



References on the Study of Obesity, Appetite & Satiety Using ALZET® Osmotic Pumps

1. Agouti-related Peptide

P9223: G. M. Sutton, *et al.* The Melanocortin-3 Receptor Is Required for Entrainment to Meal Intake. *Journal of Neuroscience* 2008;28(48):12946-12955

ALZET Comments: Agouti-related peptide (82-131); CSF, artificial; CSF/CNS; Mice; 1002; 14 days; Controls received mp w/ vehicle; ALZET brain infusion kit used; dental cement and stay screws used; peptides; post op. care (Buprenorphine); animal info (male, B6, 8 wks old).

P8331: M. A. Joppa, *et al.* Central infusion of the melanocortin receptor antagonist agouti-related peptide (AgRP(83-132)) prevents cachexia-related symptoms induced by radiation and colon-26 tumors in mice. *Peptides* 2007;28(3):636-642

ALZET Comments: Agouti-related peptide (83-132); Saline, sterile; CSF/CNS; Mice; 1003D; 72 hours; Controls received mp w/ vehicle; cancer (colon adenocarcinoma); peptides; animal info (male, BALB/C, 6 weeks old, 22 grams); Research Diets D12689B.

P9007: J. J. G. Hillebrand, *et al.* AgRP₍₈₃₋₁₃₂₎ and SHU9119 differently affect activity-based anorexia. *European Neuropsychopharmacology* 2006;16(6):403-412

ALZET Comments: SHU9119; agouti-related protein (83-132), human; Saline, sterile, isotonic; CSF/CNS; Rat; 1007D; 4, 6 days; Controls received mp w/ vehicle; ALZET brain infusion kit 2 used; peptides; post op. care (Buprenorphine, temagesic); animal info (female, Wistar wu); melanocortin antagonist.

P5827: M. J. H. Kas, *et al.* Agouti-related protein prevents self-starvation. *Molecular Psychiatry* 2003;8(2):235-240

ALZET Comments: Agouti-related protein; Saline; CSF/CNS; Rat; 1007D; 4-5 days; Controls received mp w/ vehicle; ALZET brain infusion kit used; peptides; catheter tubing filled w/ saline to allow 2-3 day delayed infusion; Agouti-related protein is a suppressor of melanocortin receptor activity.

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.

2. CART (55-102)

P7017: Y. H. Choi, *et al.* CART peptide: central mediator of leptin-induced adipose tissue apoptosis? *REGULATORY PEPTIDES* 2004;121(1-3):155-162

ALZET Comments: CART (55-102); leptin, recomb. rat; CSF, artificial; CSF/CNS; Rat; 1007D; 5 days; Controls received mp w/ vehicle; dose-response; peptides; mp primed overnight; catheter connecting mp to cannula filled with 12 ul aCSF to give 24 hours lag time before agent delivery.

P5040: F. Rohner-Jeanraud, *et al.* Chronic central infusion of cocaine- and amphetamine-regulated transcript (CART 55-102): effects on body weight homeostasis in lean and high-fat-fed obese rats. *International Journal of Obesity* 2002;26(143-149)

ALZET Comments: CART (55-102); Saline; Ascorbic acid;; CSF/CNS; Rat; 2001; 6 days; controls received mp w/ vehicle; in vitro stability verified by HPLC: 72% of agent was stable after 7 days (p. 145); peptides; ALZET Brain Infusion Kit used; CART is Cocaine-and Amphetamine-Regulated Transcript; pumps primed for at least 20 hours (p. 144).



3. Corticotrophin-releasing Factor

Q3356: A. J. Park, *et al.* Altered colonic function and microbiota profile in a mouse model of chronic depression. *NEUROGASTROENTEROLOGY AND MOTILITY* 2013;25(9):733-E575

ALZET Comments: Corticotrophin releasing hormone; Saline; CSF/CNS; Mice; 28 days; Controls received mp w/ vehicle; animal info (female, C57BL/6, 8-10 weeks old); behavioral testing (Step down test, tail suspension test, open field); peptides; cyanoacrylate adhesive; Corticotrophin-rel. factor aka Corticotrophin releasing hormone; Plastics 1 cannula, DURECT PE 60 tubing.

Q00128: J. S. Kinsey-Jones, *et al.* Corticotrophin-Releasing Factor Alters the Timing of Puberty in the Female Rat. *Journal of Neuroendocrinology* 2010;22(2):102-109

ALZET Comments: Corticotrophin-releasing factor; astressin-B; CSF, artificial; CSF/CNS; Rat; 2002; 14, 14 days; Controls received no treatment/surgery; peptides; no stress (see pg. 105); animal info (female, Sprague-Dawley, 28 days old); dose-response (fig. 1); neuroendocrinology.

Q0128: J. S. Kinsey-Jones, *et al.* Corticotrophin-Releasing Factor Alters the Timing of Puberty in the Female Rat. *Journal of Neuroendocrinology* 2010;22(2):102-109

ALZET Comments: Corticotrophin-releasing factor; astressin-B; CSF, artificial; CSF/CNS; Rat; 2002; 14, 14 days; Controls received no treatment/surgery; peptides; no stress (see pg. 105); animal info (female, Sprague-Dawley, 28 days old); dose-response (fig. 1); neuroendocrinology.

P9948: O. J. Bosch, *et al.* The CRF System Mediates Increased Passive Stress-Coping Behavior Following the Loss of a Bonded Partner in a Monogamous Rodent. *Neuropsychopharmacology* 2009;34(6):1406-1415

ALZET Comments: Corticotrophin-releasing factor, d-phe; CP-154526; astressin-2b; CSF/CNS; Prairie vole; 1007D; ALZET brain infusion kit 3 used; cyanoacrylate adhesive; animal info (naive, adult, male, female, 70-100 g); catheter contained ringers solution for delayed delivery of 44 hours.

P9144: A. A. Teitelbaum, *et al.* Chronic peripheral administration of corticotrophin-releasing factor causes colonic barrier dysfunction similar to psychological stress. *American Journal of Physiology-Gastrointestinal and Liver Physiology* 2008;295(3):G452-G459

ALZET Comments: Corticotrophin-releasing factor; Stressin1; sauvagine, anti-; urocortin III; Saline; SC; Rat; 2002; 12 days; Controls received mp w/ vehicle; peptides; multiple pumps per animal (2); animal info (mast cell-deficient, +/+, 10 wks old, 200-250 g.); "The use of the minipump avoids daily interactions with the animals, possibly causing less variability in the results." pg G458; stressin1 is a selective CFR-R1 agonist; urocortin III is a CFR-R2 agonist; antisauvagine is a CRF-R2 antagonist.

P7890: N. Boyadjieva, *et al.* Role of beta-endorphin, corticotrophin-releasing hormone, and autonomic nervous system in mediation of the effect of chronic ethanol on natural killer cell cytolytic activity. *ALCOHOLISM-CLINICAL AND EXPERIMENTAL RESEARCH* 2006;30(10):1761-1767

ALZET Comments: Endorphin, B; corticotrophin releasing hormone; CSF, artificial; CSF/CNS (paraventricular nucleus of hypothalamus); Rat; 2002; 16 hours; Controls received mp w/ vehicle; peptides; animal info (male, Fischer, 160-175g.).

P7604: N. J. Bernier, *et al.* CRF-related peptides contribute to stress response and regulation of appetite in hypoxic rainbow trout. *American Journal of Physiology-Regulatory Integrative and Comparative Physiology* 2005;289(4):R982-R990

ALZET Comments: Corticotrophin-releasing factor, a helical (9-41); Saline, physiological; NaOH; CSF/CNS; Fish (rainbow trout); 1003D; 8 days; Controls received mp w/ vehicle; no stress (see pg. R984); peptides; animal info (male, female, hypoxia); CRF receptor antagonist; x-ray radiography; mp encased in a layer of dialysis tubing; cannula placement confirm; mp at 14C.



P6607: Y. Kagamiishi, *et al.* Detrimental role of corticotropin-releasing factor on the decrease of CA1 field potential induced by in vitro ischemia in rat hippocampal slices. *JOURNAL OF PHARMACOLOGICAL SCIENCES* 2004;94(1):39-44

ALZET Comments: Corticotropin-releasing factor; astressin; Saline; BSA; Ascorbic acid; CSF/CNS; Rat; 2002; 7 days; Controls received mp w/ vehicle; ALZET brain infusion kit 1 used; 2 week recovery period by filling tubing and cannula with sterile saline; pump connected to catheter after recovery period; astressin is a novel CRF antagonist; BSA and ascorbic acid was 0.1%; ischemia (cerebral).

Q6823: M. J. CULLEN, *et al.* Urocortin, Corticotropin Releasing Factor-2 Receptors and Energy Balance. *Endocrinology* 2001;142(3):992-999

ALZET Comments: Urocortin; Corticotropin-releasing factor; CSF/CNS (lateral ventricle); Rat; 2001; 13 days; Dose (0.01-1.0 nmol/day); Controls received mp w/ vehicle; animal info (Male Long-Evans rats: 300–347 g); pumps replaced every 7 days; Urocortin, Corticotropin are CRF-related peptide; peptides; Silicone catheter used to connect pump to cannula; Brain coordinates (AP=-0.8 mm, ML=+1.2mm, and DV=-4.5mm); Cannula placement verified via cresyl violet dye injection post mortem;.

P3228: V. Jain, *et al.* In vivo effects of corticotropin-releasing factor in pregnant rats. *Am. J. Obstet. Gynecol* 1998;178(186-191

ALZET Comments: Corticotropin-rel. factor; Corticotropin-rel. factor, 9-41; Saline, normal; SC; Rat (pregnant); 2ML1; no duration posted; controls received mp w/vehicle; peptides; cardiovascular.

P3832: T.-S. Huang. Concomitant infusion of ovine corticotropin-releasing hormone does not prevent suppression of the hypothalamus-pituitary-adrenal axis by dexamethasone in male rats. *J. Endocrinol. Invest* 1997;20(393-396

ALZET Comments: Dexamethasone; Corticotropin-rel. factor, ovine; SC; Rat; 1003D; 2001; 3, 7 days; replacement therapy; peptides.

P3927: B. Buwalda, *et al.* Physiological and behavioral effects of chronic intracerebroventricular infusion of corticotropin-releasing factor in the rat. *Psychoneuroendocrinology* 1997;22(5):297-309

ALZET Comments: Corticotropin-rel. factor, ovine; Saline; BSA; Ascorbic acid; CSF/CNS; Rat; 2002; 10 days; controls received mp w/ vehicle; peptides; ALZET brain infusion kit used; catheter filled w/ saline to delay agent delivery; delayed delivery;.

P4268: S. C. Heinrichs, *et al.* Corticotropin-releasing factor-binding protein ligand inhibitor blunts excessive weight gain in genetically obese Zucker rats and rats during nicotine withdrawal. *Proc. Natl. Acad. Sci. USA* 1996;93(15475-15480

ALZET Comments: Nicotine tartrate salt; Corticotropin-rel. factor, 6-33; Saline; SC; CSF/CNS;; Rat; 2001; 2002;; 14 days; controls received mp w/ vehicle; functionality of mp verified by plasma levels; peptides; ALZET brain infusion kit used; recomb. human corticotropin releasing factor used; dummy cannula maintained cannula patency during one week recovery period; after 14 day SC nicotine infusion, r/h CRF (6-33) was infused ICV.

P2719: M. S. Labeur, *et al.* Long-term intracerebroventricular corticotropin-releasing hormone administration induces distinct changes in rat splenocyte activation and cytokine expression. *Endocrinology* 1995;136(6):2678-2688

ALZET Comments: Corticotropin-rel. factor; Saline, sterile; Ascorbic acid; CSF/CNS; Rat; 2001; 1 week; controls received mp w/ vehicle; replacement therapy (adrenalectomy); peptides.

4. Dexfenfluramine

Q0904: S. M. Banas, *et al.* Deconstructing Antiobesity Compound Action: Requirement of Serotonin 5-HT_{2B} Receptors for Dexfenfluramine Anorectic Effects. *Neuropsychopharmacology* 2011;36(2):423-433

ALZET Comments: Dexfenfluramine; SC; Mice; 5 weeks; Controls received mp w/ vehicle; animal info (8 wks old, male, 8-12 wks old, 5-HT_{2B}^{-/-}); obesity.



P9671: N. Desbuards, *et al.* Dexfenfluramine discontinuous treatment does not worsen hypoxia-induced pulmonary vascular remodeling but activates RhoA/ROCK pathway: Consequences on pulmonary hypertension. *European Journal of Pharmacology* 2009;602(2-3):355-363

ALZET Comments: Dexfenfluramine; Water, sterile; IV (jugular); Rat; 2ML4; 28 days; Controls received mp w/ vehicle; animal info (female, Wistar, 250-275 g.).

P7822: J. Callebert, *et al.* Evidence for a control of plasma serotonin levels by 5-hydroxytryptamine_{2B} receptors in mice. *Journal of Pharmacology and Experimental Therapeutics* 2006;317(2):724-731

ALZET Comments: Dexfenfluramine; RS-127445; Mice; Controls received mp w/ vehicle; comparison of IP injections vs. mp; cardiovascular; animal info (129PAS wt or 5-HT2B-R(-/-), 6wk old, 20-25g, male, female).

P5548: J. M. Launay, *et al.* Function of the serotonin 5-hydroxytryptamine 2B receptor in pulmonary hypertension. *Nature Medicine* 2002;8(10):1129-1135

ALZET Comments: RS-127445; dexfenfluramine; Mice; Controls received mp w/ vehicle; RS-127445 is a highly selective, high affinity 5-HT2B receptor antagonist; dexfenfluramine is an amphetamine-derived appetite suppressant.

P4569: J. Bratter, *et al.* Effects of prenatal co-administration of phentermine and dexfenfluramine in rats. *European Journal of Pharmacology* 1999;369(R1-R3)

ALZET Comments: Phentermine; dexfenfluramine;; water;; SC;; Rat (pregnant);; 2002;; 14 days;; controls received mp w/vehicle; teratology; phentermine and dexfenfluramine infused together in the same pump;

P4196: J. D. Roth, *et al.* Efficacy of administration of dexfenfluramine and phentermine, alone and in combination, on ingestive behavior and body weights in rats. *Psychopharmacology* 1998;137(99-106)

ALZET Comments: Dexfenfluramine HCl; Phentermine HCl; TFMPP; Saline; Water, distilled; SC; Rat; 2001; 7 days; controls received sham surgery; comparison of injections vs. mp; TFMPP is a 5-HT2C agonist [1-[3-tifluoromethyl)-phenyl]piperazine; agents infused alone or in combination; "...suggesting that minipump delivery of DFEN/PHEN is more effective than acute administration" (p. 104).

P2921: N. E. Rowland. Long-term administration of dexfenfluramine to genetically obese (ob/ob) and lean mice: body weight and brain serotonin changes. *Pharmacol. Biochem. Behav* 1994;49(2):287-294

ALZET Comments: Dexfenfluramine; Dexnorfenfluramine; Water; SC; mice; 2002; 14 days; controls received sedation only; tolerance; genetically obese ob/ob and lean mice used; "...because the half-life for elimination of DFEN is rapid in mice compared with humans, higher doses and longer term administration were needed to make this a suitable model".

P2488: N. E. Rowland. Tolerance to the anorectic effect of dexfenfluramine in rats: role of serotonin, cholecystokinin, and neuropeptide y. *Physiol. Behav* 1994;55(2):201-207

ALZET Comments: Dexfenfluramine HCl; Water; SC; Rat; 2002; 28 days; dose response; pumps replaced after 14 days; tolerance.

P2685: P. Celada, *et al.* Effects of chronic treatment with dexfenfluramine on serotonin in rat blood, brain and lung tissue. *Life Sci* 1994;55(15):1237-1243

ALZET Comments: Dexfenfluramine; SC; Rat; 2002; 14 days; controls received mp w/ saline.

P2117: J. P. H. Wilding, *et al.* Dexfenfluramine treatment and hypothalamic neuropeptides in diet-induced obesity in rats. *Peptides* 1992;13(557-563)

ALZET Comments: Dexfenfluramine; Saline; IP; Rat; 2001; 2ML4; 7, 28 days; controls received mp with saline.

P2922: N. E. Rowland, *et al.* Effect of dexfenfluramine on alcohol intake in alcohol-preferring "P" rats. *Alcohol* 1992;9(559-561)

ALZET Comments: Dexfenfluramine; Water; SC; Rat; 2001; 7 days; controls received no mp; comparison of sc injections vs. mp.



P2920: N. E. Rowland, *et al.* Effect of chronic administration of dexfenfluramine on blood pressure in salt-sensitive rats. *Life Sci* 1992;51(13):1021-1024

ALZET Comments: Dexfenfluramine; SC; Rat; 2002; 14 days; no comment posted.

5. Ghrelin

Q7090: Poretti MB, *et al.* Reproductive performance of male mice after hypothalamic ghrelin administration. *Reproduction* 2018;156(2):121-132

ALZET Comments: Ghrelin, acyl-; CSF, artificial; CSF/CNS (hypothalamus); Mice; 1007D, 2006; 7 days, 42 days; Dose (0.5 umol/h/day- 1007D, 0.15 umol/h/day-2006) Controls received mp w/ vehicle; animal info (Adult male mice, 60 days old, 30 g); Brain coordinates (relative to bregma: anterior 0.15 mm, lateral 0.05 mm, vertical 5.5 mm); cyanoacrylate adhesive; dependence;.

Q7138: S. Galic, *et al.* AMPK signaling to acetyl-CoA carboxylase is required for fasting- and cold-induced appetite but not thermogenesis. *Elife* 2018;7(**ALZET Comments:** Ghrelin, N-octanoylated; Ghrelin, N-octanoylated; SC; Mouse; 2002; 14 days; Dose (30 ug/day); Controls received mp w/ vehicle; animal info (Male, ACC DKI); Peptide, recombinant protein aka N-octanoylated murine ghrelin; gene therapy;.

Q6461: A. L. Hopkins, *et al.* Unacylated ghrelin promotes adipogenesis in rodent bone marrow via ghrelin O-acyl transferase and GHS-R1a activity: evidence for target cell-induced acylation. *Sci Rep* 2017;7(45541

ALZET Comments: Ghrelin, acylated; Ghrelin, unacylated; Saline; BSA; Heparin; Bone (tibia); Mice; 1007D; 7 days; Dose (720 ng/day); animal info (9-month old male loxTB-GHS-R mice);.

Q6243: N. E. Hill, *et al.* Impact of ghrelin on body composition and muscle function in a long-term rodent model of critical illness. *PLoS One* 2017;12(8):e0182659

ALZET Comments: Ghrelin; Saline; SC; Rat; 2ML2; 2002; 10 days; Dose (300 nmol/kg/day); Controls received mp w/ vehicle; animal info (Male Wistar rats weighing 274±333 g); delayed delivery (48 hours);.

Q6420: T. Bake, *et al.* Acute ghrelin changes food preference from a high-fat diet to chow during binge-like eating in rodents. *J Neuroendocrinol* 2017;29(4):

ALZET Comments: Ghrelin; CSF, artificial; CSF/CNS (lateral ventricle); Rat; 2004; 28 days; Dose (0.5 µg/h); Controls received mp w/ vehicle; animal info (male Sprague-Dawley rats weighing 200-220g); ALZET brain infusion kit 2 used; Brain coordinates (0.9 mm posterior to bregma, ±1.6 mm lateral to the midline and 2.5 mm ventral of the skull surface); Cannula placement verified via post mortem injection of 2.0 µL of India ink into the cannula after the tubing was disconnected;.

Q6315: W. Ai, *et al.* Ghrelin ameliorates atherosclerosis by inhibiting endoplasmic reticulum stress. *Fundam Clin Pharmacol* 2017;31(2):147-154

ALZET Comments: Ghrelin; Mice; 2004; 4 weeks; Dose (10-9 mol/kg/day); animal info (Male ApoE $_/_$ mice and wild-type C57BL/6J mice weighing 28–32 g (age 17 weeks));.

Q4888: A. Veronique St-Onge, Alfonso Abizaid. Ghrelin enhances cue-induced bar pressing for high fat food. *Horm. Behav* 2016;78(141-149

ALZET Comments: Ghrelin; growth hormone-releasing peptide 6, [D-Lys-3]; Saline; CSF/CNS (ventral tegmental area); Rat; 2002; 14 days; Controls received mp w/ vehicle; animal info (male, Long evans, 216-375g); post op. care (SC injection of meloxicam; feed of mashed food); behavioral testing (food operant responses); used Plastics One cannula; obesity;.

Q5168: T. Nojiri, *et al.* Protective effects of ghrelin on cisplatin-induced nephrotoxicity in mice. *Peptides* 2016;82(85-91

ALZET Comments: Ghrelin; Saline; SC; Mice; 1003D; 3 days; Controls received mp w/ vehicle; Controls received mp w/ vehicle; toxicology; cardiovascular; Dose 0.8 ug/kg/min;.



Q4684: Y. Y. Zhang, *et al.* Reduced autophagy in livers of fasted, fat-depleted, ghrelin-deficient mice: Reversal by growth hormone. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2015;112(1226-1231

ALZET Comments: Ghrelin, recombinant rat; Sodium bicarbonate; NaCl; albumin, rat; SC; Mice; 1002; Controls received mp w/ vehicle; animal info (male, Goat -/-, 8 weeks old); diabetes; obesity;.

Q4675: W. W. Zeng, *et al.* Reanalysis of parabiosis of obesity mutants in the age of leptin. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2015;112(E3874-E3882

ALZET Comments: Leptin; acyl-ghrelin; growth hormone; SC; Mice; 5 weeks; Controls received mp w/ saline; animal info (C57BL6J or db or clusterin KO, 6-8 weeks old); functionality of mp verified by leptin plasma levels; obesity;.

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;.

Q4593: R. Stark, *et al.* Acyl Ghrelin Acts in the Brain to Control Liver Function and Peripheral Glucose Homeostasis in Male Mice. ENDOCRINOLOGY 2015;156(858-868

ALZET Comments: Ghrelin, acyl; CSF, artificial; CSF/CNS (third ventricle); Mice; 1007D; 7 days; Controls received mp w/ vehicle; animal info (male, C57BL6); ALZET brain infusion kit 3 used; tissue perfusion (third ventricle);.

Q4493: B. Li, *et al.* Ghrelin Protects Alveolar Macrophages Against Lipopolysaccharide-Induced Apoptosis Through Growth Hormone Secretagogue Receptor 1a-Dependent c-Jun N-Terminal Kinase and Wnt/beta-Catenin Signaling and Suppresses Lung Inflammation. ENDOCRINOLOGY 2015;156(182-192

ALZET Comments: Ghrelin; Saline; IV (jugular); Rat; 2001D; 24 hours; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 6-7 weeks old, 300 +/- 20g); immunology; pumps primed for 3 hours in 37C saline;.

6. Glucagon-like Peptide 1

Q7188: B. Jones, *et al.* Targeting GLP-1 receptor trafficking to improve agonist efficacy. Nat Commun 2018;9(1):1602

ALZET Comments: Glucagon-like peptide-1 receptor agonist; Glucagon-like peptide-1 receptor agonist; SC; Mice; 2004; 2 weeks; Dose (0.24 nmol/kg/day); animal info (Male C57BL/6 J mice; 8–10 weeks); Glucagon-like peptide-1 receptor agonist aka GLP-1R agonist; stress/adverse reaction: (see pg. 10);.

Q5950: C. Quarta, *et al.* Molecular Integration of Incretin and Glucocorticoid Action Reverses Immunometabolic Dysfunction and Obesity. Cell Metab 2017;26(4):620-632 e6

ALZET Comments: Glucagon-like peptide-1, Dexamethasone; Saline; CSF/CNS; Mice; 1002; 14 days; Controls received mp w/ vehicle; Dose (GLP-1: 0.1 mg/24h; Dexa: 0.0219mg/ml); animal info (20 week-old male C57bl6j); post op. care (meloxicam for post-surgical pain (3 mg/kg); ALZET brain infusion kit 3 used; Brain coordinates (anteroposterior: 0.5 mm from bregma, lateral: +/-1;2 mm to bregma and dorsoventral: 2.1 mm below skull); Therapeutic indication (obesity);.

Q5841: A. Karmaker, *et al.* Is OM-3 synergistic with GLP-2 in intestinal failure? J Surg Res 2017;207(7-12

ALZET Comments: Glucagon-like peptide-2; Saline; SC; Rat; 7 days, 14 days, 28 days; Controls received mp w/ vehicle; animal info (200-250g); Rats underwent 80% bowel resection ; Therapeutic indication (Intestinal failure, bowel adaptation, intestinal adaptation); Dose (100 ug/kg);.



- Q5381:** K. Kohashi, *et al.* A Dipeptidyl Peptidase-4 Inhibitor but not Incretins Suppresses Abdominal Aortic Aneurysms in Angiotensin II-Infused Apolipoprotein E-Null mice. *Journal of Atherosclerosis and Thrombosis* 2016;23(4):441-454
ALZET Comments: Angiotensin II; Glucagon-like peptide-1; Glucose-dependent insulinotropic polypeptide; Saline; SC; Mice; 1002; 4 weeks; Controls received mp w/ vehicle; animal info (ApoE -/- mice, 9 weeks old); functionality of mp verified by plasma levels, blood pressure; pumps replaced every 2 weeks; cardiovascular; atherosclerosis; peptides; Pathophysiology similarities btwn abdominal aortic aneurysms, atherosclerosis; blood pressure measure via tail-cuff method; Dose (2000 ng/kg/min AngII, 2.16 nmol/kg/day GLP-1, 25 nmol/kg/day GIP); Resultant blood pressure (Start: 104 mmHg, End: 118 mmHg);
- Q5548:** K. Kohashi, *et al.* A Dipeptidyl Peptidase-4 Inhibitor but not Incretins Suppresses Abdominal Aortic Aneurysms in Angiotensin II-Infused Apolipoprotein E-Null Mice. *Journal of Atherosclerosis and Thrombosis* 2016;23(4):441-454
ALZET Comments: Angiotensin II, Glucagon-like peptide-1, Glucose-Dependent Insulinotropic Polypeptide; Saline; SC; Mice (knockout); 1002; 4 weeks; Controls received mp w/ vehicle; animal info (13 weeks old); pumps replaced every 2 weeks; Multiple pumps per animal (2); one for either Ang II, GLP-1 or GIP; enzyme inhibitor (Dipeptidyl Peptidase-4 inhibitor); Therapeutic indication (Abdominal aortic aneurysm); Dose (Angiotensin II: 2000 ng/kg/min, Angiotensin II + GIP: 25 nmol/kg/day, DPP-4i: 6 mg/kg/day);
- Q4308:** K. Aravindhan, *et al.* Cardioprotection Resulting from Glucagon-Like Peptide-1 Administration Involves Shifting Metabolic Substrate Utilization to Increase Energy Efficiency in the Rat Heart. *PLoS One* 2015;10(U1979-U1996)
ALZET Comments: Glucagon-like peptide-1; Saline; SC; Rat; 2ML2; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-300g); ischemia (cardiac); post op. care (Saline IP, 37C incubator until fully ambulatory); cardiovascular;
- Q5460:** S. Watada, *et al.* Evaluation of intragastric vs intraperitoneal glucose tolerance tests in the evaluation of insulin resistance in a rodent model of burn injury and glucagon-like polypeptide-1 treatment. *J Burn Care Res* 2014;35(1):e66-72
ALZET Comments: Glucagon-like peptide-1 peptide; saline; IA (carotid); iv (jugular); Rat; 2001; 7 days; Controls received mp w/ vehicle; animal info (male CD rats, ~400 g); Braintree Polyethylene Catheters used; Dose (40 ng/kg/min);
- Q3037:** R. Sueyoshi, *et al.* Glucagon-like peptide 2 increases efficacy of distraction enterogenesis. *Journal of Surgical Research* 2013;184(1):365-373
ALZET Comments: Glucagon-like peptide 2 analog;; PEG; SC; Mice; 1007D; 5 days; Control animals received mp w/ GLP-2 w/o PEG; animal info (C57BL/6, 22 g, 10 wks old).
- Q3007:** T. D. Nguyen, *et al.* Glucagon-like peptide-1 reduces contractile function and fails to boost glucose utilization in normal hearts in the presence of fatty acids. *International Journal of Cardiology* 2013;168(4):4085-4092
ALZET Comments: Glucagon-like peptide-1; Saline; IV (jugular vein); Rat; 2ML4; 28 Days; Cardiovascular; peptides; animal info (male, Sprague Dawley rats, 250-350g, 110-130g); functionality verified by residual volume; diabetes;
- Q1653:** P. Moreno, *et al.* Normalizing action of exendin-4 and GLP-1 in the glucose metabolism of extrapancreatic tissues in insulin-resistant and type 2 diabetic states. *Journal of Molecular Endocrinology* 2012;48(1):37-47
ALZET Comments: Glucagon-like peptide-1; exendin-4; Saline; SC; Rat; 1003D; 3 days; Controls received mp w/ vehicle; animal info (Wistar, male, 8 wks old).
- Q2378:** T. Ma, *et al.* Glucagon-Like Peptide-1 Cleavage Product GLP-1(9-36) Amide Rescues Synaptic Plasticity and Memory Deficits in Alzheimer's Disease Model Mice. *Journal of Neuroscience* 2012;32(40):13701-13708
ALZET Comments: Glucagon-like peptide-1 (9-36), amide; Mice; 1002; 2 weeks; Animal info (APP/PS1, male, female, 12 mo old); behavioral testing (Morris water maze test); neurodegenerative (Alzheimer's disease).



Q1718: E. Tomas, *et al.* GLP-1-derived nonapeptide GLP-1(28-36)amide inhibits weight gain and attenuates diabetes and hepatic steatosis in diet-induced obese mice. *REGULATORY PEPTIDES* 2011;169(1-3):43-48

ALZET Comments: Glucagon-like peptide-1 (28-36); Saline; albumin, human serum; acetic acid; SC; Mice; 1004; 4, 8 weeks; Controls received mp w/ vehicle; animal info (C57BL/6, male, 10-17 wks old); peptides; pumps replaced after 4 weeks; long-term study.

Q1348: C. A. Shen, *et al.* Effects of glucagon-like peptide 1 on glycemia control and its metabolic consequence after severe thermal injury—studies in an animal model. *Surgery* 2011;149(5):635-644

ALZET Comments: Glucagon-like peptide-1, (7-36); SC; Rat; Controls received mp w/ saline; animal info (male, CD, 400 g); peptides.

Q1275: B. Nuche-Berenguer, *et al.* GLP-1 and exendin-4 can reverse hyperlipidic-related osteopenia. *Journal of Endocrinology* 2011;209(2):203-210

ALZET Comments: Glucagon-like phosphate-1; exendin-4; Saline; SC; Rat; 1003D; 3 days; Controls received mp w/ vehicle; animal info (11 wks old, male, Wistar); peptides.

Q1519: M. Nagashima, *et al.* Native incretins prevent the development of atherosclerotic lesions in apolipoprotein E knockout mice. *Diabetologia* 2011;54(10):2649-2659

ALZET Comments: Glucagon-like peptide-1 (7-36) amide; glucagon-like peptide-1 (9-36) amide; exendin (9-39) amide; glucose-dependent insulinotropic polypeptide (1-42); glucose-dependent insulinotropic polypeptide (3-42); glucose-dependent insulinotropic polypeptide, pro 3; Saline; Mice; 1007D; 4 weeks; Controls received mp w/ vehicle; animal info (apoE -/-, 17 wks old); peptides.

Q0780: P. Borkiewicz, *et al.* The Results of Prolonged Action of GLP-1 on Some Metabolic Parameters. *FOLIA BIOLOGICA-KRAKOW* 2011;59(1-2):13-17

ALZET Comments: Glucagon-like peptide-1; IP; Rat; 13 days; Controls received mp w/ NaCl; animal info (male, Wistar, 150 g); comparison of IP injections vs. mp; "We concur that the pumps are more correct for long-term metabolic experiments because of the sustenance of stable amounts of used substances, previously placed in the body of animals." pg 14; "Stable and continuous maintenance of a proper concentration of the peptide using Alzet osmotic minipumps can probably achieve a stronger biological effect compared with repeatable application." pg 16; obesity.

7. Leptin

Q6983: C. Caballero-Eraso, *et al.* Leptin acts in the carotid bodies to increase minute ventilation during wakefulness and sleep and augment the hypoxic ventilatory response. *J Physiol* 2019;597(1):151-172

ALZET Comments: Leptin; Saline; SC; Mice; 2 days; Dose (120 µg/day); Controls received mp w/ vehicle;.

Q6878: D. M. Arble, *et al.* Vertical sleeve gastrectomy improves ventilatory drive through a leptin-dependent mechanism. *JCI Insight* 2019;4(1):

ALZET Comments: Leptin; Water; SC; Mice; 6 weeks; Dose (10µg/day); Controls received mp w/ vehicle; animal info (C57BL6/J WT and ob/ob male mice, 6-8 weeks of age);.

Q7236: T. Murata, *et al.* Leptin Aggravates Reflux Esophagitis by Increasing Tissue Levels of Macrophage Migration Inhibitory Factor in Rats. *Tohoku J Exp Med* 2018;245(1):45-53

ALZET Comments: Leptin; PBS; SC; Rat; 2001; 1 week; Dose (0.6 mg/Kg-weight); 200 µL of 10 mM used; Controls received mp w/ vehicle; Controls received mp w/ vehicle;.



R0365: L. Maletinska, *et al.* The impact of anorexigenic peptides in experimental models of Alzheimer's disease pathology. *J Endocrinol* 2018;

ALZET Comments: PrRP palmitoylated analogs, Leptin, Amylin, Cyclic AC253, Exendin 4; SC, CSF/CNS (lateral ventricle); Mice; 2 months; 28 days; 5 weeks, 5 months, 16 weeks; Dose: Palm11-PrRP (5 mg/kg/day), Leptin (2.4 nmol/day), Amylin (0.24 mg/kg/day), Exendin-4 (3.5 pmol/kg/min); animal info (7 month old THY-Tau22 mice; 5 month old APP/PS1 mice; 6 month old AMP8 mice); behavioral testing (Y-maze); neurodegenerative (Alzheimer's); This review summarizes current information on the potential neuroprotective properties of food intake-lowering (anorexigenic) peptides that have been tested in experimental models of AD-like pathology.

Q4806: M. Labyb, *et al.* Oxytocin Administration Alleviates Acute but Not Chronic Leptin Resistance of Diet-Induced Obese Mice. *Int J Mol Sci* 2018;20(1):

ALZET Comments: Oxytocin; leptin; Saline; SC; Mice; 2 weeks; Dose (oxytocin (50 µg/day); leptin (20 or 40 µg/day)); Controls received mp w/ vehicle; animal info (Eight-week-old C57BL/6JRj male mice); "Osmotic pump content was verified postmortem in order to ensure complete drug delivery."

Q5956: J. Tam, *et al.* Peripheral cannabinoid-1 receptor blockade restores hypothalamic leptin signaling. *Mol Metab* 2017;6(10):1113-1125

ALZET Comments: Leptin; SHU-9119; PBS; SC; CSF/CNS; Mice; 2004; 12 weeks, 7 days; Controls received mp w/ vehicle; animal info (leptin-deficient ob/ob mice); long-term study; pumps replaced every 28 days; SHU-9119 is a MC4R antagonist; Leptin dissolved in PBS and delivered SC for 12 weeks; SHU-9119 dissolved in saline and delivered ICV for 7 days; Pumps model incorrectly listed as Model 2001D. It should be Model 2004 based on description.

Q6797: Y. Shimizu, *et al.* Role of leptin in conditioned place preference to high-fat diet in leptin-deficient ob/ob mice. *Neurosci Lett* 2017;640(60-63

ALZET Comments: Leptin, recomb. mouse; Saline; SC; Mice; 1 week; 4 weeks; Dose (4.8 µg/day); Controls received mp w/ vehicle; animal info (Animals Male C57BL/6J mice and ob/ob mice (5-week and 8-week old));.

Q5797: M. Sakaguchi, *et al.* Adipocyte Dynamics and Reversible Metabolic Syndrome in Mice with an Inducible Adipocyte-Specific Deletion of the Insulin Receptor. *Cell Metab* 2017;25(2):448-462

ALZET Comments: Leptin; Saline; SC; Mice; 1002; 12 days; Controls received mp w/ vehicle; animal info (8 weeks old); Therapeutic indication (Metabolic syndrome, Syndrome X); Dose (10 µg/day);.

Q6713: K. A. Philbrick, *et al.* Leptin stimulates bone formation in ob/ob mice at doses having minimal impact on energy metabolism. *J Endocrinol* 2017;232(3):461-474

ALZET Comments: Leptin; SC; Mice; 1002; 12 days; Dose (0, 4, 12, 40, 140, or 400 ng/h); dose-response (Fig 2; Page 16); animal info (6-week-old female ob/ob mice); Therapeutic indication (obesity);.

Q5820: R. J. Perry, *et al.* Mechanism for leptin's acute insulin-independent effect to reverse diabetic ketoacidosis. *J Clin Invest* 2017;127(2):657-669

ALZET Comments: Leptin; Saline; SC; Mice; 1004; 2 weeks, 14 days; Controls received mp w/ vehicle; animal info (8 weeks old); diabetes; Therapeutic indication (diabetic ketoacidosis); Dose (0.624 µg/hr);.

Q6701: P. Mota, *et al.* Mp17-14 Depletion of Peripheral Serotonin Synthesis Induces Benign Prostatic Growth in Mice: More Evidence for the New "Neuroendocrine Theory" in Bph Etiology. *The Journal of Urology* 2017;197(4):e216-e217

ALZET Comments: Leptin; SC; Mice; 24 weeks; Dose (5 mg/day; 10 mg/day); Controls received mp w/ vehicle; animal info (10-week-old male ObOb and strain-matched control mice); pumps replaced every 12 weeks; Multiple pumps per animal (2); long-term study;.



Q5828: K. Matoba, *et al.* Leptin sustains spontaneous remyelination in the adult central nervous system. *Sci Rep* 2017;7(40397)

ALZET Comments: Antibody, leptin neutralizing; leptin, recombinant mouse; PBS; CSF/CNS (intrathecal); Mice; 1007D, 1002; Controls received mp w/ vehicle; animal info (7-8 weeks old) ; ALZET brain infusion kit used; neurodegenerative (Demyelination); Therapeutic indication (Demyelination); Dose ((12 μ g/kg body weight per day, 10 μ g/kg of body weight per day));

Q6248: R. B. S. Harris. Low-dose leptin infusion in the fourth ventricle of rats enhances the response to third-ventricle leptin injection. *Am J Physiol Endocrinol Metab* 2017;313(2):E134-E147

ALZET Comments: Leptin; CSF/CNS (fourth ventricle); Rat; 2004; 11 days; 13 days; Dose (0.01, 0.1, 0.3, or 0.6 μ g/24 h); Controls received mp w/ vehicle; animal info (rats weighing ~280 g);

Q6091: A. Gupta, *et al.* Chronic hyper-leptinemia induces insulin signaling disruption in adipocytes: Implications of NOS2. *Free Radic Biol Med* 2017;112(93-108)

ALZET Comments: Leptin, recomb. murine; HCl; SC; Mice; 2004; 4 weeks; Dose (2.5 mg/ml); animal info (6-8 week old C57BL/6 and NOS2^{-/-} mice);

Q6257: N. Gomez-Hurtado, *et al.* Beneficial effects of leptin treatment in a setting of cardiac dysfunction induced by transverse aortic constriction in mouse. *J Physiol* 2017;595(13):4227-4243

ALZET Comments: Leptin; Tris; Saline; SC; Mice; 3 weeks; Dose (0.36 mg/kg/day); 20 mmol L⁻¹ Tris, 150 nmol L⁻¹ NaCl used; Controls received mp w/ vehicle; animal info (Ten-week-old C57Bl/6 male mice); cardiovascular;

Q6157: E. A. Flatow, *et al.* Elucidating the role of leptin in systemic inflammation: a study targeting physiological leptin levels in rats and their macrophages. *Am J Physiol Regul Integr Comp Physiol* 2017;313(5):R572-R582

ALZET Comments: Leptin; Saline; CSF/CNS (lateral ventricle); Rat; 1003D; 3 days; Controls received mp w/ vehicle; animal info (Male Wistar rats weighing 180–250 g); post op. care (5 mg/kg ketoprofen); Brain coordinates (0.5 mm caudal to the bregma and 1.5 mm to the right of the midline);

Q6386: Dorfman MD, *et al.* Deletion of Protein Kinase C δ in POMC Neurons Predisposes to Diet-Induced Obesity. *Diabetes* 2017;66(4):920-934

ALZET Comments: Leptin; PBS; CSF/CNS; Rat; Mice; 14 days; animal info (male Wistar rats; Eight-week-old male and female POMC-IKO and WT mice); Brain coordinates (0.8 mm posterior to bregma; 1.5 mm lateral to the sagittal suture, and 3.6 mm below the skull surface); diabetes;

Q6387: J. M. do Carmo, *et al.* Changes in ambient temperature elicit divergent control of metabolic and cardiovascular actions by leptin. *FASEB J* 2017;31(6):2418-2428

ALZET Comments: Leptin; Saline; SC; Mice; 1007D; 7 days; Dose (4 mg/kg/min); Controls received mp w/ vehicle; animal info (22 week old Male wild-type (WT) C57BL/6J mice); cardiovascular;

Q6021: A. A. da Silva, *et al.* Role of autonomic nervous system in chronic CNS-mediated antidiabetic action of leptin. *Am J Physiol Endocrinol Metab* 2017;312(5):E420-E428

ALZET Comments: Leptin, Hexamethonium; Saline; CSF/CNS (lateral ventricle); Rat; 2002; 12 days; Controls received mp w/ vehicle; animal info (360-420g); diabetes; Therapeutic indication (Diabetes); Dose (Hexamethonium: 15 mg/kg);

Q6006: K. T. Chang, *et al.* Leptin is essential for microglial activation and neuropathic pain after preganglionic cervical root avulsion. *Life Sci* 2017;187(31-41)

ALZET Comments: Leptin; PBS; CSF/CNS (Cervical); Mice; 2004; 28 days; Controls received mp w/ vehicle; animal info (male and female, C57B/6 J (B6) and Ob); Therapeutic indication (Obesity, Neuropathic pain); Dose (1 μ g/day);

Q6115: L. R. Beutler, *et al.* Dynamics of Gut-Brain Communication Underlying Hunger. *Neuron* 2017;96(2):461-475 e5

ALZET Comments: Leptin; SC; Mice; 2002; 10 days; Dose (450 ng/hr); Controls received mp w/ vehicle; animal info (ob/ob mice); Therapeutic indication (Obesity);



Q5101: S. Xu, *et al.* The 14th Ile residue is essential for Leptin function in regulating energy homeostasis in rat. *Sci Rep* 2016;6(28508)

ALZET Comments: Leptin, rat recombinant; Saline, sterile; SC; Rat; 2001; 7 days; Controls received mp w/ vehicle; animal info (female, Lep114/114 or Wt); animal info (female, Lep114/114 or Wt); obesity.

Q5211: O. O. Talton, *et al.* Maternal Hyperleptinemia Improves Offspring Insulin Sensitivity in Mice. *Endocrinology* 2016;157(7):2636-48

ALZET Comments: Leptin; Saline; SC; Mice (pregnant); 2004; Controls received mp w/ vehicle; animal info (female, WT); stress/adverse reaction: (see pg. 2645); teratology; diabetes; Dose (350 ng/h);

Q6596: R. Maurya, *et al.* Differential Role of Leptin as an Immunomodulator in Controlling Visceral Leishmaniasis in Normal and Leptin-Deficient Mice. *Am J Trop Med Hyg* 2016;95(1):109-19

ALZET Comments: Leptin, recomb.; PBS; IP; Mice; 2002; 2 weeks; Dose (10 ug/day); Controls received mp w/ vehicle; animal info (9- to 10-week old female C57Bl/6 wild-type mice and congenic C57Bl/6-Ob/Ob mice);

Q6615: P. Martin-Mateos, *et al.* In-vivo, non-invasive detection of hyperglycemic states in animal models using mm-wave spectroscopy. *Sci Rep* 2016;6(34035)

ALZET Comments: Leptin; SC; Mice; 28 days; Controls received mp w/ vehicle; animal info (C57Bl6/J, albino BalbC and ob/ob mice); diabetes;

Q5392: J. Li, *et al.* Human C-reactive protein impedes entry of leptin into the CNS and attenuates its physiological actions in the CNS. *Biochem J* 2016;473(9):1215-24

ALZET Comments: C-reactive protein, human; Leptin, human; PBS; SC; Mice; 1007D; 7 days; Controls received mp w/ vehicle; animal info (Male C57Bl/6J ob/ob mice (8 week olds)); functionality of mp verified by serum and CSF levels; Measurement of leptin content in CSF of mice; Dose (1 mg/kg/day CRP; 0.2 or 0.6 mg/kg/day Leptin);

Q6566: K. J. Kaiyala, *et al.* Physiological role for leptin in the control of thermal conductance. *Mol Metab* 2016;5(10):892-902

ALZET Comments: Leptin; PBS; SC; Mice (knockout); 1007D; Dose (100 ng/h); Controls received mp w/ vehicle; animal info (Adult male leptin-deficient ob/ob mice);

Q4626: Jussara M. do Carmo, *et al.* Regulation of Blood Pressure, Appetite, and Glucose by Leptin After Inactivation of Insulin Receptor Substrate 2 Signaling in the Entire Brain or in Proopiomelanocortin Neurons. *Hypertension* 2016;67):378-386

ALZET Comments: Leptin; Saline; IP; Mice; 1007D; 7 days; Controls received mp w/ vehicle; animal info (RIS2 flox/flox or Nestin-cre, 22 weeks old); functionality of mp verified by leptin plasma levels; behavioral testing (air jet stress test; motor activity); cardiovascular; Dose (4 ug/kg/min);

Q5316: Jeremie Boucher, *et al.* Differential Roles of Insulin and IGF-1 Receptors in Adipose Tissue Development and Function. *Diabetes* 2016;66(2201-2213)

ALZET Comments: Leptin; Saline; SC; Mice; 1002; 14 days; Controls received mp w/ vehicle; animal info (Fat-specific IR, IGF1R, and IR/IGF1R knockout mice; 3 month old); functionality of mp verified by blood glucose levels; dose-response (pg 2204-2206); behavioral testing (cold-resistance testing); replacement therapy (leptin); Lipoatrophic diabetes; Dose (10 ug/mouse/d);

Q6090: R. B. Harris, *et al.* Fourth-ventricle leptin infusions dose-dependently activate hypothalamic signal transducer and activator of transcription 3. *Am J Physiol Endocrinol Metab* 2016;311(6):E939-E948

ALZET Comments: Leptin, recomb. rat; CSF/CNS (fourth ventricle); Rat; 1002; 7 days; Dose (0, 0.1, 0.3, 0.6, 0.9, 1.2, or 2.0 ug/day); dose-response (Fig. 1 & 2); animal info (male Sprague-Dawley rats weighing 330–350 g);



Q4872: H. Pho, *et al.* The effect of leptin replacement on sleep-disordered breathing in the leptin-deficient *ob/ob* mouse. *J Appl. Physiol* 2016;120(78-86

ALZET Comments: Leptin, recombinant; Saline; SC; Mice; 1003D; 3 days; Controls received mp w/ vehicle; animal info (male, *ob/ob*, 23 weeks old); functionality of mp verified by leptin plasma levels; stress/adverse reaction: (see pg. 81); pumps explanted after 3 days; Dose (30 ug/day);.

Q5783: H. C. Denroche, *et al.* The role of autonomic efferents and uncoupling protein 1 in the glucose-lowering effect of leptin therapy. *Mol Metab* 2016;5(8):716-24

ALZET Comments: Leptin, recombinant mouse; PBS; SC; Mice; 9 days; Controls received mp w/ vehicle; animal info (6 weeks old); functionality of mp verified by leptin and glucose levels: (After leptin release from the osmotic pumps had ceased (~9.2 days after pump implantation), hyperglycemia rapidly returned to pre-treatment levels in 6OHDA-leptin and sham-leptin groups, concomitant with the reduction of plasma leptin levels (Figure 3A,C)); diabetes; Temperature transponders (Implantable Programmable Temperature Transponder IPTT-300; Bio Medic Data Systems Inc, Seaford, USA) were implanted interscapularly at the same time as osmotic pumps. After leptin release from the osmotic pumps had ceased (w/9.2 days after pump implantation), hyperglycemia rapidly returned to pre-treatment levels in 6OHDA-leptin and sham-leptin groups, concomitant with the reduction of plasma leptin levels (Figure 3A,C) Therapeutic indication (Diabetes Type 1, Brown adipose tissue); Dose (10, 20 ug/day);.

Q5304: H. C. Denroche, *et al.* Disrupted Leptin Signaling in the Lateral Hypothalamus and Ventral Premammillary Nucleus Alters Insulin and Glucagon Secretion and Protects Against Diet-Induced Obesity. *Endocrinology* 2016;157(7):2671-85

ALZET Comments: Leptin, recombinant mouse; SC; mice; 1007D, 1002; 15 days; Controls received mp w/ vehicle; animal info (Male *Lep^{flx/flx}* and *Lep^{flx/flx} Syn-cre* mice, 12-14 wks); functionality of mp verified by plasma levels; pumps replaced after day 10; dose-response (pg. 2679); diabetes; Dose (10 ug/d or 20 ug/d);.

Q5640: J. A. Davidson, *et al.* Glucagon therapeutics: Dawn of a new era for diabetes care. *Diabetes Metab Res Rev* 2016;32(7):660-665

ALZET Comments: Metroleptin; SC; mice; 17 days; diabetes; "While we applaud the efforts of the insulin/glucagon pump infusion studies, the delivery space cannot simulate normal physiology (Figure 1B). p.663 ; Therapeutic indication (Diabetes, Glucagon, Glucagon receptor, insulin); Dose (400 mg/day);.

Q5779: N. M. Dalesio, *et al.* Effects of Obesity and Leptin Deficiency on Morphine Pharmacokinetics in a Mouse Model. *Anesth Analg* 2016;123(6):1611-1617

ALZET Comments: Leptin, recombinant mouse; Mice; 1003D; 3 days; animal info (9 week old *ob/ob* mice; weight: chart p. 1613) ; post op. care (morphine); Therapeutic indication (Obesity);.

Q5766: K. H. Chhabra, *et al.* Reprogramming the body weight set point by a reciprocal interaction of hypothalamic leptin sensitivity and *Pomc* gene expression reverts extreme obesity. *Mol Metab* 2016;5(10):869-81

ALZET Comments: Leptin; PBS; CSF/CNS (Left lateral ventricle); Mice; 14 days, 2 weeks; Controls received mp w/ vehicle; Leptin transport across the blood-brain barrier is required for its effects to decrease food intake and body weight [39e41] ; Therapeutic indication (Leptin resistance, obesity); Dose (10 ug/day);.

8. Melanin-concentrating Hormone

Q5840: Y. Kawata, *et al.* A novel and selective melanin-concentrating hormone receptor 1 antagonist ameliorates obesity and hepatic steatosis in diet-induced obese rodent models. *Eur J Pharmacol* 2017;796(45-53

ALZET Comments: Melanin-concentrating hormone; Water, distilled; CSF/CNS (lateral ventricle); Mice; 1002; 2 weeks, 14 days; Controls received mp w/ vehicle; animal info (11 weeks-14 weeks); functionality of mp verified by measuring blood plasma parameters; Therapeutic indication (Obesity, non-alcoholic fatty liver disease); Dose (2.5 µg/mouse/day);.



Q2601: M. Imbernon, *et al.* Central Melanin-Concentrating Hormone Influences Liver and Adipose Metabolism Via Specific Hypothalamic Nuclei and Efferent Autonomic/JNK1 Pathways. *Gastroenterology* 2013;144(3):636-U254

ALZET Comments: Melanin-concentrating hormone; CSF/CNS; Rat; 2001; 1007D; 7 days; Control animals received mp w/ saline; animal info (Sprague Dawley, male, 8-10 wks old, 250-300 g).

Q0432: M. Glick, *et al.* Chronic MCH infusion causes a decrease in energy expenditure and body temperature, and an increase in serum IGF-1 levels in mice. *Endocrine* 2009;36(3):479-485

ALZET Comments: Melanin-concentrating hormone; CSF, artificial; CSF/CNS; Mice; 2002; 14 days; Controls received mp w/ vehicle; peptides; cyanoacrylate adhesive; animal info (12 wks old, C57BL/6); cannula placement verified post mortem with Evans Blue dye; endocrinology.

P9273: M. Ito, *et al.* Antagonism of central melanin-concentrating hormone 1 receptor alleviates steatohepatitis in mice. *Journal of Endocrinology* 2008;198(2):309-315

ALZET Comments: Melanin-concentrating hormone 1, receptor antagonist; Water, distilled; propylene glycol; CSF/CNS; Mice; 2004; 4, 8 weeks; Controls received mp w/ vehicle; pumps replaced after 2 or 4 weeks; no stress (see pg. 311, 314); ALZET brain infusion kit used; peptides; post op. care (Cefamezin); animal info (male, C57BL/6, 10 wks old, 16 wks old, 1 year old); animals received mp w/vehicle for 2 or 4 weeks, then mp with agent or vehicle for 2 or 4 more weeks; dental cement used; cannula placement confirmed at end of experiment with Evans blue dye.

P8300: M. M. Messina, *et al.* Cardiovascular effects of melanin-concentrating hormone. *REGULATORY PEPTIDES* 2007;139(1-3):23-30

ALZET Comments: Melanin-concentrating hormone; PBS; BSA; CSF/CNS; Rat; 1002; 10 days; Controls received mp w/ vehicle; dose-response (fig. 1); comparison of acute icv infusion vs. mp; peptides; post op. care (Bupivacaine); animal info (male, Long-Evans, 330g.).

P8513: A. Gomori, *et al.* Blockade of MCH1 receptor signalling ameliorates obesity and related hepatic steatosis in ovariectomized mice. *Br. J. Pharmacol* 2007;151(6):900-908

ALZET Comments: Melanin-concentrating hormone 1, receptor antagonist; Propylene glycol; water, distilled; CSF/CNS; Mice; 2004; 8 weeks; Controls received mp w/ vehicle; pumps replaced after 4 weeks of vehicle delivery; ALZET brain infusion kit used; post op. care (cefamezin-a); animal info (female, C57BL/6J, 12 weeks old, female Mch1r KD, 14-16 weeks old, 22 g); cannula placement confirmed with Evans Blue dye; obesity.

P7245: S. Mashiko, *et al.* Antiobesity effect of a melanin-concentrating hormone 1 receptor antagonist in diet-induced obese mice. *Endocrinology* 2005;146(7):3080-3086

ALZET Comments: Melanin-concentrating hormone 1 receptor antagonist; Propylene glycol; CSF, artificial; CSF/CNS; CSF/CNS (third ventricle); Mice; 1007D; 2002; 2004; 3, 8 weeks; Controls received mp w/ vehicle; pumps replaced after 1 or 4 weeks of vehicle; ALZET brain infusion kit used; peptides; cyanoacrylate adhesive; post op. care (cefamedin); DEXA; cannula placement confirmed by Evans blue dye injection; animal info (C57BL/6); pumps used in lateral ventricle for one group of animals, and third ventricle for others. Third ventricle group used Plastics One cannulae.

P6233: L. P. Shearman, *et al.* Chronic MCH-1 receptor modulation alters appetite, body weight and adiposity in rats. *European Journal of Pharmacology* 2003;475(1-3):37-47

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).

P5605: A. Gomori, *et al.* Chronic intracerebroventricular infusion of MCH causes obesity in mice. *AMERICAN JOURNAL OF PHYSIOLOGY-ENDOCRINOLOGY AND METABOLISM* 2003;284(3):E583-E588

ALZET Comments: Melanin-concentrating hormone; Propylene glycol; CSF/CNS; Mice; 2001; 14 days; Controls received mp w/ vehicle; peptides; ALZET brain infusion kit used; 1st pump with vehicle only to allow for recovery (7-14 days), then the pump was replaced for MCH infusion; obesity.



P5066: D. J. Marsh, *et al.* Melanin-concentrating hormone 1 receptor-deficient mice are lean, hyperactive, and hyperphagic and have altered metabolism. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2002;99(5):3240-3245

ALZET Comments: Melanin-concentrating hormone; CSF, artificial; CSF/CNS (third ventricle); mice; 6 days; controls received mp w/ vehicle; comparison of ICV injections vs mp; peptides; cannula patency verified via cresyl violet staining; mice received vehicle pumps for 6 days; pump model not indicated; pumps used had release rate of 0.5 ul/hr.

P5509: O. Della-Zuana, *et al.* Acute and chronic administration of melanin-concentrating hormone enhances food intake and body weight in Wistar and Sprague-Dawley rats. International Journal of Obesity 2002;26(10):1289-1295

ALZET Comments: Melanin-concentrating hormone; CSF, artificial; CSF/CNS; Rat; 2002; 12 days; Controls received mp w/ vehicle; peptides; ALZET brain infusion kit used; cannula placement verified following injection of Evans blue dye.

9. Melanotan

Q6887: E. Minakova, *et al.* Melanotan-II reverses autistic features in a maternal immune activation mouse model of autism. PLoS One 2019;14(1):e0210389

ALZET Comments: Melanotan-II; Water, sterile; Saline; CSF/CNS (left lateral ventricle); Mice; 1007D; 1002; 7 days; 14 days; Dose (2.5 µg/day); Controls received mp w/ vehicle; animal info (Four- to six-month-old male MIA and male control C57BL/6J mice weighing 25-30g); behavioral testing (self-grooming test; three chamber test; Exploratory behavior; marble burying); ALZET brain infusion kit 3 used; Brain coordinates (posterior 0.20 mm, left 0.8 mm, ventral 2.5 mm); cyanoacrylate adhesive; neurodegenerative (Autism spectrum disorder);.

Q7126: A. A. da Silva, *et al.* Control of appetite, blood glucose, and blood pressure during melanocortin-4 receptor activation in normoglycemic and diabetic NPY-deficient mice. Am J Physiol Regul Integr Comp Physiol 2018;314(4):R533-R539

ALZET Comments: Melanotan II; Saline; CSF/CNS (left lateral ventricle); Mice; 1007D; 7 days; Dose (200 µg/kg/day); Controls received mp w/ vehicle; animal info (male, 20-24 week old); antagonist aka melanocortin 3/4; diabetes;.

Q5824: I. Mosialou, *et al.* MC4R-dependent suppression of appetite by bone-derived lipocalin 2. Nature 2017;543(7645):385-390

ALZET Comments: Melanotan II, Lipocalin 2; Saline; CSF/CNS (third ventricle); Mice; 1002; 14 days; Controls received mp w/ vehicle; animal info (10-12 weeks old); ALZET brain infusion kit 2 used; Therapeutic indication (Bone); Dose (0.125 mg ml⁻¹);.

Q6393: I. Cote, *et al.* Activation of the central melanocortin system chronically reduces body mass without the necessity of long-term caloric restriction. Can J Physiol Pharmacol 2017;95(2):206-214

ALZET Comments: Melanotan II; CSF, artificial; CSF/CNS (lateral ventricle); Rat; 54 days; Dose (0.04 µg/day or 1 µg/day); Controls received mp w/ vehicle; animal info (Six-month-old male Fisher 344 × Brown Norway (F344BN) rats); pumps replaced every 2 weeks; Brain coordinates (1.3 mm posterior to bregma, 1.9 mm lateral to the midsagittal suture, and to a depth of 3.5 mm);.

Q6121: Y. Shen, *et al.* Stimulation of the Hippocampal POMC/MC4R Circuit Alleviates Synaptic Plasticity Impairment in an Alzheimer's Disease Model. Cell Rep 2016;17(7):1819-1831

ALZET Comments: Melanotan-II, D-Tyrosine; MCL 0020; HS024; CSF, artificial; CSF/CNS (lateral ventricle); Mice; 1004; 28 days; Dose (D-Tyr 2.4 nmol/day, MCL 0020 2.0 nmol/day, HS024 0.2 nmol/day); Controls received mp w/ vehicle; animal info (5-month-old AD transgenic mice); HS024 and MCL 0020 are selective antagonists of MC4R; neurodegenerative (Alzheimer's);.



Q3999: T. H. Meek, *et al.* Role of Melanocortin Signaling in Neuroendocrine and Metabolic Actions of Leptin in Male Rats With Uncontrolled Diabetes. *Endocrinology* 2014;155(4):157-4167

ALZET Comments: SHU9119; leptin; melanotan-II; Saline; PBS; water, sterile; CSF/CNS; SC; Rat; mice; 11 days; Controls received mp w/ vehicle; animal info (rat - male, Wistar, adult; mice - STZ-DM, AgRP-deficient or WT); functionality of mp verified by decreased insulin plasma levels; Multiple pumps per animal (2); diabetes; melanotan-II aka MTII; delayed delivery - catheters filled with saline; received drug on day 5; bilateral infusion for rat;.

R0247: J. D. Fernstrom, *et al.* The development of tolerance to drugs that suppress food intake. *PHARMACOLOGY & THERAPEUTICS* 2008;117(1):105-122

ALZET Comments: Fenfluramine; leptin; melanotan II; CSF, artificial; PBS; SC; CSF/CNS; Rat; 8 weeks; 7, 28 days; Controls received mp w/ vehicle; dose-response (fig. 5); pumps replaced; tolerance; peptides; animal info (male, obese); endocrinology; review, see p. 108-110; long-term study.

P8659: A. D. Strader, *et al.* The effects of the melanocortin agonist (MT-II) on subcutaneous and visceral adipose tissue in rodents. *Journal of Pharmacology and Experimental Therapeutics* 2007;322(3):1153-1161

ALZET Comments: Melanotan-II; PBS; SC; Rat; mice; 14 days; Controls received mp w/ vehicle; MRI; animal info (male, Long Evans, 225-250g; male, C57BL/6J, 5 wks old); Melanocortin receptor agonist.

P6877: Y. Zhang, *et al.* Aged-obese rats exhibit robust responses to a melanocortin agonist and antagonist despite leptin resistance. *NEUROBIOLOGY OF AGING* 2004;25(10):1349-1360

ALZET Comments: Melanotan II; SHU9119; CSF, artificial; CSF/CNS; Rat; 14,21 days; pumps replaced after 7 days; all animals received an initial 7 day aCSF infusion.

P7055: G. Li, *et al.* Unabated anorexic and enhanced thermogenic responses to melanotan II in diet-induced obese rats despite reduced melanocortin 3 and 4 receptor expression. *Journal of Endocrinology* 2004;182(1):123-132

ALZET Comments: Leptin, recomb. mouse; melanotan II; CSF, artificial; CSF/CNS; Rat; 2001; 6 days; Controls received mp w/ vehicle; ALZET brain infusion kit 2 used.

P6874: R. Banno, *et al.* The melanocortin agonist melanotan II increases insulin sensitivity in OLETF rats. *Peptides* 2004;25(8):1279-1286

ALZET Comments: Melanotan II; Saline; SC; Rat; 2ML4; 25 days; Controls received mp w/ vehicle.

10. Neuropeptide Y

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;

Q1862: F. Xie, *et al.* Long-term Neuropeptide Y Administration in the Periphery Induces Abnormal Baroreflex Sensitivity and Obesity in Rats. *CELLULAR PHYSIOLOGY AND BIOCHEMISTRY* 2012;29(1-2):111-120

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.



Q2311: J. C. Morales-Medina, *et al.* The selective neuropeptide Y Y(5) agonist [cPP(1-7),NPY(19-23),Ala(31),Aib(32),Gln(34)]hPP differently modulates emotional processes and body weight in the rat. *Behavioural Brain Research* 2012;233(2):298-304

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.

Q3005: R. Matyal, *et al.* Neuropeptide Y improves myocardial perfusion and function in a swine model of hypercholesterolemia and chronic myocardial ischemia. *Journal of Molecular and Cellular Cardiology* 2012;53(6):891-898

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).

Q1285: E. Preston, *et al.* Central neuropeptide Y infusion and melanocortin 4 receptor antagonism inhibit thyrotropic function by divergent pathways. *Neuropeptides* 2011;45(6):407-415

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.

Q1605: M. P. Robich, *et al.* Effects of neuropeptide Y on collateral development in a swine model of chronic myocardial ischemia. *Journal of Molecular and Cellular Cardiology* 2010;49(6):1022-1030

ALZET Comments: Neuropeptide Y (3-36); Heparin; BSA; PBS; Intramyocardial; Pig (miniswine); 4 weeks; Controls received mp w/ placebo; animal info (Intact, adult, male, Yorkshire, miniswine); 2ML sized pump used; tissue perfusion (myocardium).

Q0659: Y. J. Tsai, *et al.* Neuropeptide Y Modulates c-Fos Protein Expression in the Cuneate Nucleus and Contributes to Mechanical Hypersensitivity following Rat Median Nerve Injury. *Journal of Neurotrauma* 2009;26(9):1609-1621

ALZET Comments: Neuropeptide Y, neuropeptide y antagonist; CSF/CNS; Rat; 2004; 28 days; Controls received mp w/ vehicle; animal info (male, Sprague-Dawley, 180-250 g); functionality of mp verified by residual volume; peptides.

P9660: J. B. Rose, *et al.* Neuropeptide Y Fragments Derived from Neprilysin Processing Are Neuroprotective in a Transgenic Model of Alzheimer's Disease. *Journal of Neuroscience* 2009;29(4):1115-1125

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 Y5 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.

P8515: T. Ishii, *et al.* Chronic intracerebroventricular administration of anti-neuropeptide Y antibody stimulates starvation-induced feeding via compensatory responses in the hypothalamus. *Brain Research* 2007;1144(91-100)

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.

P8684: T. Fuezesi, *et al.* Contribution of noradrenergic and adrenergic cell groups of the Brainstem and agouti-related protein-synthesizing neurons of the arcuate nucleus to neuropeptide-y innervation of corticotropin-releasing hormone neurons in hypothalamic Paraventricular nucleus of the rat. *Endocrinology* 2007;148(11):5442-5450

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.



P8089: C. Gebhard, *et al.* Role of renal nerves and salt intake on erythropoietin secretion in rats following carbon monoxide exposure. *Journal of Pharmacology and Experimental Therapeutics* 2006;319(1):111-116

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.).

P7215: M. Michalkiewicz, *et al.* Central neuropeptide Y signaling ameliorates N omega-nitro-L-arginine methyl ester hypertension in the rat through a Y1 receptor mechanism. *Hypertension* 2005;45(4):780-785

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.

P6952: M. Henry, *et al.* Energy metabolic profile of mice after chronic activation of central NPY Y1, Y2, or Y5 receptors. *Obesity Research* 2005;13(1):36-47

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; cyanoacrylate adhesive (Loctite 454).

11. Peptide YY

Q6119: Y. C. Shi, *et al.* Y5 receptor signalling counteracts the anorectic effects of PYY3-36 in diet-induced obese mice. *J Neuroendocrinol* 2017;29(10):

ALZET Comments: Peptide YY (3-36); Disodium hydrogen phosphate, NaCl, Tween 80; SC; Mice; 2004; 21 days; animal info (diet-induced obese wild-type, Y5R knockout); stability verified by (Peptide YY "was stable and functional over the period of the experiment"); Obesity and diabetes;.

Q6707: N. Nishizawa, *et al.* Antiobesity Effect of a Short-Length Peptide YY Analogue after Continuous Administration in Mice. *ACS Med Chem Lett* 2017;8(6):628-631

ALZET Comments: Peptide YY, (3-36); SC; Mice; 3 days; Dose (0.3 or 1 mg/kg/day); animal info (29-week-old DIO C57BL/6J mice); peptides;.

Q6347: N. Nishizawa, *et al.* Highly potent antiobesity effect of a short-length peptide YY analog in mice. *Bioorg Med Chem* 2017;25(20):5718-5725

ALZET Comments: Peptide YY analog; DMSO; Saline; SC; Mice; 2 weeks; Dose (0.1 mg/kg/day); 10% DMSO used; animal info (34-week-old male DIO C57BL/6J mice); Therapeutic indication (obesity);.

Q4478: T. M. Kilian, *et al.* Rational Design of Dual Peptides Targeting Ghrelin and Y(2) Receptors to Regulate Food Intake and Body Weight. *JOURNAL OF MEDICINAL CHEMISTRY* 2015;58(4180-4193

ALZET Comments: Peptide 1a; peptide YY (3-36), peptide 2a, peptide 5a; SC; Mice; 14 days; Controls received mp w/ saline; animal info (female, C57BL6JRj); peptides;.



Q4504: L. S. Dalboge, *et al.* A Hamster Model of Diet-Induced Obesity for Preclinical Evaluation of Anti-Obesity, Anti-Diabetic and Lipid Modulating Agents. *PLoS One* 2015;10(U2299-U2312)

ALZET Comments: Peptide YY(3-36); neuromedin U; Saline; SC; Hamster; 2ML4; 14 days; Controls received mp w/ vehicle; animal info (male, Golden Syrian hamster, 6 weeks old); peptides; obesity;.

Q2130: A. H. Sam, *et al.* Selective Ablation of Peptide YY Cells in Adult Mice Reveals Their Role in Beta Cell Survival. *Gastroenterology* 2012;143(2):459-468

ALZET Comments: Cells, pancreatic polypeptide; peptide YY (3-36); Water, sterile; acetic acid; saline; SC; Mice; 1007D; 5 days; Controls received mp w/ vehicle; animal info (DTR-BAC); peptides; diabetes.

Q1576: S. L. Pedersen, *et al.* Peptide hormone isoforms: N-terminally branched PYY3-36 isoforms give improved lipid and fat-cell metabolism in diet-induced obese mice. *JOURNAL OF PEPTIDE SCIENCE* 2010;16(11):664-673

ALZET Comments: Peptide YY (3-36); peptide YY (3-36), isoform 2; peptide YY (3-36), isoform 3; Saline; SC; Mice; 1003D; 2002; 3 days; Controls received mp w/ vehicle; animal info (male, DIO C57BL/6J, NMRI, 8-9 wks old); incorrectly listed Model 1003 pumps used; stability verified pg 667 (2, 7, 14 days via HPLC); wound clips used.

P9847: R. Moriya, *et al.* Comparison of independent and combined chronic anti-obese effects of NPY Y2 receptor agonist, PYY(3-36), and NPY Y5 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.

P9457: S. Unniappan, *et al.* Metabolic effects of chronic obestatin infusion in rats. *Peptides* 2008;29(8):1354-1361

ALZET Comments: Obestatin; peptide YY (3-36); Saline; SC; Rat; mice; 2001D; 2ML1; 7 days; 24 hours; Controls received mp w/ vehicle; dose-response (fig. 1); peptides; animal info (male, Sprague Dawley, 200-225 g.).

P9025: S. Unniappan, *et al.* Leptin extends the anorectic effects of chronic PYY(3-36) administration in ad libitum-fed rats. *American Journal of Physiology-Regulatory Integrative and Comparative Physiology* 2008;295(1):R51-R58

ALZET Comments: Peptide YY (3-36), rat; peptide YY (3-36), human; leptin; Saline; SC; Rat; 2001D; 2ML1; 2ML2; 7 days; 24 hours; Controls received mp w/ vehicle; animal info (Fischer 344, 224 g.); 14-day pumps were removed after 7 days, and reimplanted into a new set of animals; "In the coadministration studies, a single pump was used to deliver both PYY (3-36) and leptin." pg. R53; "PYY (3-36) remained biologically active while in the pumps for at least 9 days."; peptides.

P8292: A. M. van den Hoek, *et al.* Chronic PYY₃₋₃₆ treatment promotes fat oxidation and ameliorates insulin resistance in C57BL6 mice. *AMERICAN JOURNAL OF PHYSIOLOGY-ENDOCRINOLOGY AND METABOLISM* 2007;292(1):E238-E245

ALZET Comments: Peptide YY (3-36); Saline; SC; Mice; 2001; 7 days; Controls received mp w/ vehicle; plasma levels taken; comparison of bolus injection vs. mp; animal info (C57BL/6, male, 3 months old, 35 grams); diabetes; gut hormone; peptides.

P8688: J. D. Roth, *et al.* Combination therapy with amylin and peptide YY[3-36] in obese rodents: Anorexigenic synergy and weight loss additivity. *Endocrinology* 2007;148(12):6054-6061

ALZET Comments: Amylin; peptide YY (3-36), human; DMSO; SC; Rat; mice; 2 weeks; Controls received mp w/ vehicle; functionality of mp verified by plasma levels; dose-response (fig. 2, p. 6057); peptides; animal info (rats, DIO prone; mice, DIO, C57BL/6J); 50% DMSO in water.

P8299: C. A. Cruze, *et al.* The Y₂ receptor mediates increases in collateral-dependent blood flow in a model of peripheral arterial insufficiency. *Peptides* 2007;28(2):269-280

ALZET Comments: Peptide YY, recomb. human; peptide YY (3-36), recomb. human; vascular endothelial growth factor 165; PBS; glycerol; sodium citrate; Tween 20; IA (iliac); Rat; 14 days; Controls received mp w/ vehicle; replacement therapy (femoral artery occlusion); dose-response (fig. 4); half-lif (p. 276) <30 minutes; cardiovascular; peptides; ischemia (hindlimb); animal info (male, Sprague-Dawley, 325-350 grams).