



References on the Administration of Substance P
Using ALZET® Osmotic Pumps

Q1997: H. L. Carthew, *et al.* SUBSTANCE P-INDUCED CHANGES IN CELL GENESIS FOLLOWING DIFFUSE TRAUMATIC BRAIN INJURY. *Neuroscience* 2012;214(1):78-83

ALZET Comments: Substance P; CSF, artificial; CSF/CNS; Rat; 1003D; 3 days; Controls received mp w/ vehicle; animal info (Sprague Dawley, adult, male, 380 g); ALZET brain infusion kit used; incorrectly listed Model 2001 as 100 ul volume.

Q0738: S. C. Lagraize, *et al.* SPINAL CORD MECHANISMS MEDIATING BEHAVIORAL HYPERALGESIA INDUCED BY NEUROKININ-1 TACHYKININ RECEPTOR ACTIVATION IN THE ROSTRAL VENTROMEDIAL MEDULLA. *Neuroscience* 2010;171(4):1341-1356

ALZET Comments: Substance P; PBS; CSF/CNS (rostral ventromedial medulla); Rat; 1003D; 24 hours; Controls received mp w/ vehicle; animal info (male, Sprague-Dawley, 80-300 g); pain.

Q0570: P. S. Petersen, *et al.* In Vivo Characterization of High Basal Signaling from the Ghrelin Receptor. *Endocrinology* 2009;150(11):4920-4930

ALZET Comments: Substance P; PBS; BSA; CSF/CNS; Rat; 2001; 6 days; Controls received mp w/ vehicle or inactive control peptide; animal info (Male Wistar, 275-300 g, STZ induced diabetes); peptides.

P9844: H. Orita, *et al.* Unilateral intra-perilymphatic infusion of substance P enhances ipsilateral vestibulo-ocular reflex gains in the sinusoidal rotation test. *Neuroscience Letters* 2009;449(3):207-210

ALZET Comments: Substance P; neurokinin-1 receptor antagonist; Ear (round window); Guinea pig; 2002; Post op. care (piperacillin sodium); animal info (Hartley); pump was connected to a PE catheter filled with artificial perilymph for a 12-hour delayed infusion; tissue perfusion (round window).

P9241: C. Amantini, *et al.* Thiorphan-induced survival and proliferation of rat thymocytes by activation of Akt/survivin pathway and inhibition of caspase-3 activity. *Journal of Pharmacology and Experimental Therapeutics* 2008;327(1):215-225

ALZET Comments: Thiorphan; SR140333; substance P; Ethanol; water, distilled; SC; Rat; 2001; 7 days; Controls received mp w/ vehicle or no treatment; no stress (see pg. 216); enzyme inhibitor (peptidase (NEP/CD10)); immunology; animal info (male, Wistar, 21 days old); 10% EtOH used; "We chose to delivery SP, SR140333, and Thiorphan by a continuous route of administration, because this modality closely mimics the pathophysiological state observed in immune-mediated diseases." (p. 216).

P8976: S. W. Park, *et al.* Substance P is a promoter of adult neural progenitor cell proliferation under normal and ischemic conditions. *Journal of Neurosurgery* 2007;107(3):593-599

ALZET Comments: Substance P; L703,606; CSF, artificial; CSF/CNS; Rat; 2001; 5 days; Controls received mp w/ vehicle; ALZET brain infusion kit used; peptides; ischemia (cerebral); animal info (male, SHR, MCAO, 250-350 g.); NK1R antagonist.

P8728: G. Gradl, *et al.* Continuous intra-arterial application of substance P induces signs and symptoms of experimental complex regional pain syndrome (CRPS) such as edema, inflammation and mechanical pain but no thermal pain. *Neuroscience* 2007;148(3):757-765

ALZET Comments: Substance P; Saline; heparin; IA (femoral); Rat; 2001D; 24 hours; Controls received mp w/ vehicle; good methods (p. 758); animal info (male, Sprague-Dawley, 225-250g); pain.

P6508: G. Santoni, *et al.* Neonatal capsaicin treatment affects rat thymocyte proliferation and cell death by modulating substance P and neurokinin-1 receptor expression. *NEUROIMMUNOMODULATION* 2004;11(3):160-172

ALZET Comments: Substance P; SR140333; Water, distilled; DMSO; SC; Rat; 2001; 7 days; Controls received mp w/ vehicle; functionality of mp verified by SP plasma levels; peptides; 1% DMSO used.

P5789: G. Santoni, *et al.* Expression of substance P and its neurokinin-1 receptor on thymocytes: Functional relevance in the regulation of thymocyte apoptosis and proliferation. *NEUROIMMUNOMODULATION* 2002;10(4):232-246



ALZET Comments: Substance P; SR140333; Water, distilled; DMSO; SC; Rat (neonate); 2001; 7 days; Controls received mp w/ one of two vehicles; functionality of mp verified by plasma levels of (sp); dose-response (p.241); peptides; SR140333 (A NK-1R antagonist) was diluted in 1% DMSO distilled water, alone, or in combination with (sp); pups were 28 days old.

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

ALZET Comments: 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; CSF, artificial; CSF/CNS (third ventricle); hamster; 2002; 18-22 days; peptides.

P2259: M. J. Everard, *et al.* [D-Arg1, D-Phe5, D-Trp7,9, Leu 11] substance P inhibits the growth of human small cell lung cancer xenografts in vivo. *Eur. J. Cancer* 1993;29A(10):1450-1453

ALZET Comments: Substance P, [D-Arg1, D-Phe5, D-trp7,9, Leu11]-; PBS; SC; Mice (nude); 1007D; 14 days; controls received mp w/PBS; functionality of mp verified by HPLC quantitation of residual volume; comparison of ip injections vs mp; pumps replaced after 7 days; stability verified for 14 days by in vitro testing at 37C; mp placed near tumor; cancer (lung).

P2626: S. Langdon, *et al.* Broad spectrum neuropeptide antagonists inhibit the growth of small cell lung cancer in vivo. *Cancer Res* 1992;52(4554-4557)

ALZET Comments: Substance P, [D-Arg1, D-Phe5, D-trp7,9, Leu11]-; Substance P(6-11), [Arg6, D-Trp7,9, MePhe8]-; Water, sterile; SC; Mice (nude); 1007D; 7 days; controls received mp w/ water; comparison of ip injections vs. mp; cancer (lung); toxicology; peptides; pump implanted in flank contralateral to tumor; higher dose, with less lethality, could be given via pump.

P2262: F. L.D., *et al.* Chronic ICV infusion of neuropeptides alters lymphocyte populations in experimental rodents. *Regul. Pept* 1991;34(189-195)

ALZET Comments: Angiotensin II; Substance P; CSF, artificial; CSF/CNS; Rat; 2002; 1 month; 2 weeks; controls received mp w/a CSF; pumps replaced at 14 days; immunology; peptides.

P1920: I. Padol, *et al.* Stimulatory effect of substance P on antigen-specific immune response in mice. *Prog. Neuroendocrinimm* 1990;3(4):277-281

ALZET Comments: Substance P; Saline; SC; mice; 2001; 7 days; functionality of mp verified by serum levels of substance P; peptides.

P1295: R. Scicchitano, *et al.* In vivo immunomodulation by the neuropeptide substance P. *Immunology* 1988;63(733-735)

ALZET Comments: Substance P; Saline; SC; mice; 2001; 7 days; functionality of mp verified by serum levels; cancer/immunology; peptides.

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. *Ann. N. Y. Acad. Sci* 1987;527(478-485)

ALZET Comments: Somatostatin; Substance P; Vasoactive intestinal peptide; SC; mice; 7 days; immunology; peptides.

P0572: S. M. Simasko, *et al.* Effect of neurotensin, substance P and TRH on the regulation of dopamine receptors in rat brain. *Eur. J. Pharmacol* 1984;106(3):653-656

ALZET Comments: Neurotensin; Substance P; Thyrotropin-rel. factor; Saline; CSF/CNS; Rat; 8 days; portion of tubing connecting mp to icv cannula was externalized to allow shut off of flow; stability of agents verified; concomitant haloperidol admin.; peptides.

P0554: K. Nakai, *et al.* Accelerated regeneration of central catecholamine fibers in cat occipital cortex: effects of substance P. *Brain Research* 1984;323(374-379)



ALZET Comments: Dopamine HBr, 6-hydroxy-; Substance P; CSF/CNS (occipital cortex); cat (kitten); 1 week; comparison of agents effects; ALZET not mentioned but author cites previous mp papers as methods reference; cannot be positive substance P deliv. by mp; peptides.