate, Prednisolone, Adalimumab, and Tocilizumab on Multipotency of Mesenchymal Stem Cells. *Frontiers in Pharmacology* 2020;11(1004

**Agents:** Methotrexate; Prednisolone; Adalimumab; Tocilizumab **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 4 weeks; **ALZET Comments:** Dose (0.25 or 0.5 mg/kg methotrexate; 0.1 or 0.2 mg/kg prednisolone; 0.75 or 1.5 mg/kg adalimumab; 4 or 8 mg/kg tocilizumab); Controls received mp w/ vehicle; animal info (male mice, 6-10 weeks old); dependence;

**Q8632:** Y. Li, *et al.* Dual targeting of Polo-like kinase 1 and baculoviral inhibitor of apoptosis repeat-containing 5 in TP53-mutated hepatocellular carcinoma. *World Journal of Gastroenterology* 2020;26(32):4786-4801

**Agents:** YM155 **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Strain:** Not Stated; **Pump:** 1007D; **Duration:** 7 days; **ALZET Comments:** Dose (3 mg/kg/day); Controls received mp w/ vehicle; animal info (Eight-week-old male mice); cancer (Hepatocellular carcinoma);

**Q9274:** C. T. Holland, *et al.* S179D Prolactin Sensitizes Human PC3 Prostate Cancer Xenografts to Anti-tumor Effects of Well-Tolerated Doses of Calcitriol. *Journal of Cancer Science Clinical Therapeutics* 2020;4(4):442-456

**Agents:** S179D; Calcitriol **Vehicle:** Propylene Glycol; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 28 days; **ALZET Comments:** cancer(prostate). Dose (S179D PRL 250ng/h; calcitriol 220 pg/h)

**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; **Strain:** athymic nude; **Pump:** 1003D; **Duration:** 3 days; **ALZET Comments:** Dose (100 nM); Controls received mp w/ vehicle; dependence;

**Q8458:** J. Enriquez Perez, *et al.* Convection-enhanced delivery of temozolomide and whole cell tumor immunizations in GL261 and KR158 experimental mouse gliomas. *BMC Cancer* 2020;20(1):7

**Agents:** Temozolomide **Vehicle:** PBS; Saline; **Route:** CSF/CNS (intratumoral); **Species:** Mice; **Strain:** C57BL/6; **Pump:** 1003D; **Duration:** 3 days; **ALZET Comments:** Dose (2.4mg/Kg/day); 0.9% NaCl used; Controls received mp w/ vehicle; animal info (female 8–10w old); ALZET brain infusion kit 3 used; Brain coordinates (1.5 mm to the right and 1.0 mm anterior of the bregma); immunology;



**Q8447:** G. Dolgormaa, *et al.* Mac-2-binding protein glycan isomer enhances the aggressiveness of hepatocellular carcinoma by activating mTOR signaling. *British Journal of Cancer* 2020;123(7):1145-1153

**Agents:** M2BP/IGI **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Strain:** NOD-SCID; **Pump:** 2002; **Duration:** 14 days;  
**ALZET Comments:** Dose (3.6 ug/ml/day); Controls received mp w/ vehicle; animal info (female, 7 weeks old, 19-20 g); M2BP/IGI aka Mac-2-binding protein; cancer (Carcinoma);

**Q9571:** A. Corachan, *et al.* Long-term vitamin D treatment decreases human uterine leiomyoma size in a xenograft animal model. *Reproductive Sciences* 2020;113(1):205-216 e4

**Agents:** 1,25(OH)2D3 **Vehicle:** Ethanol; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** 1004; **Duration:** 21, 60 days;  
**ALZET Comments:** Dose (0.5 or 1 ug/kg/day); Controls received mp w/ vehicle; animal info (5 weeks old, Female); 1,25(OH)2D3 aka Vitamin D; 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; **Strain:** athymic nude; **Pump:** 2001D; **Duration:** 24 hours;  
**ALZET Comments:** Dose (130 ug/h); Controls received mp w/ vehicle; cancer (ewing sarcoma);

**Q7425:** X. Zhi, *et al.* Adrenergic modulation of AMPK dependent 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; **Strain:** BALB/c nude; **Pump:** Not stated;  
**Duration:** 21 days;

**ALZET Comments:** Dose (2 mg/kg/day); Controls received mp w/ vehicle; animal info (Male 5 weeks old, weighing ~20 g)); cancer (gastric cancer);

**Q9043:** J. P. Zepecki, *et al.* Regulation of human glioma cell migration, tumor growth, and stemness gene expression using a Lck targeted inhibitor. *Oncogene* 2019;38(10):1734-1750

**Agents:** Lck inhibitor **Vehicle:** DMSO, Kolliphor; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Strain:** Nu/J;  
**Pump:** 1004; **Duration:** 4 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (8 weeks old Male); Lck-I aka Lck Inhibitor; enzyme inhibitor (Lck Inhibitor); ALZET brain infusion kit 3 used; Brain coordinates (+0.5 mm and +1.1 mm ML relative to Bregma); cyanoacrylate adhesive; cancer (Glioblastoma);

**Q7038:** G. Zadra, *et al.* Inhibition of de novo lipogenesis targets androgen receptor signaling in castration-resistant prostate cancer. *Proc Natl Acad Sci U S A* 2019;116(2):631-640

**Agents:** IPI-9119 **Vehicle:** 1-methyl-2-pyrrolidinone; sodium phosphate buffer; **Route:** SC; **Species:** Mice; **Strain:** Not Stated;  
**Pump:** 2002; **Duration:** 4 weeks;

**ALZET Comments:** Dose (100 mg/mL); 20% 1-methyl-2-pyrrolidinone used; enzyme inhibitor (fatty acid synthase); cancer (prostate); no stress: Mice did not show any signs of toxicity, stress, weight loss, or changes in feeding behavior. (see pg. 635); pumps replaced after 2 weeks

**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; **Strain:** Nude; **Pump:** 1007D; **Duration:** 3 days;

**ALZET Comments:** 5% Captisol and 2% mouse serum albumin used; animal info (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; Captisol is a beta-cyclodextrin



**Q7680:** Y. Wang, *et al.* NRG-1 Stimulates Serum DJ-1 Increase in Breast Cancers. *Pathol Oncol Res* 2019;25(1):71-79  
**Agents:** NRG-1 **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Strain:** Not Stated; **Pump:** Not Stated; **Duration:** 24 hours;  
**ALZET Comments:** Dose (10 ug/d); Controls received mp w/ vehicle; post op. care (carprofen); cancer (breast);

**Q8274:** A. MacDonald, *et al.* Necuparanib, A Multitargeting Heparan Sulfate Mimetic, Targets Tumor and Stromal Compartments in Pancreatic Cancer. *Mol Cancer Ther* 2019;18(2):245-256  
**Agents:** Necuparanib **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** C57bl/6/FVB; **Pump:** 1004; **Duration:** Not stated;  
**ALZET Comments:** Dose (40 mg/kg/day); Controls received mp w/ vehicle; animal info (); cancer (Pancreatic);

**Q8271:** R. Luwor, *et al.* Targeting Glioma Stem Cells by Functional Inhibition of Dynamin 2: A Novel Treatment Strategy for Glioblastoma. *Cancer Invest* 2019;37(3):144-155  
**Agents:** Cydn-4-36, Temozolomide, or both **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Strain:** BALB/c nu/nu;  
**Pump:** Not stated; **Duration:** 14 days;  
**ALZET Comments:** Dose (Cydn- 150 mg/kg/day or TMZ-20 mg/kg/day); animal info (8-10 weeks old, ); Cydn-4-36 aka dynamin inhibitor, TMZ aka temozolomide aka DNA-alkylating prodrug; enzyme inhibitor (Dynamin inhibitor); cancer (Glioma);

**Q8258:** Y. T. Lin, *et al.* Cordycepin Suppresses Endothelial Cell Proliferation, Migration, Angiogenesis, and Tumor Growth by Regulating Focal Adhesion Kinase and p53. *Cancers (Basel)* 2019;11(2):  
**Agents:** Cordycepin **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Strain:** BALB/c; **Pump:** Not stated; **Duration:** 7 days;  
**ALZET Comments:** Dose (2.4 mg/kg/day); Controls received mp w/ vehicle; dependence;

**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; **Strain:** nude (Crlj:CD1-Foxn1nu); **Pump:** 2004; **Duration:** 13 days;  
**ALZET Comments:** Dose (porcine FSH (62.5 or 125 U/ml); animal info (Female)

**Q7630:** H. Y. Jang, *et al.* Schedule-dependent synergistic effects of 5-fluorouracil and selumetinib in KRAS or BRAF mutant colon cancer models. *Biochemical Pharmacology* 2019;160(110-120  
**Agents:** fluorouracil, 5- **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Strain:** athymic, Balb-c/nu; **Pump:** Not Stated; **Duration:** 7 d  
**ALZET Comments:** Dose (10, 30 mg/kg/day); Controls received mp w/ vehicle; animal info (5.5 weeks, male,); cancer (colorectal); "An equivalent dose of 5-FU (JW Pharmaceutical, Seoul, Korea) was continuously delivered by osmotic pumps (Durect, Cupertino, CA, USA) over 7 days, to minimize possible side effects of severe weight loss by repeated bolus injections of 5-FU [26]." pg.112; Therapeutic indication (improved effectiveness of capecitabine (5-FU precursor) monotherapy due to synergistic effect with MEK inhibitor);

**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; **Strain:** NOD/SCID; **Pump:** Not stated; **Duration:** 7 days;  
**ALZET Comments:** Dose (25 mg/kg at 0.5 µl/h); Controls received mp w/ vehicle; 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);