References on the Administration of Neuropeptide Y Using ALZET® Osmotic Pumps

Q4685: R. Zhang, et al. Long-Term Administration of Neuropeptide Y in the Subcutaneous Infusion Results in Cardiac Dysfunction and Hypertrophy in Rats. CELLULAR PHYSIOLOGY AND BIOCHEMISTRY 2015;37(94-104)
**ALZET Comments:** Neuropeptide Y; PBS; SC; Rat; 2004; 30 days; Controls received mp w/ vehicle; animal info (male, Wistar, 250-300g); functionality of mp verified by plasma levels; cardiovascular; peptides; pumps primed in 37C saline for 40 hours.

Q4622: C. Trivedi, et al. Tachykinin-1 in the Central Nervous System Regulates Adiposity in Rodents. ENDOCRINOLOGY 2015;156(1714-1723)
**ALZET Comments:** Ghrelin; neuropeptide K; Saline; CSF/CNS (fourth ventricle); CSF/CNS; Rat; mice; 1002;1007D; 7 days; Controls received mp w/ vehicle; animal info (rat male, Wistar, 260-290g; mice male, C57Bl6, 12-16 weeks old); ALZET brain infusion kit used; dose-response (pg 1718); post op. care (analgesics); behavioral testing (locomotor activity); neuropeptide K aka NPK.

**ALZET Comments:** Neuropeptide Y; PBS; SC; Rat; 2004; 4 months; Controls received mp w/ vehicle; animal info (Wistar, male, 230-270 g, 3-4 mo old); long-term study; pumps replaced monthly.

Q1861: F. Xie, et al. Neuropeptide Y Reverses Chronic Stress-induced Baroreflex Hypersensitivity in Rats. CELLULAR PHYSIOLOGY AND BIOCHEMISTRY 2012;29(3-4):463-474
**ALZET Comments:** Neuropeptide Y; SC; Rat; 2004; 3 months; Controls received mp w/ PBS; animal info (Wistar, male, adult, 230-250 g); long-term study; pumps replaced monthly.

**ALZET Comments:** Neuropeptide Y Y5 agonist; Saline; CSF/CNS; Rat; 2002; 12, 14 days; Control animals received mp w/ saline; animal info (Sprague Dawley, Wistar, male, 150-170 g, olfactory bulbectomized); neuropeptide Y Y5 agonist also known as [cPP1-7,NPY19-23,Ala31,Aib32,Gln34]hPP.

**ALZET Comments:** Neuropeptide Y; Heparin; BSA; IA; Swine; 2ML4; 5 weeks; Animal info (swine model of metabolic syndrome with chronic myocardial ischemia, six-week-old, male; Yorkshire miniswine); ischemia (arterial).

**ALZET Comments:** Neuropeptide Y; HS014; NaCl; CSF/CNS; Rat; 2001; 6 days; Controls received mp w/ vehicle; animal info (male, Wistar, 25-280 g); peptides; HS014 is a melanocortin 4 receptor antagonist.

**ALZET Comments:** Neuropeptide-EI; CSF, artificial; CSF/CNS (third ventricle); Rat; 2002; 26 days; Controls received mp w/ vehicle; animal info (pmch +/+, pmch -/-, male, Wistar); peptides; pumps replaced after 13 days; ALZET brain infusion kit 1 used.


ALZET Comments: Neuropeptide Y, neuropeptide y antagonist; CSF/CNS; Rat; 2004; 28 days; Controls received mp w/ placebo; animal info (Intact, adult, male, Yorkshire, miniswine); 2ML sized pump used; tissue perfusion (myocardium).


ALZET Comments: Neuropeptide Y, c-terminal fragments amidated; Neuropeptide Y, c-terminal fragments non-amidated; DMSO; NaCl; CSF/CNS; Mice (transgenic); 2004; 28 days; Controls received mp w/ vehicle; animal info (NEP, APP, doubt tg. 6mo); 10% DMSO used; peptides.

P9847: R. Moriya, et al. Comparison of independent and combined chronic anti-obese effects of NPY Y2 receptor agonist, PYY(3-36), and NPY Y3 receptor antagonist in diet-induced obese mice. Peptides 2009;30(7):1318-1322

ALZET Comments: Neuropeptide Y, D-Trp34; peptide YY (3-36); Saline; BSA; CSF/CNS; Mice; 2001; 2002; 7, 14 days; Controls received mp w/ vehicle; pumps replaced after 2 weeks; peptides; animal info (C57BL/6, 12-18 wks old); PBS/BSA in 2002 pump was replaced with NPP in 2001 after 2 week recovery period; obesity.


ALZET Comments: Antibody, rabbit, anti-neuropeptide Y; Saline; CSF/CNS; Mice; 2002; 13 days; Controls received mp w/ vehicle; comparison of ICV injections vs. mp; ALZET brain infusion kit 3 used; animal info (male, ddy, 7 weeks old, 35-40 g); peptides.


ALZET Comments: Neuropeptide Y; CSF, artificial; CSF/CNS; Rat; 1003D; 3 days; Controls received mp w/ vehicle; peptides; post op. care (bacitracin ointment over skull); animal info (Sprague-Dawley, male, 280-320g); 22-gauge stainless steel guide cannula, Plastics One.


ALZET Comments: Isoproterenol; neuropeptide Y, [Leu31, Pro34]--; neuropeptide Y1 receptor antagonist; IV (jugular); Rat; 1003D; 16 hours; Controls received mp w/ vehicle; half-life (p.115) "short" for isoproterenol; peptides; animal info (male, Sprague-Dawley, 250-320g.).


ALZET Comments: Neuropeptide Y, synthetic rat; BIBP3226; Saline; CSF/CNS; Rat; 2002; 14 days; Controls received mp w/ vehicle; cardiovascular; antihypertensive; peptides; cannula placement confirmed by methylene blue staining; "This approach (mp) allowed us to assess the role of endogenous NPY in long-term control of BP under experimental conditions that excluded complications associated with anesthesia, restraint, and short-term drug administration." (p. 782); neuropeptide Y, Y1 receptor antagonist.

**ALZET Comments:** Neuropeptide Y; Y1 agonist; Y5 agonist; Saline; water; Ascorbic acid; CSF/CNS; Mice; 2001; 6 days; Controls received mp w/ vehicle; peptides; mice received a two week recovery period; guide cannula used and secured with tissue adhesive; animal info (6 week old, C57BL/6, 25-30 grams).

**P6495:** P. D. Raposinho, *et al.* Chronic neuropeptide Y infusion into the lateral ventricle induces sustained feeding and obesity in mice lacking either Npy1r or Npy5r expression. Endocrinology 2004;145(1):304-310

**ALZET Comments:** Neuropeptide Y, porcine; Phosphate buffer; sodium chloride; Ascorbic acid; BSA; CSF/CNS; Mice; 2001; 7 days; Controls received mp w/ vehicle; stress/adverse reaction: (see pg.305) initial weight loss from surgery/anesthesia; ALZET brain infusion kit 2 used; peptides; obesity; 7-14 day recovery period after surgery; pumps filled with PBS during recovery; monocyte chemoattractant protein-1 is also known as MCP-1.

**P6110:** K. Takahashi, *et al.* Adiposity elevates plasma MCP-1 levels leading to the increased CD11b-positive monocytes in mice. Journal of Biological Chemistry 2003;278(47):46654-46660

**ALZET Comments:** Neuropeptide Y; monocyte chemoattractant protein-1; PBS; BSA; CSF/CNS; Mice; 2002; 2 weeks; Controls received mp w/ vehicle; mcp-1 plasma levels taken; ALZET brain infusion kit used; peptides; obesity; 7-14 day recovery period after surgery; monocyte chemoattractant protein-1 is also known as MCP-1.


**ALZET Comments:** Neuropeptide Y, rat; melanin-concentrating hormone-1, receptor agonist; melanin-concentrating hormone-1, receptor antagonist; Saline; CSF/CNS; Rat; 2002; 14 days; Controls received mp w/ vehicle; dose-response (fig. 5); peptides; post op. care (antisedan); pump model incorrectly given as 2001 (p. 39); based on flow rate (.5 ul/hr) and duration (14 days) is actually model 2002 (p. 39).

**P5852:** P. D. Raposinho, *et al.* The melanocortin agonist Melanotan-II reduces the orexigenic and adipogenic effects of neuropeptide Y (NPY) but does not affect the NPY-driven suppressive effects on the gonadotrophic and somatotropic axes in the male rat. Journal of Neuroendocrinology 2003;15(2):173-181

**ALZET Comments:** Melanotan-II; Neuropeptide Y; PBS; Ascorbic acid; BSA; CSF/CNS; Rat; 7 days; Peptides; Melanotan II or MTII (a melanocortin receptor agonist) & neuropeptide were dissolved in PBS, 0.01% ascorbic acid, 0.1% bovine serum albumin adjusted to ph 7.4; pump model not listed.

**P6156:** M. S. Mondal, *et al.* A role for neuropeptide W in the regulation of feeding behavior. Endocrinology 2003;144(11):4729-4733

**ALZET Comments:** Neuropeptide W; Saline; CSF/CNS; Rat; 2001; 5 days; Controls received mp w/ vehicle; peptides; cannula placement verified by dye; obesity; NPW is a novel hypothalamic peptide.

**P7706:** S. Mashiko, *et al.* Characterization of neuropeptide Y (NPY) Y5 receptor-mediated obesity in mice: chronic intracerebroventricular infusion of D-Trp34-NPY. Endocrinology 2003;144(5):1793-1801

**ALZET Comments:** Neuropeptide Y, D-Trp34; PBS; BSA; CSF/CNS; Mice; 2001; 2002; 13-21 days; Controls received mp w/ vehicle; dose-response (fig. 1); pumps replaced after 7-14 days; ALZET Brain Infusion kit used; peptides; post op. care (cefamedin); animal info (C57BL/6J, 9-12 weeks old, male); cannula placement confirmed by Evans blue dye injection.

**P5254:** D. J. Toufexis, *et al.* Y1 receptor activation is involved in the effect of exogenous neuropeptide Y on pup growth and the early termination of lactational diestrus in the postpartum rat. J Neuroendocrinol 2002;14(5):354-360

**ALZET Comments:** Neuropeptide Y; 1229U91; Neuropeptide Y, receptor agonist; Ascorbic acid; Phosphate buffer; NaCl; BSA; CSF/CNS; Rat; 2001; 7 days; Controls received mp w/ vehicle; peptides; cannula placement verified manually by locating the tip postmortem; 1229U91 is a mixed Y1 antagonist/Y4 agonist.

**P5583:** C. Fekete, *et al.* Agouti-related protein (AGRP) has a central inhibitory action on the hypothalamic-pituitary-thyroid (HPT) axis; Comparisons between the effect of AGRP and neuropeptide Y on energy homeostasis and the HPT axis. Endocrinology 2002;143(10):3846-3853
ALZET Comments: Neuropeptide Y; Agouti-related protein; CSF, artificial; CSF/CNS; Rat; 1003D; 3 days; peptides; cannula was implanted then occluded with a dummy cannula for one week prior to infusion to allow for recovery; AGRP is an appetite stimulant.

ALZET Comments: Neuropeptide Y; neuropeptide Y, receptor agonist; CSF, artificial; CSF/CNS; Rat; 1003D; 3 days; Controls received mp w/ vehicle; peptides; endocrinology.

ALZET Comments: Neuropeptide Y; Saline; CSF/CNS (third ventricle); Rat; 2004; 2 weeks; Controls received mp w/ vehicle; Peptides: cannula placement verified by methylene blue staining; one-week recovery period.

ALZET Comments: Octadecaneuropeptide; Saline; CSF/CNS; Rat; 2002; 15 days; controls received mp w/ vehicle; good methods (priming, cannula patency p. 226); ALZET brain infusion kit used; Octadecaneuropeptide (diazepam-binding inhibitor (33-50)) exerts anorexigenic effect on rodents.

ALZET Comments: Transforming growth factor-a; Brain-derived neurotrophic factor; Vasoactive intestinal polypeptide; Peptide, histidine-isoleucine; Gastrin releasing peptide; Substance P; Neuronomed-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.

ALZET Comments: Neuropeptide Y; CSF, artificial; CSF/CNS (left lateral ventricle); Rat; 2001; 3 days; Dose (10 g/24 hours); Controls received mp w/ vehicle; animal info (adult male Sprague Dawley rats, weighing 230– 260 g); Brain coordinates (AP 20.8; Lat 1.2; d-Vent3.2); cyanoacrylate adhesive;;

ALZET Comments: Neuropeptide Y, human; CSF/CNS; Rat; 2001; no duration posted; controls received no treatment; peptides; vehicle was filter sterilized;;

ALZET Comments: Neuropeptide Y, human; CSF, artificial;; CSF/CNS (third ventricle); Rat; 2002; no duration posted; controls received mp w/vehicle; cannula placement verified one week after placement by icv injection of angiotensin II; pumps implanted 3 weeks after cannula placement; peptides.

P3830: D. White. Intrathecal neuropeptide Y exacerbates nerve injury-induced mechanical hyperalgesia. Brain Research 1997;750(141-146
ALZET Comments: Neuropeptide Y; Trinositol, a-; Saline; Heparin; CSF/CNS (intrathecal); Rat; 14 days; peptides.

ALZET Comments: Vasoactive intestinal peptide; Neuropeptide Y; VIP antagonist; Trinositol, a-; Heparin; Saline; CSF/CNS (intrathecal); Rat; 2002; 2 weeks; Peptides; 10 U/ml of heparin.

ALZET Comments: Neuropeptide Y, synthetic porcine; Neuropeptide Y-(13-36); CSF/CNS; Rat; 2001; 7 days; controls received sham surgery; dose-response (6, 18, 36 ug/d); peptides.

ALZET Comments: Neuropeptide Y; Sodium chloride; IV (jugular); Rat; 1 week; controls received mp w/ vehicle; peptides.

P2710: M. G. Dube, et al. Evidence that neuropeptide Y is a physiological signal for normal food intake. Brain Research 1994;646(341-344)
ALZET Comments: Antibody, neuropeptide Y; Immunoglobulin, anti-neuropeptide Y; Serum, normal rabbit; CSF, artificial; Saline; Immunoglobulin, normal rabbit serum; CSF/CNS (third ventricle); Rat; 2001D; 24 hours; controls received mp w/ rabbit serum; peptides.

ALZET Comments: Neuropeptide Y, porcine; PBS; Albumin, bovine serum; Ascorbic acid; CSF/CNS; Rat; 2001; 7 days; controls were food-restricted and received mp w/ vehicle or were fed ad libitum; peptides.

ALZET Comments: Antibody, neuropeptide Y; Serum, normal rabbit; CSF, artificial; CSF/CNS (third ventricle); Rat; 2001D; no duration posted; controls received mp with vehicle; peptides.

ALZET Comments: Neuropeptide Y, synthetic porcine; Sodium chloride; Ascorbic acid; Albumin, bovine serum; PBS; CSF/CNS; Rat; 2001; 7 days; controls were food-restricted and received mp w/ vehicle or were fed ad libitum; peptides.

ALZET Comments: Neuropeptide Y, porcine; Ascorbic acid; Albumin, bovine serum; PBS; CSF/CNS; Rat; 2001; 7 days; controls received mp with vehicle; dose-response (graph p. 227); peptides.

ALZET Comments: Neuropeptide Y; CSF, artificial; CSF/CNS; Rat; 2002; no duration posted; functionality of mp verified by measurement of residual volume; stress/adverse reaction: small weight loss in animals with vehicle-containing pumps p298; stability verified in vitro at 37 C for 14 days; peptides.

ALZET Comments: Neuropeptide Y; Saline; IV (jugular); Rat; 1702; 8-9 days; peptides.

**ALZET Comments**: Neuropeptide Y; CSF, artificial; Rat; 2002; 2 weeks; peptides.