



References on the Administration of Vitamins Using ALZET® Osmotic Pumps

1. RO-23-7553

P3719: B. W. Light, *et al.* Potentiation of cisplatin antitumor activity using a vitamin D analogue in a murine squamous cell carcinoma model system. *Cancer Res* 1997;57(3759-3764)

ALZET Comments: RO-23-7553; PBS; IP; mice; 1007D; 7 days; controls received sham mp; cancer.

2. Vitamin A

R0148: D. Al Musawi, *et al.* Adhesion prevention: state of the art. *GYNAECOLOGICAL ENDOSCOPY* 2001;10(123-130)

ALZET Comments: Dipyridamole; Lazaroids; Retinoic acid; Review of adhesion formation and prevention; mentions the use of mini-osmotic pumps to evaluate new agents to reduce experimental pelvic adhesions (p. 125).

P7250: T. Liu, *et al.* The retinoid anticancer signal: mechanisms of target gene regulation. *British Journal of Cancer* 2005;93(3):310-318

ALZET Comments: Retinoic acid, 13-cis-; Ethanol; SC; Mice (transgenic); 1007D; 5 weeks; Controls received mp w/ vehicle; dose-response (fig. 1); no stress (see pg. 312-13); cancer (neuroblastoma).

P7232: S. M. Karam, *et al.* Retinoic acid stimulates the dynamics of mouse gastric epithelial progenitors. *Stem Cells* 2005;23(3):433-441

ALZET Comments: Retinoic acid; uridine, bromodeoxy-; SC; Mice; 1, 3, 6 days; Controls received mp w/ vehicle; comparison of SC injections vs. mp; cancer (gastric); multiple pumps per animal (2).

P4739: R. D. Kopke, *et al.* Growth factor treatment enhances vestibular hair cell renewal and results in improved vestibular function. *PNAS* 2001;98(10):5886-5891

ALZET Comments: Transforming growth factor; insulin-like growth factor I; retinoic acid; brain-derived neurotrophic factor;; PBS; BSA;; Ear (vestibule); Guinea pig; 2002; 4 weeks; Controls received mp w/ vehicle; pumps replaced after 2 weeks; peptides; IntraEAR catheter used; GFI group pumps filled with TGF, IGF and Retinoic acid; GFII group pumps filled with TGF, IGF, BDNF and retinoic acid; tissue perfusion (vestibule).

P4026: K. E. Rodgers, *et al.* Reduction of adhesion formation by intraperitoneal administration of various anti-inflammatory agents. *J. Invest. Surgery* 1998;11(327-339)

ALZET Comments: Retinoic acid; Quinacrine; Dipyridamole; PBS; Ethanol; injury site; rabbit; 2ML1; 1, 2, 3, 7 days; controls received mp w/vehicle; tissue perfusion (surgical injury site); animals given morphine i.m. for post-operative pain; catheter stabilized in sidewall w/suture; in some studies, catheter tubing was disconnected to halt flow at specific times; immunology.

3. Vitamin B12

Q4348: E. Mutti, *et al.* 4-ethylphenyl-cobalamin impairs tissue uptake of vitamin B12 and causes vitamin B12 deficiency in mice. *PLoS One* 2013;8(9):e75312

ALZET Comments: Vitamin b12; Cobalamin, ethylphenyl-; saline; SC; mice; 2004; 4 weeks; controls received mp w saline; animal info: 7 wks old, female, strain 129.S6; mp used to infuse EtPhCbl in mice to see if it causes Cbl (cobalamin) deficiency; EtPhCbl (3.5 nmol/24 h), CNCbl.

Q2430: D. L. Lildballe, *et al.* Maximal Load of the Vitamin B12 Transport System: A Study on Mice Treated for Four Weeks with High-Dose Vitamin B12 or Cobinamide. *PLoS One* 2012;7(10):U386-U392



ALZET Comments: Cobinamide; vitamin B12; Saline; SC; Mice; 2004; 27 days; Control animals received mp w/ vehicle; animal info (129.S6, 8 wks old, female); "To avoid wound biting between mice, the mice were housed in individual cages for 3 days after surgery."; post op. care (buprenorphine in the water); cobinamide is a vitamin B12 analogue.

P3776: T. Kiuchi, *et al.* Effect of vitamin B12 on the sleep-wake rhythm following an 8-hour advance of the light-dark cycle in the rat. *Physiol. Behav* 1997;61(4):551-554

ALZET Comments: Vitamin B12; IP; Rat; 2002; 15 days; controls received mp w/saline.

P1825: E. P. Brass, *et al.* Effect of hydroxycobalamin[c-lactam] on propionate and carnitine metabolism in the rat. *Biochem. J* 1990;226(809-815

ALZET Comments: Vitamin B12 analog; SC; Rat; 2002; no duration posted; controls received pumps with saline only; pumps replaced after three weeks; cobalamin analog.

4. Vitamin B12 analog

P1825: E. P. Brass, *et al.* Effect of hydroxycobalamin[c-lactam] on propionate and carnitine metabolism in the rat. *Biochem. J* 1990;226(809-815

ALZET Comments: Vitamin B12 analog; SC; Rat; 2002; no duration posted; controls received pumps with saline only; pumps replaced after three weeks; cobalamin analog.

5. Vitamin D

Q7891: I. Kaneko, *et al.* Eldecalcitol Causes FGF23 Resistance for Pi Reabsorption and Improves Rachitic Bone Phenotypes in the Male Hyp Mouse. *Endocrinology* 2018;159(7):2741-2758

Agents: 1a,25-dihydroxyvitamin D; **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 3 weeks;

ALZET Comments: animal info (137 day old, C57BL/6J); 1a,25-dihydroxyvitamin D; aka 1, 25D ; dependence;

Q5205: Stephanie R. Sisley, *et al.* Hypothalamic Vitamin D Improves Glucose Homeostasis and Reduces Weight. *Diabetes* 2016;1-35

Agents: Vitamin D3, 1,25-dihydroxy **Vehicle:** Cyclodextrin; hydroxypropyl-B-; **Route:** CSF/CNS (third ventricle); **Species:** Rat; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, Long Evans, adult); dose-response (Supplementary Figure 3); obesity; Dose (-.264 ug/day); Brain coordinates (i3vt 2.2A/P, 7.8D/V);

Q5398: D. Ovejero, *et al.* 1,25-Dihydroxyvitamin D as Monotherapy for XLH: Back to the Future? *J Bone Miner Res* 2016;31(5):925-8

Agents: Vitamin D, 1,25-Dihydroxy- **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Pump:** Not Stated; **Duration:** 4 weeks;

ALZET Comments: animal info (Hyp mice); "In contrast, Alzet minipump infusion of 1,25D into Hyp mice for 4 weeks after weaning, along with a diet rich in phosphate, normalizes the growth plate and dramatically improves osteoid thickness" pg 936; Oral vs. minipump (pg. 936);

Q3925: M. L. Hyde, *et al.* In vivo measurement of the absorption of strontium in the rumen and small intestine of sheep as an index of calcium absorption capacity. *British Journal of Oral and Maxillofacial Surgery* 2014;112(718-724

Agents: Hydroxyvitamin D3, 1a- **Vehicle:** Not Stated; **Route:** SC; **Species:** Sheep (ewe); **Pump:** 2002; **Duration:** 6 days;

ALZET Comments: Animal info (merino, mature); functionality of mp verified by plasma 1,25-dihydroxycholecalciferol levels;

Q3900: S. K. Halder, *et al.* Paricalcitol, a Vitamin D Receptor Activator, Inhibits Tumor Formation in a Murine Model of Uterine Fibroids. *REPRODUCTIVE SCIENCES* 2014;21(1108-1119



Agents: Vitamin D3, 1,25-dihydroxy **Vehicle:** PEG; ethanol; **Route:** SC; **Species:** Mice (nude); **Pump:** Not Stated; **Duration:** 28 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (female, athymic, nude, 5-6 weeks old); 95% PEG used; 5% ethanol used; cancer (uterine fibroid tumor);