



References on the Administration of Vasoactive Intestinal Polypeptide Using ALZET® Osmotic Pumps

Q8453: K. A. Duggan, *et al.* Vasoactive intestinal peptide infusion reverses existing renal interstitial fibrosis via a blood pressure independent mechanism in the rat. *Eur J Pharmacol* 2020;873(172979

Agents: Vasoactive intestinal peptide **Vehicle:** Hartmann's Solution; **Route:** IV (iliac); **Species:** Rat; **Pump:** Not stated; **Duration:** 14 weeks;

ALZET Comments: Dose (5 pmol/kg/min); Controls received mp w/ vehicle; animal info (Fourteen week old spontaneous hypertensive rat); long-term study; Blood pressure measured via tail cuff plethysmography; 193 mmHg - 200 mmHg; Vasoactive intestinal peptide aka VIP; peptides; dependence;

Q5682: A. M. Szema, *et al.* NFATc3 and VIP in Idiopathic Pulmonary Fibrosis and Chronic Obstructive Pulmonary Disease. *PLoS One* 2017;12(1):e0170606

Agents: Peptide, Vasoactive intestinal **Vehicle:** Saline; **Route:** SC; **Species:** Mice (transgenic); **Pump:** Not Stated; **Duration:** 2 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, 9x-NFAT-luciferase, 2-3 months old, 20-25g); peptides; Dose (0.166 mg/kg/day);

Q0805: Y. Sheikine, *et al.* Activation of VPAC(1) receptors aggravates early atherosclerosis in hypercholesterolemic apolipoprotein E-deficient mice. *Biochemical and Biophysical Research Communications* 2010;402(3):471-476

Agents: Vasoactive intestinal peptide; vasoactive intestinal peptide pituitary adenylate cyclase-activating peptide receptor agonist **Vehicle:** PBS; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 4 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (female, apoE -/-, 12 wks old); peptides

P9398: B. K. Choudhury, *et al.* Gene plasticity in colonic circular smooth muscle cells underlies motility dysfunction in a model of postinfective IBS. *American Journal of Physiology Gastrointestinal and Liver Physiology* 2009;296(3):G632-G642

Agents: Vasoactive intestinal polypeptide, p-chloro-D-Phe5Leu17- **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Controls received mp w/ vehicle; peptides; animal info (male, Sprague Dawley, 6-8 wks old); VPAC 1/2 receptor antagonist

P7186: R. Newman, *et al.* Vasoactive intestinal peptide impairs leucocyte migration but fails to modify experimental murine colitis. *Clinical & Experimental Immunology* 2005;139(3):411-420

Agents: Vasoactive intestinal peptide **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 3, 7 days;

ALZET Comments: Controls received mp w/ saline; functionality of mp verified by VIP plasma levels; comparison of IP injections vs. mp; immunology; peptides; TNBS-induced colitis

P5911: M. C. Grimm, *et al.* Cutting edge: Vasoactive intestinal peptide acts as a potent suppressor of inflammation in vivo by trans-deactivating chemokine receptors. *Journal of Immunology* 2003;171(10):4990-4994

Agents: Vasoactive intestinal peptide **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 48 hours;

ALZET Comments: Controls received mp w/ saline; immunology; peptides

P5015: A. Kramer, *et al.* Regulation of daily locomotor activity and sleep by hypothalamic EGF receptor signaling. *Science* 2001;294(5551):2511-2515

Agents: Transforming growth factor- α ; Brain-derived neurotrophic factor; Vasoactive intestinal polypeptide; Peptide, histidine-isoleucine; Gastrin releasing peptide; Substance P; Neuromedin-C; Neurokinin A; Neuropeptide K; Neuropeptide Y; Somatostatin; Antrin; Cholecystokinin; Thyrotropin-releasing hormone; Neurotensin; Neuromedin N; **Vehicle:** CSF, artificial; **Route:** CSF/CNS (third ventricle); **Species:** hamster; **Pump:** 2002; **Duration:** 18-22 days;

ALZET Comments: peptides



P4528: K. Maruno, *et al.* Vasoactive intestinal peptide inhibits human small-cell lung cancer proliferation *in vitro* and *in vivo*. Proc. Natl. Acad. Sci 1998;95(14373-14378

Agents: Vasoactive intestinal peptide; forskolin **Vehicle:** PBS; DMSO; **Route:** SC; **Species:** Mice (nude); **Pump:** 2002; **Duration:** 8 weeks;

ALZET Comments: Controls received mp w/PBS; dose-response (pg. 14376-14377); long-term study, pumps replaced after 2 weeks; cancer (lung); multiple pumps per animal (2) in some animals; "For systemic delivery of peptides *in vivo*, constant infusion by osmotic pumps increases efficacy and reduces side effects relative to bolus injection." (p. 14377).

P3462: D. M. White, *et al.* Vasoactive intestinal polypeptide and neuropeptide Y act indirectly to increase neurite outgrowth of dissociated dorsal root ganglion cells. Neuroscience 1996;73(3):881-887

Agents: Vasoactive intestinal peptide; Neuropeptide Y; VIP antagonist; Trinositol, a- **Vehicle:** Heparin; Saline; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Peptides; 10 U/ml of heparin

P2858: G. R. Pitts, *et al.* Role of vasoactive intestinal peptide in the control of prolactin-induced turkey incubation behavior. II. Chronic infusion of vasoactive intestinal peptide. Biology of Reproduction 1994;50(1350-1356

Agents: Vasoactive intestinal peptide, porcine; Prolactin, ovine **Vehicle:** Saline; Sodium bicarbonate; **Route:** SC; CSF/CNS; CSF/CNS (median eminence); **Species:** bird (turkey); **Pump:** 2001; 2002; **Duration:** 7, 10, 12 days;

ALZET Comments: controls received mp with saline; functionality of mp verified by residual volume; stability of pVIP -- still potent after 17 days in sc pump; peptides; pumps implanted after recovery from CNS surgery

P1943: A. M. Stanisz, *et al.* The role of vasoactive intestinal peptide and other neuropeptides in the regulation of the immune response *in vitro* and *in vivo*. Annals of the New York Academy of Sciences 1987;527(478-485

Agents: Somatostatin; Substance P; Vasoactive intestinal peptide **Vehicle:** Not Stated; **Route:** SC; **Species:** mice; **Pump:** Not Stated; **Duration:** 7 days;

ALZET Comments: immunology; peptides

P0824: M. Niimi, *et al.* Plasma concentration of prolactin during four-day osmotic pump infusion of thyrotropin-releasing hormone and vasoactive intestinal polypeptide in rats. Endocrine Journal 1985;32(6):929-932

Agents: Thyrotropin-rel. factor; Vasoactive intestinal peptide **Vehicle:** Acetic acid; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** 4 days;

ALZET Comments: controls received mp w/ vehicle; functionality of mp verified by elevated plasma levels; peptides