



### Recent References (2016-2019) on Cancer Research Using ALZET® Osmotic Pumps

**Q7037:** J. Zhang, L. Wang, H. Wang, Z. Su and X. Pang. Neuroinflammation and central PI3K/Akt/mTOR signal pathway contribute to bone cancer pain. *Mol Pain* 2019;15(1744806919830240)

**ALZET Comments:** Rapamycin, LY294002, Interleukin-1 Receptor antagonist, SC144, etanercept; CSF, artificial; CSF/CNS (midbrain periaqueductal gray); Rat; animal info (200–250 gr Wistar rats); rapamycin is an mTOR inhibitor; LY294002 is a PI3K inhibitor; IL-1Ra is an IL-1b receptor antagonist, SC144 is a gp130 antagonist, etanercept is a TNF- $\alpha$  receptor antagonist; ALZET brain infusion kit used; Brain coordinates (7.6 mm posterior to the bregma, 0.65mm lateral to the midline, and 4.2 mm ventral to the brain surface); Therapeutic indication (bone cancer pain);

**Q7038:** G. Zadra, C. F. Ribeiro, P. Chetta, Y. Ho, S. Cacciatore, X. Gao, S. Syamala, C. Bango, C. Photopoulos, Y. Huang, S. Tyekucheva, D. C. Bastos, J. Tchaicha, B. Lawney, T. Uo, L. D'Anello, A. Csibi, R. Kalekar, B. Larimer, L. Ellis, L. M. Butler, C. Morrissey, K. McGovern, V. J. Palombella, J. L. Kutok, U. Mahmood, S. Bosari, J. Adams, S. Peluso, S. M. Dehm, S. R. Plymate and M. Loda. 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

**ALZET Comments:** IPI-9119; 1-methyl-2-pyrrolidinone; sodium phosphate buffer; SC; Mice; 2002; 4 weeks; 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);

**Q7039:** X. Yu, M. Dobrikov, S. T. Keir, M. Gromeier, I. H. Pastan, R. Reisfeld, D. D. Bigner and V. Chandramohan. Synergistic antitumor effects of 9.2.27-PE38KDEL and ABT-737 in primary and metastatic brain tumors. *PLoS One* 2019;14(1):e0210608

**ALZET Comments:** 9.2.27-PE38KDEL immunotoxin, ABT-737; PBS, captisol, mouse serum albumin; CSF/CNS; Mice (nude); 1007D; 3 days; 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 ;

**Q6792:** G. M. Shackelford, M. Y. Mahdi, R. A. Moats, D. Hawes, H. C. Tran, J. L. Finlay, T. Q. Hoang, E. F. Meng and A. Erdreich-Epstein. Continuous and bolus intraventricular topotecan prolong survival in a mouse model of leptomeningeal medulloblastoma. *PLoS One* 2019;14(1):e0206394

**ALZET Comments:** Topotecan; Saline; CSF/CNS (ventricle); Mice; 2004; 28 days; Dose (5.28  $\mu$ g/day); Controls received mp w/ vehicle; animal info (J:NU mice (homozygous for the Foxn1nu mutation); comparison of bolus dosing vs mp; cancer (Leptomeningeal medulloblastoma);

**Q7065:** G. Mastrella, M. Hou, M. Li, V. M. Stoecklein, N. Zdouc, M. N. M. Volmar, H. Miletic, S. Reinhard, C. C. Herold-Mende, S. Kleber, K. Eisenhut, G. Gargiulo, M. Synowitz, A. L. Vescovi, P. N. Harter, J. M. Penninger, E. Wagner, M. Mittelbronn, R. Bjerkvig, D. Hambardzumyan, U. Schuller, J. C. Tonn, J. Radke, R. Glass and R. E. Kalin. Targeting APLN/APLNR improves anti-angiogenic efficiency and blunts pro-invasive side effects of VEGFA/VEGFR2-blockade in glioblastoma. *Cancer Res* 2019;

**ALZET Comments:** apelin-F13A, DC101, Antibody, anti-VEGFR2; CSF, artificial; CSF/CNS (tumor); Mice; 1002; 2004; 14 and 28 days; Dose (30 or 60  $\mu$ g of apelin-F13A, 0.8 mg of DC101); apelin-F13A is a mutant APLNR ligand, DC101 is a VEGFR2-blocking antibody; ALZET brain infusion kit 3 used; cancer (glioblastoma);

**Q7069:** Y. P. Li, T. K. Sin, J. Z. Zhu and G. Zhang. p300 mediates muscle wasting in Lewis lung carcinoma. *Cancer Res* 2019;

**ALZET Comments:** C646; PBS, DMSO; SC; Mice; 14 days; Dose (10 mg/kg/day); 50% DMSO used; animal info (8-week-old male C57BL/6 mice); C646 is a specific pharmacological inhibitor of p300; cancer (Lewis lung carcinoma); Therapeutic indication (Muscle wasting);

**Q6964:** X. Li, X. Wang, J. Xie, B. Liang and J. Wu. Suppression of Angiotensin-(1-7) on the Disruption of Blood-Brain Barrier in Rat of Brain Glioma. *Pathol Oncol Res* 2019;25(1):429-435



**ALZET Comments:** Angiotensin (1-7); CSF, artificial; SC; Rat; 14 days; Dose (1 pmol/0.5 µl/h, 100 pmol/0.5 µl/h or 10 nmol/0.5 µl/h per 3 times/week); Controls received mp w/ vehicle; animal info (Male Sprague–Dawley rats of 280–320 g); cancer (Brain Glioma);.

**Q7080:** S. Krishnamurthy, J. Li, A. Bodman, C. Zhang, Y. Yang and J. An. 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

**ALZET Comments:** DV1; Saline; CSF/CNS (left ventricle); Mice (nude); 1007D; 7 days; 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;.

**Q6967:** M. Kondo, K. Miyata, H. Nagahori, K. Sumida, T. G. Osimitz, S. M. Cohen, B. G. Lake and T. Yamada. Involvement of peroxisome proliferator-activated receptor- $\alpha$  in liver tumor production by permethrin in the female mouse. *Toxicol Sci* 2019;

**ALZET Comments:** Uridine, Bromodeoxy; DMSO; SC; Mice; Rat; 2001; 2ML2; 7 days; 14 days; Dose (8.4 mgBrdU/mouse.; 33.6 mg BrdU/rat); 10% DMSO used; cancer (liver); stress/adverse reaction: One animal was dead due to anesthesia at implantation of osmotic pump;.

**R0376:** R. G. Kenny and C. J. Marmion. Toward Multi-Targeted Platinum and Ruthenium Drugs-A New Paradigm in Cancer Drug Treatment Regimens? *Chem Rev* 2019;

**ALZET Comments:** Chloridotetrakis(ibuprofenato)diruthenium-(II,III); Rat; cancer (glioma);.

**R0378:** B. Halle, K. Mongelard and F. R. Poulsen. Convection-enhanced Drug Delivery for Glioblastoma: A Systematic Review Focused on Methodological Differences in the Use of the Convection-enhanced Delivery Method. *Asian J Neurosurg* 2019;14(1):5-14

**ALZET Comments:** Etoposide, Bevacizumab, IMCA12, Interleukin-13-PE38, Tetrakis Chlorin; CSF/CNS (intratumoral); Mice, Rat; 2001D, 1003D, 1007D, 1004, 2004; 24 hours, 3, 7, 21, 28 days; ALZET brain infusion kit 1,2, and 3 used; cancer (Glioblastoma);.

**Q7082:** Gartung A, Yang J, Sukhatme VP, Bielenberg DR, Fernandes D, Chang J, Schmidt BA, Hwang SH, Zurakowski D, Huang S, Kieran MW, Hammock BD and P. D. 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

**ALZET Comments:** PTUPB; IP; Mice (SCID); 4 weeks; Dose (30 mg/kg/d); animal info (6-wk-old female C57BL/6 or SCID mice); PTUPB aka 4-(5-phenyl-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);.

**Q7083:** G. Gampa, M. Kim, A. S. Mohammad, K. E. Parrish, A. C. Mladek, J. N. Sarkaria and W. F. Elmquist. Brain Distribution and Active Efflux of Three panRAF Inhibitors: Considerations in the Treatment of Melanoma Brain Metastases. *J Pharmacol Exp Ther* 2019;368(3):446-461

**ALZET Comments:** CCT196969, LY3009120, MLN2480;; DMSO; IP; Mice (knockout); 1003D; 48 hours; Dose: CCT196969 (5 mg/ml), LY3009120 (3 mg/ml), MLN2480 (5 mg/ml); animal info (WT and *Mdr1a/b* -/- *Bcrp1* -/- mice, 8–16-week-old, approx. 15–35 grams); panRAF inhibitors; brain tissue distribution (p. 458); cancer (melanoma);.

**Q6985:** E. Binda, A. Visioli, N. Trivieri and A. L. Vescovi. Drug Delivery in an Orthotopic Tumor Stem Cell-Based Model of Human Glioblastoma. *Methods Mol Biol* 2019;1869(197-205

**ALZET Comments:** Saline; CSF/CNS (nucleus striatum); Mice (SCID); 2 weeks; 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.

**Q7161:** X. Yu, S. Kogan, Y. Chen, A. T. Tsang, T. Withers, H. Lin, J. Gilleran, B. Buckley, D. Moore, J. Bertino, C. Chan, S. D. Kimball, S. N. Loh and D. R. Carpizo. 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



**ALZET Comments:** Zinc metallochaperone 1; DMSO; IV (jugular); Mice (nude); 2001; 7, 17 days; 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);.

**Q5616:** X. Yu, S. Kogan, Y. Chen, A. T. Tsang, T. Withers, H. Lin, J. Gilleran, B. Buckley, D. Moore, J. Bertino, C. Chan, S. D. Kimball, S. N. Loh and D. R. Carpizo. 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

**ALZET Comments:** Zinc metallochaperone 1; IV (jugular); Mice (nude); 2001; 7 days; Dose (1 mg/kg/d); comparison of IV daily bolus injections vs continuous IV with mp; cancer (Pancreatic);.

**Q6892:** B. Remeniuk, T. King, D. Sukhtankar, A. Nippert, N. Li, F. Li, K. Cheng, K. C. Rice and F. Porreca. Disease modifying actions of interleukin-6 blockade in a rat model of bone cancer pain. *Pain* 2018;159(4):684-698

**ALZET Comments:** TB-2-081; PEG 400; SC; Rat; 2001; 7 days; Dose (1 mg/kg/day); Controls received mp w/ vehicle; cancer (bone);.

**Q6915:** K. Mitsuoka, A. Kita, Y. Murakami, K. Shirasuna, A. Noda, K. Yamanaka, N. Kaneko and S. Miyoshi. Predicting response to sepantronium bromide (YM155), a survivin suppressant, by PET imaging with [(11)C]YM155. *Nucl Med Biol* 2018;64-65(41-46)

**ALZET Comments:** YM155; DMSO; Saline; SC; Mice (nude); 1003D; 1007D; 2 weeks; animal info (5-6 week old Male athymic nude mice); YM155 aka Sepantronium bromide; cancer (tumor);.

**Q7075:** B. Li, Z. Wang, H. Wu, M. Xue, P. Lin, S. Wang, N. Lin, X. Huang, W. Pan, M. Liu, X. Yan, H. Qu, L. Sun, H. Li, Y. Wu, W. Teng, Z. Wang, X. Zhou, H. Chen, M. C. Poznansky and Z. Ye. Epigenetic Regulation of CXCL12 Plays a Critical Role in Mediating Tumor Progression and the Immune Response In Osteosarcoma. *Cancer Res* 2018;78(14):3938-3953

**ALZET Comments:** AMD3100; AMG487; IP; Mice (nude); animal info (Five-week-old female immunocompetent BALB/c mice and immunodeficient NOD-SCID IL2rgnull (NSG) mice); cancer (osteosarcoma);.

**Q7079:** B. Kuhn, C. Brat, J. Fettel, N. Hellmuth, I. V. Maucher, U. Bulut, K. J. Hock, J. Grimmer, G. Manolikakes, M. Ruhl, A. Kuhn, K. Zacharowski, C. Matrone, A. Urbschat, J. Roos, D. Steinhilber and T. J. Maier. Anti-inflammatory nitro-fatty acids suppress tumor growth by triggering mitochondrial dysfunction and activation of the intrinsic apoptotic pathway in colorectal cancer cells. *Biochem Pharmacol* 2018;155(48-60)

**ALZET Comments:** Nitrooleate, 9-; PEG 400, ethanol; SC; Mice (SCID); 2001; 5 days; 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;.

**Q7195:** H. Koblish, Y. L. Li, N. Shin, L. Hall, Q. Wang, K. Wang, M. Covington, C. Marando, K. Bowman, J. Boer, K. Burke, R. Wynn, A. Margulis, G. W. Reuther, Q. T. Lambert, V. Dostalík Roman, K. Zhang, H. Feng, C. B. Xue, S. Diamond, G. Hollis, S. Yeleswaram, W. Yao, R. Huber, K. Vaddi and P. Scherle. Preclinical characterization of INCB053914, a novel pan-PIM kinase inhibitor, alone and in combination with anticancer agents, in models of hematologic malignancies. *PLoS One* 2018;13(6):e0199108

**ALZET Comments:** INCB053914; SC; Mice; 2001, 2002; 7-19 days Dose (0.5 ul/h/day); animal info (female, 5-9 weeks old); comparison of twice daily oral gavage vs mp; INCB053914 is a Pan-PIM kinase inhibitor; enzyme inhibitor (pan-PIM kinase); Therapeutic indication (cancer); .

**Q7015:** S. A. Kahn, X. Wang, R. T. Nitta, S. Gholamin, J. Theruvath, G. Hutter, T. D. Azad, L. Wadi, S. Bolin, V. Ramaswamy, R. Esparza, K. W. Liu, M. Edwards, F. J. Swartling, D. Sahoo, G. Li, R. J. Wechsler-Reya, J. Reimand, Y. J. Cho, M. D. Taylor, I. L. Weissman, S. S. Mitra and S. H. Cheshier. Notch1 regulates the initiation of metastasis and self-renewal of Group 3 medulloblastoma. *Nat Commun* 2018;9(1):4121



**ALZET Comments:** Antibody, anti-NRR1; PBS; CNS/CSF (lateral ventricle); Mice; 1004; 10-50 days; Dose (1 µg/µL); Controls received mp w/ vehicle; anti-NRR1 is a NOTCH1 blocking antibody; ALZET brain infusion kit used; Brain coordinates (coronal suture, 2mm right lateral to midline, 4mm into the lateral ventricle); cancer (medulloblastoma);.

**Q7081:** S. A. Jannetti, G. Carlucci, B. Carney, S. Kossatz, L. Shenker, L. M. Carter, B. Salinas, C. Brand, A. Sadique, P. L. Donabedian, K. M. Cunanan, M. Gonen, V. Ponomarev, B. M. Zeglis, M. M. Souweidane, J. S. Lewis, W. A. Weber, J. L. Humm and T. Reiner. PARP-1-Targeted Radiotherapy in Mouse Models of Glioblastoma. *J Nucl Med* 2018;59(8):1225-1233

**ALZET Comments:** 131I-poly(ADP-ribose) polymerase inhibitor (131I-PARPi), radio-isotope (131I); PEG-300, saline, 131I tracer; CSF/CNS; Mice; 1003D; 5 days; 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, M. S. Jorgensen, N. Blume, R. Slaaby, A. Lutzen and B. F. Hansen. 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

**ALZET Comments:** Insulin, human; X10; SC; Mice (nude); 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;.

**Q7117:** C. W. Chua, N. J. Epsi, E. Y. Leung, S. Xuan, M. Lei, B. I. Li, S. K. Bergren, H. Hibshoosh, A. Mitrofanova and M. M. Shen. Differential requirements of androgen receptor in luminal progenitors during prostate regeneration and tumor initiation. *Elife* 2018;7(**ALZET Comments:** Testosterone; Ethanol; SC; Mice; 2004; 28 days; Dose (1.875 µg/hr/day); animal info (Nkx3.1); cancer (Prostate);.

**Q5582:** K. C. Bertrand, C. C. Faria, P. Skowron, A. Luck, L. Garzia, X. Wu, S. Agnihotri, C. A. Smith, M. D. Taylor, S. C. Mack and J. T. Rutka. A functional genomics approach to identify pathways of drug resistance in medulloblastoma. *Acta Neuropathol Commun* 2018;6(1):146

**ALZET Comments:** Foretinib; CSF/CNS (right lateral ventricle); Mice; 2004; 28 days; Dose (6mg/kg); Controls received mp w/ vehicle; animal info (post-natal day 30-35); cancer (medulloblastoma);.

**Q5938:** S. Zhu, Y. Liu, P. C. Wang, X. Gu and L. Shan. Recombinant Immunotoxin Therapy of Glioblastoma: Smart Design, Key Findings, and Specific Challenges. *Biomed Res Int* 2017;2017(7929286

**ALZET Comments:** NZ-1-(scdsFv)-PE38KDEL; Mice (SNG); 3 days; cancer (glioblastoma);no stress (see pg. 10);stability verified by (33-98% of activity 3 days at 37C; verified via incubation);.

**Q6557:** J. Zhou, E. J. Yun, W. Chen, Y. Ding, K. Wu, B. Wang, C. Ding, E. Hernandez, J. Santoyo, R. C. Pong, H. Chen, D. He, J. Zhou and J. T. Hsieh. Targeting 3-phosphoinositide-dependent protein kinase 1 associated with drug-resistant renal cell carcinoma using new oridonin analogs. *Cell Death Dis* 2017;8(3):e2701

**ALZET Comments:** CYD-6-17; SC; Mice; 7 days; Dose (10 mg/kg); Controls received mp w/ vehicle; cancer (renal cell carcinoma); Therapeutic indication (tumor);.

**Q6335:** H. Zhou, P. Y. Mak, H. Mu, D. H. Mak, Z. Zeng, J. Cortes, Q. Liu, M. Andreeff and B. Z. Carter. 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

**ALZET Comments:** PRI-724; Mice; 1004; 4 weeks; Dose (30 mg/kg per day); animal info (8-week-old female NSG mice); cancer (myeloid leukemia);.

**Q5934:** D. Yu, O. F. Khan, M. L. Suva, B. Dong, W. K. Panek, T. Xiao, M. Wu, Y. Han, A. U. Ahmed, I. V. Balyasnikova, H. F. Zhang, C. Sun, R. Langer, D. G. Anderson and M. S. Lesniak. 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

**ALZET Comments:** RNA, small interfering; CSF/CNS (intratumoral); mice (nude); 1002, 2002; 14 days; 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;.

**Q5930:** J. Yang, S. Milasta, D. Hu, A. M. Altahan, R. B. Interiano, J. Zhou, J. Davidson, J. Low, W. Lin, J. Bao, P. Goh, A. C. Nathwani, R. Wang, Y. Wang, S. S. Ong, V. A. Boyd, B. Young, S. Das, A. Shelat, Y. Wu, Z. Li, J. J. Zheng, A. Mishra, Y. Cheng, C. Qu, J. Peng, D. R. Green, S. White, R. K. Guy, T. Chen and A. M. Davidoff. Targeting Histone Demethylases in MYC-Driven Neuroblastomas with Cyclopirox. *Cancer Res* 2017;77(17):4626-4638

**ALZET Comments:** Cyclopirox; SC; Mice (SCID); 1004; 4 weeks; 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  $\mu\text{mol/L}$ );.

**Q5719:** X. Yan and H. Su. 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)

**ALZET Comments:** YM155; Saline; SC; Mice (SCID); 1003D; 2 weeks; 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);.

**Q5923:** Q. Xie and Z. A. Wang. Transcriptional regulation of the Nkx3.1 gene in prostate luminal stem cell specification and cancer initiation via its 3' genomic region. *J Biol Chem* 2017;292(33):13521-13530

**ALZET Comments:** Testosterone; Ethanol, PEG-400; SC; mice (transgenic); 4 weeks; animal info (CK18-CreERT2 transgenic, Nkx3.1, C57BL/6N); cancer (prostate); replacement therapy (testosterone infusion); Dose (1.875  $\mu\text{g/h}$ );.

**Q6546:** Xiang Yan and H. Su. 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)

**ALZET Comments:** YM155; Saline; Mice (nude); 1003D; 2 weeks; 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);.

**Q6272:** W. Wang, J. Yang, Y. Nimiya, K. S. S. Lee, K. Sanidad, W. Qi, E. Sukamtoh, Y. Park, Z. Liu and G. Zhang. omega-3 Polyunsaturated fatty acids and their cytochrome P450-derived metabolites suppress colorectal tumor development in mice. *J Nutr Biochem* 2017;48(29-35)

**ALZET Comments:** Epoxydocosapentaenoic acids; DMSO, PEG 400; SC; Mice; 1004; 1 week; Dose (0.5 mg/kg body weight/day); 50% DMSO: 50% PEG 400 used; Controls received mp w/ vehicle; animal info (C57BL/6 male mice); Epoxydocosapentaenoic acids are  $\omega$ -3 Polyunsaturated fatty acids; cancer (colorectal);.

**Q5893:** N. A. Taylor, S. C. Vick, M. D. Iglesia, W. J. Brickey, B. R. Midkiff, K. P. McKinnon, S. Reisdorf, C. K. Anders, L. A. Carey, J. S. Parker, C. M. Perou, B. G. Vincent and J. S. Serody. Treg depletion potentiates checkpoint inhibition in claudin-low breast cancer. *J Clin Invest* 2017;127(9):3472-3483

**ALZET Comments:** AMD3100; PBS; SC; Mice; 2002; 12 days; Controls received mp w/ vehicle; animal info (female, BALB/c and C57BL/6J); cancer (breast);.

**Q5675:** Y. Sone, S. Takatori, E. Ochi, Y. Zamami, A. Matsuyama, S. Fukuhara, M. Goda, Y. Kitamura and H. Kawasaki. Nerve Growth Factor Facilitates the Innervation of Perivascular Nerves in Tumor-Derived Neovasculature in the Mouse Cornea. *Pharmacology* 2017;99(1-2):57-66

**ALZET Comments:** Nerve growth factor; SC; Mice; 1002; 7 days; Controls received mp w/ saline; animal info (male BALB/c Cr Slc, 5 weeks old); cancer (prostate DU145 or fibrosarcoma HT1080); cardiovascular; Dose (40 ng/h);.

**Q5974:** H. Shimaoka, S. Takeno, K. Maki, T. Sasaki, S. Hasegawa and Y. Yamashita. A cytokine signal inhibitor for rheumatoid arthritis enhances cancer metastasis via depletion of NK cells in an experimental lung metastasis mouse model of colon cancer. *Oncol Lett* 2017;14(3):3019-3027



**ALZET Comments:** Tofacitinib; PEG 300; CSF/CNS; Mice; 2002; 6 days; animal info (Wild-type CD1) ; Controls received mp w/vehicle; dose (15 mg/kg/day); cancer; enzyme inhibitor (JAK3).

**Q5798:** D. Sanchez-Infantes, R. Cereijo, M. Peyrou, I. Piquer-Garcia, J. M. Stephens and F. Villarroya. Oncostatin m impairs brown adipose tissue thermogenic function and the browning of subcutaneous white adipose tissue. *Obesity (Silver Spring)* 2017;25(1):85-93

**ALZET Comments:** Oncostatin; PBS; SC; Mice; 1007D; 7 days; Controls received mp w/ vehicle; animal info (C57BL/6J, 6 weeks old); cancer (breast, ovarian, prostate, Ewing sarcoma); Therapeutic indication (Cancer); Dose (12 ng/g/weight);

**Q6129:** J. Robles-Valero, L. F. Lorenzo-Martin, M. Menacho-Marquez, I. Fernandez-Pisonero, A. Abad, M. Camos, M. L. Toribio, L. Espinosa, A. Bigas and X. R. Bustelo. A Paradoxical Tumor-Suppressor Role for the Rac1 Exchange Factor Vav1 in T Cell Acute Lymphoblastic Leukemia. *Cancer Cell* 2017;32(5):608-623 e9

**ALZET Comments:** DAPT, Compound E; SC; Mice; 1002; 28 days; Dose (4 mg/kg); animal info (C57BL/10); enzyme inhibitor (gamma-secretase); cancer (Acute Lymphoblastic Leukemia);

**Q6063:** A. Raafat, S. Bargo, D. McCurdy and R. Callahan. The ANK repeats of Notch-4/Int3 activate NF-kappaB canonical pathway in the absence of Rbpj and causes mammary tumorigenesis. *Sci Rep* 2017;7(1):13690

**ALZET Comments:** IMD-0354; Saline; SC; Mice; 2001; 6 days; Dose (5, 10 or 20 mg/mouse/week); dose-response (Figure 3); Controls received mp w/ vehicle; animal info (10 week old FVB/N mice); enzyme inhibitor (IκB kinase-β); cancer (breast);

**Q6237:** A. Patnaik, K. D. Swanson, E. Csizmadia, A. Solanki, N. Landon-Brace, M. P. Gehring, K. Helenius, B. M. Olson, A. R. Pyzer, L. C. Wang, O. Elemento, J. Novak, T. B. Thornley, J. M. Asara, L. Montaser, J. J. Timmons, T. M. Morgan, Y. Wang, E. Levantini, J. G. Clohessy, K. Kelly, P. P. Pandolfi, J. M. Rosenblatt, D. E. Avigan, H. Ye, J. M. Karp, S. Signoretti, S. P. Balk and L. C. Cantley. Cabozantinib Eradicates Advanced Murine Prostate Cancer by Activating Antitumor Innate Immunity. *Cancer Discov* 2017;7(7):750-765

**ALZET Comments:** Plerixafor; AMD3100; cabozantinib; Mice; 1007D; 3 days; Dose (90 mg/mL); animal info (male Pb-Cre; Pten<sup>fl/fl</sup>Trp53<sup>fl/fl</sup> mice with tumor); comparison of Plerixafor daily injection vs mp; AMD3100 is a CXCR4 inhibitor; cancer (prostate);

**Q6341:** G. Pascual-Pasto, N. G. Olaciregui, J. A. W. Opezzo, H. Castillo-Ecija, M. Cuadrado-Vilanova, S. Paco, E. M. Rivero, M. Vila-Ubach, C. A. Restrepo-Perdomo, M. Torrebadell, M. Sunol, P. Schaiquevich, J. Mora, G. F. Bramuglia, G. L. Chantada and A. M. Carcaboso. Increased delivery of chemotherapy to the vitreous by inhibition of the blood-retinal barrier. *J Control Release* 2017;264(34-44)

**ALZET Comments:** Topotecan; SC; Mice (nude); 2001D; cancer;

**Q6194:** Nojiri T, Arai M, Suzuki Y, Kumazoe M, Tokudome T, Miura K, Hino J, Hosoda H, Miyazato M, Okumura M, Kawaoka S and K. K. Transcriptome analysis reveals a role for the endothelial ANP-GC-A signaling in interfering with pre-metastatic niche formation by solid cancers. *ONCOTARGET* 2017;8(39):65534-65547

**ALZET Comments:** Atrial natriuretic peptide; Saline; SC; Mice; 1002; 2004; Dose (0.5 μg/kg/min); Controls received mp w/ vehicle; cancer.

**Q6348:** N. Nakamura, T. Matsui, Y. Ishibashi, A. Sotokawauchi, K. Fukami, Y. Higashimoto and S. I. Yamagishi. RAGE-aptamer Attenuates the Growth and Liver Metastasis of Malignant Melanoma in Nude Mice. *Mol Med* 2017;23(295-306)

**ALZET Comments:** RAGE-aptamer; IP; Mice (nude); 42 days; 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);

**Q5357:** F. Muller, S. Stookey, T. Cunningham and I. Pastan. Paclitaxel synergizes with exposure time adjusted CD22-targeting immunotoxins against B-cell malignancies. *ONCOTARGET* 2017;1-12

**ALZET Comments:** HA22- PE24 recombinant immunotoxin; Citrate buffer; IP; Mice; 1007D; 7 days; 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/ml Plasma. This steady state plasma concentration was higher than the IC50 of any of the MCL cell lines tested.

**Q5949:** L. Laborde, F. Oz, M. Ristov, D. Guthy, D. Sterker and P. McSheehy. Continuous low plasma concentrations of everolimus provides equivalent efficacy to oral daily dosing in mouse xenograft models of human cancer. *Cancer Chemother Pharmacol* 2017;80(4):869-878

**ALZET Comments:** Everolimus; SC; Mice; Mice (nude); 1003D; 1002; 3 days; 2 weeks; 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.”

**Q6537:** Kuo-Chang Wen, Pi-Lin Sung, Shie-Liang Hsieh, Yu-Ting Chou, Oscar Kuang-Sheng Lee, Cheng-Wen Wu and P.-H. Wang. α2,3-sialyltransferase type I regulates migration and peritoneal dissemination of ovarian cancer cells. *ONCOTARGET* 2017;8(17):29013-29027

**ALZET Comments:** Soyasaponin I; DMSO; SC; Mice; 1004; 4 weeks; Dose (100µM); Controls received mp w/ vehicle; animal info (8 week old female C57BL/6 mice); enzyme inhibitor (ST3Gall); cancer (ovarian); Therapeutic indication (ascites);

**R0357:** L. Kucerova, E. Durinikova, L. Toro, M. Cihova, S. Miklikova, M. Poturnajova, Z. Kozovska and M. Matuskova. Targeted antitumor therapy mediated by prodrug-activating mesenchymal stromal cells. *Cancer Lett* 2017;408(1-9

**ALZET Comments:** Fluorouracil, 5-; CSF/CNS (ventricle); Rat; cancer (glioblastoma); “The use of Alzet osmotic pumps delivered the prodrug directly to the brain at a constant and defined pace, and therefore reduced the dose of the prodrug required for the same therapeutic effect.” pg.5;.

**Q6474:** Y. Kojima, F. Hayakawa, T. Morishita, K. Sugimoto, Y. Minamikawa, M. Iwase, H. Yamamoto, D. Hirano, N. Imoto, K. Shimada, S. Okada and H. Kiyoi. YM155 induces apoptosis through proteasome-dependent degradation of MCL-1 in primary effusion lymphoma. *Pharmacol Res* 2017;120(242-251

**ALZET Comments:** YM155; DMSO; SC; Mice; 20 days; Dose (5 mg/kg/day); Controls received mp w/ vehicle; animal info (7-week-old male NOD/SCID IL-2RYc-/-); cancer (Primary effusion lymphoma);

**Q6296:** Kim J, Shin JH, Chen CH, Cruz L, Farnebo L, Yang J, Borges P, Kang G, Mochly-Rosen D and S. JB. Targeting aldehyde dehydrogenase activity in head and neck squamous cell carcinoma with a novel small molecule inhibitor. *Oncotarget* 2017;8(32):52345-52356

**ALZET Comments:** Aldi-6; SC; Mice; 2004; 3 weeks; 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);

**Q5842:** M. Kano. AMH/MIS as a contraceptive that protects the ovarian reserve during chemotherapy. *Proceedings of the National Academy of Sciences* 2017;114(9):E1688-E1697

**ALZET Comments:** Mullerian inhibiting substance, recombinant human; Saline; IP; Mice; 1007D; 15 days; Controls received mp w/ vehicle; animal info (6-7 weeks old) ; functionality of mp verified by rhMIS activity; pumps replaced every 5 or 7 days; cancer; half-life is ~ 4 hours (p. E1689); post op. care (carprofen analgesic (2.5 mg/mL) by oral gavage (100 µL)); stability verified by bioassay (“rhMIS activity was remarkably stable, with the material recovered from pumps that had been implanted in mice for 1 wk conserving full biological activity in the rat urogenital ridge bioassay”); “To test the efficacy of rhMIS protein for the preservation of



ovarian reserve, we elected to use osmotic pumps implanted i.p. in C57BL/6N female mice to allow very precise delivery of MIS” pg. E1691; Therapeutic indication (Oncofertility, cancer); Dose (1200 ug/mL);.

**Q6309:** M. Joglekar-Javadekar, S. Van Laere, M. Bourne, M. Moalwi, P. Finetti, P. B. Vermeulen, D. Birnbaum, L. Y. Dirix, N. Ueno, M. Carter, J. Rains, A. Ramachandran, F. Bertucci and K. L. van Golen. Characterization and Targeting of Platelet-Derived Growth Factor Receptor alpha (PDGFRA) in Inflammatory Breast Cancer (IBC). *Neoplasia* 2017;19(7):564-573

**ALZET Comments:** Crenolanib; DMSO; SC; Mice (nude); 1002; 10 days; Dose (15 mg/kg/day); Controls received mp w/ vehicle; animal info (female athymic nude mice); cancer (inflammatory breast);.

**Q6247:** Y. Hayashi, T. Kawakubo-Yasukochi, A. Mizokami, M. Hazekawa, T. Yakura, M. Naito, H. Takeuchi, S. Nakamura and M. Hirata. Uncarboxylated Osteocalcin Induces Antitumor Immunity against Mouse Melanoma Cell Growth. *J Cancer* 2017;8(13):2478-2486

**ALZET Comments:** Osteocalcin; Saline; SC; Mice; 1004; 3 weeks; Dose (7.5 µg/day or 1.5 µg/day); animal info (9-week-old female C57Bl/6N mice); cancer (melanoma); “These results indicated that GluOC administered through a subcutaneous micro-osmotic pump was hematogenously delivered to the isografts to directly exert antitumor effects on B16 melanoma cells.” pg.2480;.

**Q6254:** S. A. Grenald, T. M. Doyle, H. Zhang, L. M. Slosky, Z. Chen, T. M. Largent-Milnes, S. Spiegel, T. W. Vanderah and D. Salvemini. Targeting the S1P/S1PR1 axis mitigates cancer-induced bone pain and neuroinflammation. *Pain* 2017;158(9):1733-1742

**ALZET Comments:** FTY720; SC; Mice; 1007D; 7 days; Dose (1 mg/kg/d); Controls received mp w/ vehicle; animal info (Female BALB/c mice weighing 18-20 g); comparison of single daily injection vs mp; FTY720 aka fingolimod; cancer ();.

**Q5327:** G. Futamura, S. Kawabata, N. Nonoguchi, R. Hiramatsu, T. Toho, H. Tanaka, S. I. Masunaga, Y. Hattori, M. Kirihata, K. Ono, T. Kuroiwa and S. I. Miyatake. Evaluation of a novel sodium borocaptate-containing unnatural amino acid as a boron delivery agent for neutron capture therapy of the F98 rat glioma. *Radiat Oncol* 2017;12(1):26

**ALZET Comments:** Boron-10 containing sodium borocaptate, ACBC-BSH (Boron-10 derivative); CSF/CNS; Rat; 2001D; 24 hours; ALZET brain infusion kit used; comparison of IV injections vs mp; cancer (F98 glioma); brain tissue distribution; “we succeeded in achieving a high accumulation of boron in the tumors of rats in which ACBC-BSH was administered by CED, compared with ACBC-BSH administered intravenously” pg. 9 ; ACBC-BSH is a boron-10 containing sodium borocaptate derivative, 1-amino-3-fluorocyclobutane-1-carboxylic acid; Dose (1.2 mg/kg);.

**Q6379:** J. Fazzari, M. D. Balenko, N. Zagal and G. Singh. Identification of capsazepine as a novel inhibitor of system xc(-) and cancer-induced bone pain. *J Pain Res* 2017;10(9):915-925

**ALZET Comments:** Capsazepine; IP; Mice (nude); 1004; 28 days; Dose (5 and 10 mg/kg); animal info (4-6 week old female athymic BALB/c nu/nu homozygous nude mice); behavioral testing (Dynamic Plantar Aesthesiometer and the Dynamic Weight Bearing); Capsazepine is an inhibitor of xCT in MDA-MB-231 cancer cells;.

**Q6095:** A. Debebe, V. Medina, C. Y. Chen, I. M. Mahajan, C. Jia, D. Fu, L. He, N. Zeng, B. W. Stiles, C. L. Chen, M. Wang, K. R. Aggarwal, Z. Peng, J. Huang, J. Chen, M. Li, T. Dong, S. Atkins, Z. Borok, W. Yuan, K. Machida, C. Ju, M. Kahn, D. Johnson and B. L. Stiles. Wnt/beta-catenin activation and macrophage induction during liver cancer development following steatosis. *Oncogene* 2017;36(43):6020-6029

**ALZET Comments:** ICG-001; Saline; SC; Mice; 1004; 28 days; Dose (0.8 mg/day); Controls received mp w/ vehicle; animal info (one month old Pten-null mice); ICG-001 is a small molecule inhibitor that blocks the interaction of β-catenin with cAMP binding protein; cancer (liver);.

**Q6390:** Davidi S, Fremder E, Kan T, Raviv Z, Timaner M, Karin N, Hershkovitz D, Arohneim A and S. Y. The antiangiogenic role of the pro-inflammatory cytokine interleukin-31. *Oncotarget* 2017;8(10):16430-16444

**ALZET Comments:** IL31, recombinant murine; PBS; SC; Mice; 1002; 2 weeks; Dose (0.7 µg/day); Controls received mp w/ vehicle; animal info (C57Bl/6 tumor-bearing mice); cancer ();.





**Q6018:** J. Cornillie, A. Wozniak, P. Pokreisz, A. Casazza, L. Vreys, J. Wellens, U. Vanleeuw, Y. K. Gebreyohannes, M. Debiec-Rychter, R. Sciot, D. Hompes and P. Schoffski. In Vivo Antitumoral Efficacy of PhAc-ALGP-Doxorubicin, an Enzyme-Activated Doxorubicin Prodrug, in Patient-Derived Soft Tissue Sarcoma Xenograft Models. *Mol Cancer Ther* 2017;16(8):1566-1575

**ALZET Comments:** Doxorubicin hydrochloride; PBS; IP; Mice; 1007D; 7 days; Controls received mp w/ vehicle; cancer (Sarcoma); Therapeutic indication (Cancer; soft tissue sarcoma; xenograft model);.

**Q6015:** J. Ciccolini, D. Barbolosi, C. Meille, A. Lombard, C. Serdjebi, S. Giacometti, L. Padovani, E. Pasquier and N. Andre. Pharmacokinetics and Pharmacodynamics-Based Mathematical Modeling Identifies an Optimal Protocol for Metronomic Chemotherapy. *Cancer Res* 2017;77(17):4723-4733

**ALZET Comments:** Gemcitabine; SC; Mice; 28 days; animal info (4 weeks old)cancer;Therapeutic indication (Chemotherapy); Dose (1 mg/kg/day);.

**Q6103:** S. Y. Cho, J. Y. Han, D. Na, W. Kang, A. Lee, J. Kim, J. Lee, S. Min, J. Kang, J. Chae, J. I. Kim, H. Park, W. S. Lee and C. Lee. 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

**ALZET Comments:** YM155; Saline; SC; Mice; 1007D; 21 days; 0.9% saline used; Controls received mp w/ vehicle; animal info (4-week-old NSG female mice); cancer (colorectal);.

**Q6403:** J. Chen, Y. Zhang, M. N. Petrus, W. Xiao, A. Nicolae, M. Raffeld, S. Pittaluga, R. N. Bamford, M. Nakagawa, S. T. Ouyang, A. L. Epstein, M. E. Kadin, A. Del Mistro, R. Woessner, E. S. Jaffe and T. A. Waldmann. Cytokine receptor signaling is required for the survival of ALK- anaplastic large cell lymphoma, even in the presence of JAK1/STAT3 mutations. *Proc Natl Acad Sci U S A* 2017;114(15):3975-3980

**ALZET Comments:** Ruxolitinib; Mice; 7 days; Dose (50 mg/kg/d); cancer (lymphoma);.

**Q5765:** N. Chaudary, M. Pintilie, S. Jelveh, P. Lindsay, R. P. Hill and M. Milosevic. Plerixafor Improves Primary Tumor Response and Reduces Metastases in Cervical Cancer Treated with Radio-Chemotherapy. *Clin Cancer Res* 2017;23(5):1242-1249

**ALZET Comments:** Plerixafor; SC; Mice; 3 weeks, 24 days; animal info (6-8 weeks old) ; cancer (Cervical); Therapeutic indication (Cervical cancer); Dose (5 mg/kg/day);.

**Q5735:** R. Callahan, B. A. Chestnut and A. Raafat. Original Research: Featured Article: Imatinib mesylate (Gleevec) inhibits Notch and c-Myc signaling: Five-day treatment permanently rescues mammary development. *Exp Biol Med* (Maywood) 2017;242(1):53-67

**ALZET Comments:** Imatinib mesylate; Saline; SC; Mice (pregnant); 2001; 5 days; Controls received mp w/ vehicle; animal info (10 weeks old); cancer (Breast); Imatinib mesylate a.k.a Gleevec ; Therapeutic indication (Mammary gland development, Breast cancer); Dose (21 mg/mouse/week); enzyme inhibitor (tyrosine kinase);.

**Q5115:** Y. Zhao, D. Masiello, M. McMillian, C. Nguyen, Y. Wu, E. Melendez, G. Smbatyan, A. Kida, Y. He, J. L. Teo and M. Kahn. CBP/catenin antagonist safely eliminates drug-resistant leukemia-initiating cells. *Oncogene* 2016;35(28):3705-17

**ALZET Comments:** ICG-001; Saline; Mice (NSG); 1004; 28 days; Controls received mp w/ vehicle; animal info (female, NSG, 8-10 weeks old); cancer (chronic myelogenous leukemia K562); Dose (50 mg/kg/day);.

**Q5116:** Y. Zhao, L. Detering, D. Sultan, M. L. Cooper, M. You, S. Cho, S. L. Meier, H. Luehmann, G. Sun, M. Rettig, F. Dehdashti, K. L. Wooley, J. F. DiPersio and Y. Liu. Gold Nanoclusters Doped with (64)Cu for CXCR4 Positron Emission Tomography Imaging of Breast Cancer and Metastasis. *ACS Nano* 2016;10(6):5959-70

**ALZET Comments:** AMD3100; PBS; SC; Mice; 2001; 24 hours; animal info (female, BALB/cve); cancer (breast 4T1); Dose (1 mg/day);.

**Q5111:** W. Zhang, Y. Liu, Y. F. Li, Y. Yue, X. Yang and L. Peng. Targeting of Survivin Pathways by YM155 Inhibits Cell Death and Invasion in Oral Squamous Cell Carcinoma Cells. *Cell Physiol Biochem* 2016;38(6):2426-37



**ALZET Comments:** YM155; SC; Mice (nude); 1007D; 7 days; Controls received mp w/ vehicle; animal info (female, nude, 5 weeks old); cancer (Oral squamous cell carcinoma SCC9); Dose (5 mg/kg/day); xenograph model;.

**Q5107:** M. Zenitani, T. Nojiri, S. Uehara, K. Miura, H. Hosoda, T. Kimura, K. Nakahata, M. Miyazato, H. Okuyama and K. Kangawa. C-type natriuretic peptide in combination with sildenafil attenuates proliferation of rhabdomyosarcoma cells. *Cancer Med* 2016;5(5):795-805

**ALZET Comments:** C-type natriuretic peptide; SC; Mice (nude); 1003D; 3 days; 4 weeks; Controls received mp w/ vehicle; animal info (male, C57BL6 or BALB/c nu/ny, 5 weeks old); functionality of mp verified by plasma levels (figure 4B); cancer (rhabdomyosarcoma RD-GC-B); xenograft model; Dose (2.5 ug/kg/min); Resultant plasma level (~600 pmol/L; see figure 4B);.

**Q5501:** X. Yang, Z. Li, L. Zhang, J. He and L. Q. Sun. Selection and antitumor activity of anti-Bcl-2 DNAzymes. *Biochem Biophys Res Commun* 2016;479(3):544-550

**ALZET Comments:** DNAzyme DT912; Saline; IP; Mice (nude); 1002; 14 days; animal info (female, BLAB/c, 4-6 weeks old); cancer (Prostate PC3); "we here employed an osmotic pump as a delivery vehicle for DNAzymes via the abdominal route and demonstrated a viable means for efficient DNAzyme delivery" pg 548; Dose (12.5 mg/kg/day);.

**Q5091:** X. Wang, C. Shi, L. Zhang, A. Bodman, D. Guo, L. Wang, W. A. Hall, S. Wilkens and J. Luo. Affinity-controlled protein encapsulation into sub-30 nm telodendrimer nanocarriers by multivalent and synergistic interactions. *Biomaterials* 2016;101(258-71

**ALZET Comments:** Telodendrimer nanoparticles, peptide-incorporated; CSF/CNS (Intratatumoral); Mice (nude); 7 days; Controls received mp w/ free peptide; animal info (female, athymic nude NCRU-Sp/Sp, 8 weeks old); cancer (glioblastoma U87); tissue perfusion (intratumoral); pumps primed overnight at 37C; Dose (0.5 ug/h); Brain coordinates (0.5 mm anterior to bregma and 2.5 mm lateral of midline);.

**Q5078:** Y. Uchi, H. Takeuchi, S. Matsuda, Y. Saikawa, H. Kawakubo, N. Wada, T. Takahashi, R. Nakamura, K. Fukuda, T. Omori and Y. Kitagawa. CXCL12 expression promotes esophageal squamous cell carcinoma proliferation and worsens the prognosis. *BMC Cancer* 2016;16(514

**ALZET Comments:** AMD3100; SC; Mice (nude); 2001; 14 days; Controls received mp w/ 0.1% BSA; animal info (female, BALB/c nude, 6 weeks old); pumps replaced every week; cancer (Esophageal squamous cell carcinoma TE4); xenograft model;.

**Q4892:** T. R. Tuttle, M. L. Mierzwa, S. I. Wells, S. R. Fox and N. Ben-Jonathan. The cyclic GMP/protein kinase G pathway as a therapeutic target in head and neck squamous cell carcinoma. *Cancer Letters* 2016;370(279-285

**ALZET Comments:** Tadalafil; PEG 400; SC; Mice; 1004; 4 weeks; Controls received mp w/ vehicle; animal info (female, nu/nu athymic, 8 weeks old); cancer (head and neck; CAL 27); stress/adverse reaction: (see pg. 283) "There were no observed changes in weight or behavior of the treated mice"; xenograph study; Dose (1 mg/kg/day);.

**Q5212:** T. Tamagawa, M. Shinoda, K. Honda, A. Furukawa, K. Kaji, H. Nagashima, R. Akasaka, J. Chen, B. J. Sessle, Y. Yonehara and K. Iwata. Involvement of Microglial P2Y12 Signaling in Tongue Cancer Pain. *J Dent Res* 2016;95(10):1176-82

**ALZET Comments:** MRS2395; DMSO; PBS; CSF/CNS (cisterna magna); Rat; 2002; 14 days; Controls received mp w/ vehicle; animal info (male, Fischer, 100-200g); 25% DMSO used; cancer (tongue squamous cell carcinoma SCC-158, JCRB0231; JCRB); behavioral testing (head-withdrawal); tissue perfusion (cisterna magna); used PE tubing 0.8mm diameter; MRS2395 is an P2Y12R antagonist;.

**Q6665:** P. Sini, U. Gurtler, S. K. Zahn, C. Baumann, D. Rudolph, R. Baumgartinger, E. Strauss, C. Haslinger, U. Tontsch-Grunt, I. C. Waizenegger, F. Solca, G. Bader, A. Zoepfel, M. Treu, U. Reiser, P. Garin-Chesa, G. Boehmelt, N. Kraut, J. Quant and G. R. Adolf. Pharmacological Profile of BI 847325, an Orally Bioavailable, ATP-Competitive Inhibitor of MEK and Aurora Kinases. *Mol Cancer Ther* 2016;15(10):2388-2398



**ALZET Comments:** BI 847325; Cyclodextrin, 2-hydroxypropyl-b-; SC; Mice (transgenic); Dose (20 mg/kg/day); 25% Cyclodextrins used ; animal info (Eight- to 10-week-old female BomTac:NMRI-Foxn1nu mice); enzyme inhibitor (ATP-competitive dual inhibitor of MEK and Aurora kinases); cancer (melanoma);.

**Q4883:** E. S. Shinya Sento, Tetsuya Yamamoto. Application of a Persistent Heparin Treatment Inhibits the Malignant Potential of Oral Squamous Carcinoma Cells Induced by Tumor Cell-Derived Exosomes. *PLoS One* 2016;11(2):

**ALZET Comments:** Heparin; SC; Mice; 2004; 27 days; Controls received mp w/ saline; animal info (BALB/c nude, 5 weeks old); cancer (oral squamous carcinoma OSC-4);.

**Q6659:** Z. Segaula, J. Leclercq, V. Verones, N. Flouquet, M. Lecoeur, L. Ach, N. Renault, A. Barczyk, P. Melnyk, P. Berthelot, X. Thuru and N. Lebegue. Synthesis and Biological Evaluation of

N-[2-(4-Hydroxyphenylamino)-pyridin-3-yl]-4-methoxy-benzenesulfonamide (ABT-751) Tricyclic Analogues as Antimitotic and Antivascular Agents with Potent in Vivo Antitumor Activity. *J Med Chem* 2016;59(18):8422-40

**ALZET Comments:** Sulfonamide ABT-751; N-[2(4-Methoxyphenyl)ethyl]-1,2-dihydropyrimidino[2,1-b]quinazolin-6-one; Saline; PEG 400; Tween 80; SC; Mice; 2002; 14 days; Dose (5 mg/kg/day, 25mg/kg/day, 50 mg/kg/day); 0.9% NaCl containing; 5% polyethylene glycol 400; 0.5% Tween 80) used; Controls received mp w/ vehicle; animal info (B16F10 mice); N-[2(4-Methoxyphenyl)ethyl]-1,2-dihydropyrimidino[2,1-b]quinazolin-6-one aka 16a; cancer (melanoma); Compounds are tricyclic quinazolinone or benzothiadiazine derivatives; Therapeutic indication (tumor);.

**Q6652:** S. Ribback, V. Sailer, E. Bohning, J. Gunther, J. Merz, F. Steinmuller, K. Utpatel, A. Cigliano, K. Peters, M. G. Pilo, M. Evert, D. F. Calvisi and F. Dombrowski. The Epidermal Growth Factor Receptor (EGFR) Inhibitor Gefitinib Reduces but Does Not Prevent Tumorigenesis in Chemical and Hormonal Induced Hepatocarcinogenesis Rat Models. *Int J Mol Sci* 2016;17(10):

**ALZET Comments:** Uridine, bromodeoxy; Rat; 2ML1; 7 days; animal info (inbred male and female Lewis rats); 5-Bromo-20-deoxyuridine AKA (BrdU); cancer (Hepatocellular carcinoma);.

**Q6630:** L. Nguyen, E. I. Ager, J. Neo and C. Christophi. Regulation of colorectal cancer cell epithelial to mesenchymal transition by the renin angiotensin system. *J Gastroenterol Hepatol* 2016;31(10):1773-1782

**ALZET Comments:** Angiotensin II; CGP42112A; SC; Mice; 1004; 21 days; Dose (31.25 µg/kg/h (Angiotensin II); 0.6 µg/kg/h (CGP42112A)); animal info (6to 8-week-old male CBA mice with induced liver metastases); cancer (colorectal);.

**Q6626:** F. Muller, T. Cunningham, X. F. Liu, A. S. Wayne and I. Pastan. Wide Variability in the Time Required for Immunotoxins to Kill B Lineage Acute Lymphoblastic Leukemia Cells: Implications for Trial Design. *Clin Cancer Res* 2016;22(19):4913-4922

**ALZET Comments:** HA22; PBS; IP; Mice; 7 days; 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);.

**Q6623:** T. Morishita, F. Hayakawa, K. Sugimoto, M. Iwase, H. Yamamoto, D. Hirano, Y. Kojima, N. Imoto, T. Naoe and H. Kiyoi. 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

**ALZET Comments:** Verteporfin; SC; Mice; 7 days; Dose (140 mg/kg/day); Controls received mp w/ vehicle; animal info (NOG mice); Resultant plasma level (654 nM); cancer (leukemia);.

**Q5420:** M. Morales-Cruz, A. Cruz-Montanez, C. M. Figueroa, T. Gonzalez-Robles, J. Davila, M. Inyushin, S. A. Loza-Rosas, A. M. Molina, L. Munoz-Perez, L. Y. Kucheryavykh, A. D. Tinoco and K. Griebenow. Combining Stimulus-Triggered Release and Active Targeting Strategies Improves Cytotoxicity of Cytochrome c Nanoparticles in Tumor Cells. *Mol Pharm* 2016;13(8):2844-54

**ALZET Comments:** Nanoparticles, Cytochrome C-based; Saline; CSF/CNS; Mice; 2004; 3 days; Controls received mp w/ vehicle; animal info (C57BL/6 mice bearing GL261 glioma tumors); functionality of mp verified by measurement of tumor size; ALZET brain infusion kit 3 used; cancer (Glioma tumor model); Test of therapeutic potential of Cyt c-based NP's (nanoparticles); Therapeutic indication (tumor growth); Dose (100 mg/mL);.



**R0358:** L. A. Meyer, J. Fritz, M. Pierdant-Mancera and D. Bagnard. Current drug design to target the Semaphorin/Neuropilin/Plexin complexes. *Cell Adh Migr* 2016;10(6):700-708

**ALZET Comments:** Semaphorin 3E; Mice; cancer; Fig. 1 on p. 703 illustrates the major pathological conditions in which semaphorins have been shown to produce a potential therapeutic effect. The delivery mode (including ALZET pump) is mentioned for each experimental in vivo models.

**Q5446:** A. G. McLoed, T. P. Sherrill, D. S. Cheng, W. Han, J. A. Saxon, L. A. Gleaves, P. Wu, V. V. Polosukhin, M. Karin, F. E. Yull, G. T. Stathopoulos, V. Georgoulas, R. Zaynagetdinov and T. S. Blackwell. Neutrophil-Derived IL-1beta Impairs the Efficacy of NF-kappaB Inhibitors against Lung Cancer. *Cell Rep* 2016;16(1):120-132

**ALZET Comments:** Anakinra; PBS; SC; Mice; 2002; 4 weeks; Controls received mp w/ vehicle; animal info (IKKbDmye mice); pumps replaced every 2 weeks; cancer (lung cancer model); Anakinra aka IL-1ra (interleukin-1ra); Anakinra blocks IL-1(beta) signaling; IL-1 receptor antagonist; reduces the number of AAH lesions in lungs; Dose (60 mg/kg/day);.

**Q6614:** D. Markowitz, C. Powell, N. L. Tran, M. E. Berens, T. C. Ryken, M. Vanan, L. Rosen, M. He, S. Sun, M. Symons, Y. Al-Abed and R. Ruggieri. Pharmacological Inhibition of the Protein Kinase MRK/ZAK Radiosensitizes Medulloblastoma. *Mol Cancer Ther* 2016;15(8):1799-808

**ALZET Comments:** M443; PBS; DMSO; CSF/CNS (intratumoral); Mice (nude); 2 weeks; 0.01% DMSO used; animal info (4 week old female athymic mice); enzyme inhibitor (MRK); Brain coordinates (2 mm to the right and 1 mm posterior to the lambda); cancer (Medulloblastoma); Industry authored (Fatimo Innovation LLC);.

**Q5409:** H. Lui, M. Kurtoglu and J. Lampidis. Combining 2-deoxy-D-glucose with fenofibrate leads to tumor cell death mediated by simultaneous induction of energy and ER stress. *ONCOTARGET* 2016;7(24):36461-36473

**ALZET Comments:** Fenofibrate; Glucose, 2-Deoxy; Saline; SC; Mice; 62 Days; Controls received mp w/ vehicle and oral gavage; cancer (human melanoma xenograft model); dose-response (pg 36469); toxicology; "slow-release pump seems to be an effective way to deliver 2-DG" pg 36470; Oral gavage vs. mp; dose given via mp requires 3 times lower total dose than IP injection (3x/week); Therapeutic indication (tumor growth); Dose (FF 100 mg/kg/day, 41 ug/ml/hr);.

**Q6169:** K. B. Lorvik, C. Hammarstrom, M. Fauskanger, O. A. Haabeth, M. Zangani, G. Haraldsen, B. Bogen and A. Corthay. Adoptive Transfer of Tumor-Specific Th2 Cells Eradicates Tumors by Triggering an In Situ Inflammatory Immune Response. *Cancer Res* 2016;76(23):6864-6876

**ALZET Comments:** S-(2-boronoethyl)-L-cysteine; SC; Mice (SCID); 14 days; Dose (mg/kg/d); Controls received mp w/ vehicle; animal info (TCR-transgenic SCID mice); enzyme inhibitor (arginase); cancer ();.

**Q5614:** H. Liu. Combining 2-deoxy-D-glucose with fenofibrate leads to tumor cell death mediated by simultaneous induction of energy and ER stress. *ONCOTARGET* 2016;7(24):36461-73

**ALZET Comments:** Glucose, 2-deoxy, Fenofibrate; PBS, methylcellulose, tween-80; SC; Mice (nude); Controls received mp w/ vehicle; animal info (8 weeks old); cancer (Melanoma); "The fact that slow-release pump seems to be an effective way to deliver 2-DG and that combined with oral FF shows significant anti-tumor activity in vivo provides promise for developing this combination clinically and others that combine 2-DG with agents that act synergistically to selectively increase energy and ER stress to a level that is toxic to numerous tumor cell types." Pg36470; Therapeutic indication (tumor cell death); Dose (FF: 100 mg/kg/day, 2-DG: 41ug/mL/hr);.

**Q4853:** R. Lia, Y. Zhang, M. A. Mohameda, X. Weia and C. Chenga. Macrophages play an essential role in the long effects of low-dosephotodynamic therapy on vessel permeability. *The International Journal of Biochemistry and Cell Biology* 2016;71(55-61

**ALZET Comments:** AMD3100; PBS; SC; Mice; 7 days; Controls received mp w/ vehicle; animal info (male, A/HE, 12 weeks old); cancer (lung); immunology;.



**Q6051:** A. Kurdi, M. De Doncker, A. Leloup, H. Neels, J. P. Timmermans, K. Lemmens, S. Apers, G. R. Y. De Meyer and W. Martinet. Continuous administration of the mTORC1 inhibitor everolimus induces tolerance and decreases autophagy in mice. *Br J Pharmacol* 2016;173(23):3359-3371

**ALZET Comments:** Everolimus; DMSO, Propylene glycol, ethanol, Tween 20; SC; Mice; 1003D; 1004; 3 or 28 days; Controls received mp w/ vehicle; animal info (13–15 weeks old). Vehicle = 50% DMSO, 40% propylene glycol and 10% absolute ethanol and supplemented with 0.4 µL/mL Tween 20. Everolimus was soluble and stable at 37°C for at least 1 month. “The devices are easy to use, provide constant drug plasma levels for various periods depending on the chosen model and induce only minimal stress in the animals techniques such as intraperitoneal injections or oral gavage, osmotic minipumps, once implanted, require little attention from the investigator.” Therapeutic indication (immunosuppressive and cancer therapy); Dose (1.5 mg•kg<sub>-1</sub>);

**Q4845:** A. G. Kotini, E. d. Stanchina, M. Themeli, M. Sadelain and E. P. Papapetrou. Escape Mutations, Ganciclovir Resistance, and Teratoma Formation in Human iPSCs Expressing an HSVtk Suicide Gene. *MOLECULAR THERAPY* 2016;5(**ALZET Comments:** Ganciclovir; PBS; SC; Mice (NSG); 1007D; 2 weeks; animal info (female, NSG, 8 weeks old); pumps replaced every week; cancer (teratoma); Dose (5 mg/kg/day);

**Q5838:** H. K. Kim, S. H. Hwang and S. Abdi. Tempol Ameliorates and Prevents Mechanical Hyperalgesia in a Rat Model of Chemotherapy-Induced Neuropathic Pain. *Front Pharmacol* 2016;7(532

**ALZET Comments:** Tempol; Saline; IP; Rat; 2001; 7 days; Controls received mp w/ vehicle; animal info (200-350 g); cancer (Chemotherapy); behavioral testing; Therapeutic indication (Pain study, chemotherapy-induced neuropathic pain); Dose (200 mg/kg);

**Q5621:** H. Kim. Pentoxifylline Ameliorates Mechanical Hyperalgesia in a Rat Model of Chemotherapy-Induced Neuropathic Pain. *Pain Physician* 2016;19(4):589-600

**ALZET Comments:** Pentoxifylline; Saline; IP; Rat; 2001; 7 days; Controls received mp w/ vehicle; animal info (200-350g); cancer; Chronic Pain study; Therapeutic indication (Chemotherapy); Dose (.96 mg/day);

**Q4841:** A. Kawamura, S. Miyagawa, S. Fukushima, T. Kawamura, N. Kashiyama, E. Ito, T. Watabe, S. Masuda, K. Toda, J. Hatazawa, E. Morii and Y. Sawa. Teratocarcinomas Arising from Allogeneic Induced Pluripotent Stem Cell-Derived Cardiac Tissue Constructs Provoked Host Immune Rejection in Mice. *SCIENTIFIC REPORTS* 2016;6(1-13

**ALZET Comments:** Tacrolimus; SC; Mice; 1002; 27 days; cancer (teratocarcinoma); immunology; animal info (BALB/c); functionality of mp verified by plasma levels; pumps replaced after 14 days; BLI; Dose (1.5 mg/kg);

**Q4840:** Z. Jiang, S. Wu, X. Wu, J. Zhong, A. Lv, J. Jiao and Z. Chen. Blocking mammalian target of rapamycin alleviates bone cancer pain and morphine tolerance via u-opioid receptor. *International Journal of Cancer* 2016;138(2013-2020

**ALZET Comments:** Rapamycin; CTOP; LY297002; DMSO; saline; CSF/CNS (intrathecal); Rat; 14 days; Controls received mp w/ saline; animal info (Wistar, 200-250g); 50% DMSO used; cancer (breast; bone); dose-response (pg 2015); behavioral testing (hindpaw withdrawal latency); Rapamycin is an mTOR antagonist; CTOP is an MOR antagonist; LY297002 an a PI3K inhibitor;

**Q4906:** P. Jeffrey S. Willey, M. Daniel N. Bracey, P. Patricia E. Gallagher, P. E. Ann Tallant, M. Walter F. Wiggins, PhD,, P. Michael F. Callahan, P. Thomas L. Smith and M. Cynthia L. Emory. Angiotensin-(1-7) Attenuates Skeletal Muscle Fibrosis and Stiffening in a Mouse Model of Extremity Sarcoma Radiation Therapy. *JOURNAL OF BONE AND JOINT SURGERY-AMERICAN VOLUME* 2016;98(48-55

**ALZET Comments:** Angiotensin (1-7); SC; Mice; 2004; animal info (male, CD-1, 25g); cancer (sarcoma); cardiovascular; peptides; Dose (24 ug/kg/hr);

**Q5374:** M. A. Hossain, M. Kocan, S. T. Yao, S. G. Royce, V. B. Nair, C. Siwek, N. A. Patil, I. P. Harrison, K. J. Rosengren, S. Selemidis, R. J. Summers, J. D. Wade, R. A. D. Bathgate and C. S. Samuel. A single-chain derivative of the relaxin hormone is a functionally selective agonist of the G protein-coupled receptor, RXFP1. *Chem. Sci.* 2016;7(6):3805-3819

**ALZET Comments:** Relaxin, H2; B7-33; Saline; SC, IP; Mice, Rat; 1007D, 2002, 2ML4; 8 days, 14 days, 28 days; Controls received mp w/ vehicle; animal info (Adult, male Sprague-dawley rats); functionality of mp verified by blood pressure tumor



weight to body weight; cancer (Prostate tumors); cardiovascular; B7-33 is a H2 relaxin B-chain-only analogue, represents the first functionally selective agonist of GPCR, RXFP1 complex; Dose (H2 relaxin, B7-33 0.5 mg/kg/day in rats; H2 relaxin 0.15, 0.5 mg/kg/day, B7-33 0.075, 0.25 mg/kg/day in mice); Resultant plasma level (20-40 ng/mL);.

**Q5866:** K. M. Henkels, N. R. Muppani and J. Gomez-Cambronero. 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

**ALZET Comments:** FIPI, VU0155072-2; DMSO; SC; Mice (SCID); 1004; 4-5 weeks; 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);.

**Q5864:** Y. Hanaoka, Y. Yamaguchi, H. Yamamoto, M. Ishii, T. Nagase, H. Kurihara, M. Akishita and Y. Ouchi. In Vitro and In Vivo Anticancer Activity of Human beta-Defensin-3 and Its Mouse Homolog. *Anticancer Res* 2016;36(11):5999-6004

**ALZET Comments:** Defb14 peptide; PBS; SC; Mice; 2002; 9 days; Controls received mp w/ vehicle; animal info (3 months old) ; cancer (Lewis lung carcinoma); good methods (In the vehicle-treated group, an ALZET MINI-Osmotic Pump containing 0.01% ascorbic acid in PBS was implanted subcutaneously, near the tumor. At the start of the infusion, the palpable tumor size was measured. After 9 days of infusion, the weights of the excised tumors was determined.); peptides; Therapeutic indication (Cancer); Dose (4.17 mg/ml);.

**Q5861:** I. V. Guzhova and B. A. Margulis. HSP70-based anti-cancer immunotherapy. *Hum Vaccin Immunother* 2016;12(10):2529-2535

**ALZET Comments:** HSP70, human recomb.; CSF/CNS (intratumoral); Rat; comparison of intracranial injections vs mp; cancer (Glioma); peptides; "Such injections, particularly those done using an osmotic pump, caused a significant delay in tumor growth and increase the survival of tumor-bearing animals." pg 2532; Therapeutic indication (Cancer, Glioma);.

**Q5158:** M. Gujrati, A. Vaidya and Z. R. Lu. Multifunctional pH-Sensitive Amino Lipids for siRNA Delivery. *Bioconjug Chem* 2016;27(1):19-35

**ALZET Comments:** RNA, small interfering/EHCO; PEGylated EHCO; Mice (nude); 14 days; Controls received treated with nonspecific PEGylated EHCO/siGFP nanoparticles (PEGGFP) and non-PEGylated EHCO/HIF-1 $\alpha$ ; cancer; gene therapy, RNA nanoparticle infusion; peptides; "These results indicate that PEGylation can significantly improve the stability of EHCO/siRNA nanoparticles during storage in solution, possibly by preventing the aggregation of the nanoparticles and providing better protection to the siRNA cargo from degradation" (pg 31);.

**Q6040:** B. Gerby, D. F. Veiga, J. Krosi, S. Nourreddine, J. Ouellette, A. Haman, G. Lavoie, I. Fares, M. Tremblay, V. Litalien, E. Ottoni, M. Kovic, D. Geoffrion, J. Ryan, P. S. Maddox, J. Chagraoui, A. Marinier, J. Hebert, G. Sauvageau, B. H. Kwok, P. P. Roux and T. Hoang. High-throughput screening in niche-based assay identifies compounds to target preleukemic stem cells. *J Clin Invest* 2016;126(12):4569-4584

**ALZET Comments:** Methoxyestradiol, 2-; DMSO, PEG; SC; Mice; 2001; 7 days; Controls received mp w/ vehicle; animal info (C57BL6/J ; 50% DMSO; 50% PEG400 ; cancer (Leukemia); 2-methoxyestradiol (2-ME2) is an estrogen derivative ; Therapeutic indication (Cancer, chemotherapy); Dose (40 mg/kg/day);.

**Q5815:** S. Fuseya, K. Yamamoto, H. Minemura, S. Yamaori, T. Kawamata and M. Kawamata. Systemic QX-314 Reduces Bone Cancer Pain through Selective Inhibition of Transient Receptor Potential Vanilloid Subfamily 1-expressing Primary Afferents in Mice. *Anesthesiology* 2016;125(1):204-18

**ALZET Comments:** QX-314; Saline; SC; Mice; 1003D; 14 days; Controls received mp w/ vehicle; animal info (20-25g); cancer; behavioral testing (pain related behavior); Therapeutic indication (Bone cancer, pain);



Dose (3, 5 mg/kg);.

**Q5346:** R. D. Feldman, Q. Ding, Y. Hussain, L. E. Limbird, J. G. Pickering and R. Gros. Aldosterone mediates metastatic spread of renal cancer via the G protein-coupled estrogen receptor (GPER). *FASEB J* 2016;30(6):2086-96

**ALZET Comments:** Aldosterone; G protein-coupled estrogen receptor 15 antagonist; SC; Mice; 1004; 2 weeks; Controls received mp w/ vehicle; animal info (BALB/c male mice, 2 month old); cancer (Orthotopic renal cancer); dose-response (pg. 2093); Dose (200 ug/kg/day for both);.

**Q5808:** Y. Fan, L. Liu, K. Fang, T. Huang, L. Wan, Y. Liu, S. Zhang, D. Yan, G. Li, Y. Gao, Y. Lv, Y. Chen and Y. Tu. Resveratrol Ameliorates Cardiac Hypertrophy by Down-regulation of miR-155 Through Activation of Breast Cancer Type 1 Susceptibility Protein. *J Am Heart Assoc* 2016;5(4):

**ALZET Comments:** Agomir-155; Mice; 1007D; animal info (8 weeks old Kunming mice)cancer (Breast cancer Type 1);cardiovascular;Therapeutic indication (BRCA1, resveratrol);Dose (40 nmol/L);.

**Q5344:** U. Eskiocak, V. Ramesh, J. G. Gill, Z. Zhao, S. W. Yuan, M. Wang, T. Vandergriff, M. Shackleton, E. Quintana, T. M. Johnson, R. J. DeBerardinis and S. J. Morrison. Synergistic effects of ion transporter and MAP kinase pathway inhibitors in melanoma. *Nat Commun* 2016;7(12336

**ALZET Comments:** Digoxin; Promethylcellulose, Tween80, DMSO; SC; mice; 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);.

**Q5774:** M. K. Conley-LaComb, L. Semaan, R. Singareddy, Y. Li, E. I. Heath, S. Kim, M. L. Cher and S. R. Chinni. Pharmacological targeting of CXCL12/CXCR4 signaling in prostate cancer bone metastasis. *Mol Cancer* 2016;15(1):68

**ALZET Comments:** Plerixafor; saline; mice; 2002; 7 days; Controls received mp w/ vehicle; cancer (Prostate cancer); Therapeutic indication (Prostate cancer, Bone metastasis); Dose (20 mg/ml);.

**Q5634:** W. Chen. Targeting XBP1-mediated  $\beta$ -catenin expression associated with bladder cancer with newly synthetic Oridonin analogues. *Oncotarget* 2016;7(35):56842-56854

**ALZET Comments:** CYD 6-17; DMSO; SC; Mice (SCID); 7 days; Controls received mp w/ vehicle; cancer (Bladder); immunology; Therapeutic indication (Bladder Cancer); Dose (30 mg/kg);.

**Q5313:** M. Cadamuro, G. Spagnuolo, L. Sambado, S. Indraccolo, G. Nardo, A. Rosato, S. Brivio, C. Caslini, T. Stecca, M. Massani, N. Bassi, E. Novelli, C. Spirli, L. Fabris and M. Strazzabosco. Low-Dose Paclitaxel Reduces S100A4 Nuclear Import to Inhibit Invasion and Hematogenous Metastasis of Cholangiocarcinoma. *Cancer Res* 2016;76(16):4775-84

**ALZET Comments:** Paclitaxel; Cremophor EL, Ethanol; IP; Mice (SCID); 1004; 2 weeks; Controls received mp w/ vehicle; animal info (SCID mice 6–8 weeks old); functionality of mp verified by bioluminescence imaging to check metastatic spread; 50% Cremophor, 50% ethanol used; cancer (Cholangiocarcinoma); Xenograft model; Dose (2.6 mg/kg/d);.

**Q5629:** T. Borner, L. Loi, C. Pietra, C. Giuliano, T. A. Lutz and T. Riediger. The ghrelin receptor agonist HM01 mimics the neuronal effects of ghrelin in the arcuate nucleus and attenuates anorexia-cachexia syndrome in tumor-bearing rats. *Am J Physiol Regul Integr Comp Physiol* 2016;311(1):R89-96

**ALZET Comments:** HM01; Saline; SC; Rat; 2ML2; 12 days; Controls received mp w/ vehicle; animal info (230-270g) ; cancer; Therapeutic indication (cancer, malnutrition, metabolism); Dose (10ug/uL);.

**Q5317:** D. C. Borchering, W. Tong, E. R. Hugo, D. F. Barnard, S. Fox, K. LaSance, E. Shaughnessy and N. Ben-Jonathan. Expression and therapeutic targeting of dopamine receptor-1 (D1R) in breast cancer. *Oncogene* 2016;35(24):3103-13

**ALZET Comments:** Fenoldopam; PBS; SC; mice; 1004; 1 week, 3 weeks; Controls received mp w/ vehicle; animal info (Eight-week-old female athymic nu/nu mice; inoculated with MDA-MB-231 cells or SUM159 cells); functionality of mp verified by measurement of tumor volumes; cancer (breast cancer); dose-response (pg. 3109); Xenograft models; Dose (400 ng/kg/min or 133 ng/kg/min);.



**Q5628:** K. L. Black, C. F. Witty and J. M. Daniel. Previous Midlife Oestradiol Treatment Results in Long-Term Maintenance of Hippocampal Oestrogen Receptor alpha Levels in Ovariectomised Rats: Mechanisms and Implications for Memory. *J Neuroendocrinol* 2016;28(10):

**ALZET Comments:** HM01; Saline; SC; Rat; 2ML2; 12 days; Controls received mp w/ vehicle; animal info (230-270g) ; cancer; Therapeutic indication (cancer, malnutrition, metabolism); Dose (10ug/uL);.

**Q5318:** A. L. Bigley, S. K. Klein, B. Davies, L. Williams and D. G. Rudmann. Using Automated Image Analysis Algorithms to Distinguish Normal, Aberrant, and Degenerate Mitotic Figures Induced by Eg5 Inhibition. *Toxicol Pathol* 2016;44(5):663-72

**ALZET Comments:** Eg5 inhibitor; DMSO, captisol; SC; Rat (Nude); 1 day, 2 days, 3 days; Controls received mp w/ vehicle; animal info (human transitional cell carcinoma (TCC) cell line MGHU3 in nude rats); 50% DMSO, 60% captisol used; cancer (bladder); dose-response (pg 667-669); enzyme inhibitor (kinesin-5 inhibitor); human transitional cell carcinoma (TCC) cell line MGHU3; xenograft model; Dose (1.375 mg/kg/d, 2.75 mg/kg/d, 4.6 mg/kg/d);.

**Q5321:** D. M. Beauvais, O. Jung, Y. Yang, R. D. Sanderson and A. C. Rapraeger. Syndecan-1 (CD138) Suppresses Apoptosis in Multiple Myeloma by Activating IGF1 Receptor: Prevention by SynstatinIGF1R Inhibits Tumor Growth. *Cancer Res* 2016;76(17):4981-93

**ALZET Comments:** Synstatin(IGF1R), Synstatin(IGF1R-T); PBS; SC; Mice (NUDE); 2004; 4 weeks; Controls received mp w/ vehicle; animal info (6- to 8-week-old female, athymic Foxn1nu outbred nude mice); functionality of mp verified by tumor volume measurements; cancer (Multiple Myeloma); dose-response (pg. 4989-4990); Xenograft model; Dose (3.6 mg/kg/d); Resultant plasma level (30 umol/L); Interesting (Evidence of tumor elimination);.

**Q5592:** S. Ando and H. Kimura. 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

**ALZET Comments:** Tofacitinib; DMSO, PEG, Saline; SC; Mice (NOG); 4 weeks; 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).