



Recent References (2015-2020) on the Administration of Peptides to the CNS Using ALZET® Osmotic Pumps

Q8578: J. E. Kim, *et al.* Epigallocatechin-3-Gallate and PEDF 335 Peptide, 67LR Activators, Attenuate Vasogenic Edema, and Astroglial Degeneration Following Status Epilepticus. *Antioxidants (Basel)* 2020;9(9):

Agents: Epigallocatechin-3-O-gallate; NU335 **Vehicle:** Not stated; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Pump:** 1003D; 1007D; **Duration:** 3 days;

ALZET Comments: Dose (50 uM Epigallocatechin-3-O-gallate; 1 uM NU335); Controls received mp w/ vehicle; animal info (Adult male Sprague-Dawley rats, 7 weeks old); Epigallocatechin-3-O-gallate; NU335 aka pigment epithelium-derived factor-derived peptide; peptides; ALZET brain infusion kit 1 used; Brain coordinates (1 mm posterior; 1.5 mm lateral; -3.5 mm depth to the bregma); neurodegenerative (Epilepsy);

Q8517: F. Gulcu Bulmus, *et al.* Kisspeptin and RF9 prevent paroxetine-induced changes in some parameters of seminal vesicle fluid in the male rats. *Andrologia* 2020;52(4):e13538

Agents: Kisspeptin; Peptide, RFamide **Vehicle:** Saline; **Route:** CSF/CNS (intracerebral); IV; **Species:** Rat; **Pump:** Not stated; **Duration:** 10 days;

ALZET Comments: Dose (1 nmol Kisspeptin and 20 nmol RF9); Controls received mp w/ vehicle; animal info (male Sprague Dawley rats (21-day-old) weighing 40 ± 2 g); RFamide Peptide aka RF9; peptides; Brain coordinates (according to the bregma, in the anterior– posterior plane: 0.90 mm; in the lateral plane: 1.4 mm; and 4 mm on the vertical plane); dependence;

Q8434: A. de Boer, *et al.* Environmental enrichment during the chronic phase after experimental stroke promotes functional recovery without synergistic effects of EphA4 targeted therapy. *Hum Mol Genet* 2020;29(4):605-617

Agents: APY-d3 **Vehicle:** CSF, Artificial; **Route:** CSF/CNS (intracerebral); IV; **Species:** Mice; **Pump:** 1002; **Duration:** 2 weeks;

ALZET Comments: Dose (5 mm); animal info (In-bred C57BL/6J male mice, 10–12 weeks of age); behavioral testing (accelerating rotarod; horizontal ladder task); APY-d3 aka peptide solution, β APYCVYR β ASWSC; peptides; ALZET brain infusion kit 3 used; Brain coordinates (0.1 mm caudal and 1.0 mm lateral of bregma); cyanoacrylate adhesive; gene therapy;

Q8260: Y. T. Liu, *et al.* Effects of porcine brain hydrolysate on impairment of cognitive learning ability in amyloid beta(1-40)-infused rats. *Anim Sci J* 2019;90(2):271-279

Agents: Amyloid B (1-40) **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Dose (10, 50, or 100 mg/kg/day); Controls received mp w/ vehicle; animal info (Male, Wistar, 8 weeks old, 200-300g); behavioral testing (Morris Water Maze Test, Spatial Memory Test, Working Memory Test); Alpha B (1-40) aka AB; peptides; ALZET brain infusion kit 3 used; Brain coordinates (relative to bregma; 0.8 mm posterior, 1.4 mm lateral); dental cement used; neurodegenerative (Alzheimer's Disease);

Q7987: S. Dyck, *et al.* LAR and PTPsigma receptors are negative regulators of oligodendrogenesis and oligodendrocyte integrity in spinal cord injury. *Glia* 2019;67(1):125-145

Agents: peptide, intracellular LAR; peptide, intracellular sigma **Vehicle:** saline, BSA buffered; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 2001D, 1003D, 2001, 2002, and 2004; **Duration:** 1, 3, 5, 7, 14, 28 days;

ALZET Comments: Dose ((ILP 10 µg/day), (ISP 10 µg/day)); 0.1% BSA in saline used; Controls received mp w/ vehicle; animal info (female, Sprague-Dawley, 250g); ILP (NH2-GRKKRRQRRCDLADNIERLKANDGLKFSQEYESI-NH2) and ISP (NH2-GRKKRRQRRCDMAEHMERLKANDSLKLSQEYESI-NH2) are peptides against LAR and PTPsigma; enzyme inhibitor (LAR and PTPsigma receptor); peptides; spinal cord injury; Therapeutic indication (inhibition of PTPsigma and LAR receptors promotes oligodendrogenesis by endogenous precursor cells, attenuates caspase 3-mediated cell death in mature oligodendrocytes, and preserves myelin);

Q7052: I. Rossetti, *et al.* Calcitonin gene-related peptide decreases IL-1beta, IL-6 as well as Ym1, Arg1, CD163 expression in a brain tissue context-dependent manner while ameliorating experimental autoimmune encephalomyelitis. *J Neuroimmunol* 2018;323(94-104

Agents: Calcitonin gene-related peptide **Vehicle:** CSF, artificial; **Route:** CSF/CNS (intrathecal); **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks;



ALZET Comments: Controls received mp w/ vehicle; animal info (7-8 week old C57BL/6 female mice); peptides;

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

Agents: PrRP palmitoylated analogs, Leptin, Amylin, Cyclic AC253, Exendin 4 **Vehicle:** Not Stated; **Route:** SC, CSF/CNS (lateral ventricle); **Species:** Mice; **Pump:** Not Stated; **Duration:** 2 months; 28 days; 5 weeks, 5 months, 16 weeks;

ALZET Comments: 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.

Q7093: K. A. Alkadhi. Delayed effects of combined stress and Abeta infusion on L-LTP of the dentate gyrus: Prevention by nicotine. *Neurosci Lett* 2018;682(10-15

Agents: Amyloid peptide, beta (1-40); Amyloid peptide, beta (1-42) **Vehicle:** Acetonitrile, Trifluoacetic acid; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Pump:** Not Stated; **Duration:** 14 days;

ALZET Comments: Dose (300 pmol peptides/day); 35% acetonitrile, 0.1% trifluoacetic acid (TFA); animal info (Adult male Wistar rats, 7 weeks old, 200-225 g); dependence;

Q6531: C. Wang, *et al.* IL-17 induced NOTCH1 activation in oligodendrocyte progenitor cells enhances proliferation and inflammatory gene expression. *Nat Commun* 2017;8(15508

Agents: Interleukin 17 receptor A **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice (knockout); **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: Controls received mp w/ decoy peptide; animal info (8-12 week old female B6.129X1-Notch1tm2Rko/GridJ, Jag1tm2Grid/J and B6.Cg-Tg BAKik/J mice); Interleukin 17 receptor A aka IL-17RA; peptides; Brain coordinates (1mm lateral, 0.3mm posterior and 2mm deep to the bregma); Therapeutic indication (multiple sclerosis);

Q5891: K. T. Santhosh, *et al.* Design and optimization of PLGA microparticles for controlled and local delivery of Neuregulin-1 in traumatic spinal cord injury. *J Control Release* 2017;261(147-162

Agents: Neuregulin-1, human recombinant **Vehicle:** CSF, artificial; BSA; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 1003D; 2001; 2002; 2004; **Duration:** 3 days, 7 days, 14 days, 28 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, 250g); Dose (500ng/day); 1% BSA used; comparison of microparticles vs mp; spinal cord injury; peptides; Dose (500ng/day); Comparison of PLGA Microparticles with ALZET pumps;

Q6067: K. Rasri-Klosen, *et al.* Differential response patterns of kisspeptin and RFamide-related peptide to photoperiod and sex steroid feedback in the Djungarian hamster (*Phodopus sungorus*). *J Neuroendocrinol* 2017;29(9):

Agents: kisspeptin-10, RFamide-related peptide **Vehicle:** CSF, artificial; **Route:** CSF/CNS (lateral ventricle); **Species:** Hamster; **Pump:** 1004; **Duration:** 4 weeks;

ALZET Comments: Dose (0.25 nmol/h); animal info (4-6 month old Djungarian hamsters); peptides;

Q6743: H. Pierce, *et al.* Cholinergic Signals from the CNS Regulate G-CSF-Mediated HSC Mobilization from Bone Marrow via a Glucocorticoid Signaling Relay. *Cell Stem Cell* 2017;20(5):648-658 e4

Agents: Pirenzepine; Scopolamine hydrobromide; Metyrapone; luteinizing hormone; ACTH **Vehicle:** PBS; **Route:** CSF/CNS (Third ventricle); **Species:** Mice (knockout); **Pump:** 1002; **Duration:** Not Stated;

ALZET Comments: Dose (0.6 mg/kg/day Pirenzepine; 1.0 mg/kg Scopolamine hydrobromide; 100mg/kg/day Metyrapone; 2.8 mg/kg/day ACTH; 16ug/day LH); Controls received mp w/ vehicle; animal info (wild-type and Chrm1-/-); luteinizing hormone aka LH and adrenocorticotrophic hormone aka ACTH; peptides; Brain coordinates (A/P -1.6 mm posterior to bregma, D/V -4.7 mm);

Q5082: K. Uekawa, *et al.* Intracerebroventricular Infusion of Angiotensin-(1-7) Ameliorates Cognitive Impairment and Memory Dysfunction in a Mouse Model of Alzheimer's Disease. *J Alzheimers Dis* 2016;53(1):127-33



Agents: Angiotensin (1-7); A-779 **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks; **ALZET Comments:** Controls received mp w/ vehicle; animal info (male, 5XFAD, 17 months old); ALZET brain infusion kit 3 used; neurodegenerative (Alzheimer's Disease); behavioral testing (Morris water maze); cardiovascular; peptides; used ALZET CSF formulation; Dose (Ang 1-7 500 ng/kg/h; A-779 5.0 ug/kg/h); Brain coordinates (relation to bregma 1.0mm lateral and 0.5 mm posterior);

Q5209: C. H. Su, *et al.* MRI/DTI of the Brain Stem Reveals Reversible and Irreversible Disruption of the Baroreflex Neural Circuits: Clinical Implications. *Theranostics* 2016;6(6):837-48

Agents: Angiotensin II **Vehicle:** Not Stated; **Route:** CSF/CNS (ventricle); **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days; **ALZET Comments:** animal info (male, C57BL6, adult); cardiovascular; peptides; bp measured using radiotelemetry (DSI); Dose (7.5 ug/hr);

Q5343: Sophie Dutheil, *et al.* BDNF Signaling Promotes Vestibular Compensation by Increasing Neurogenesis and Remodeling the Expression of Potassium-Chloride Cotransporter KCC2 and GABAA Receptor in the Vestibular Nuclei. *Journal of Neuroscience* 2016;36(23):6199-6212

Agents: Brain-derived neurotrophic factor, K252a **Vehicle:** Saline; CSF, artificial; **Route:** CSF/CNS (ventricles); **Species:** Cat; **Pump:** 2ML4; **Duration:** 30 days;

ALZET Comments: Controls received mp w/ saline; animal info (adult, male cat, 4-5 kg); dose-response (pg 6205, 6206); behavioral testing (rotating beam experimental device test); peptides;

Q4900: P. Q. H. Renjun Wang, MD; Rui Zhou, BSc; Zengxiang Dong, PhD, *et al.* Sympathoexcitation in Rats With Chronic Heart Failure Depends on Homeobox D10 and MicroRNA-7b Inhibiting GABBR1 Translation in Paraventricular Nucleus. *Circulation: Heart Failure* 2016;9(1-10)

Agents: AntagomiR-7b; RNA, small interfering GABBR1; angiotensin II **Vehicle:** Not Stated; **Route:** CSF/CNS (paraventricular nucleus); **Species:** Rat; **Pump:** 1004; 1002; **Duration:** 4 weeks; 2 weeks;

ALZET Comments: animal info (male, Wistar, 180-200g); pumps replaced after 4 weeks; bilateral cannula used; tissue perfusion (paraventricular nucleus); cardiovascular; peptides; bilateral infusion; Dose (AntagomiR-7b or Ad-siGABBR1 40 ng/h; antiotensin II 1 ng/kg/min);

Q6624: M. K. Lakshmana, *et al.* Neuroprotective Effects of Pomegranate Peel Extract after Chronic Infusion with Amyloid- β Peptide in Mice. *Plos One* 2016;11(11):e0166123

Agents: Amyloid protein, beta **Vehicle:** HEPES; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** 35 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Male C57Bl/6 mice); peptides; Brain coordinates (0.8 mm anteroposterior and 1.0 mm mediolateral to bregma and 2.0 mm dorsoventral to cranium);

Q5861: I. V. Guzhova, *et al.* HSP70-based anti-cancer immunotherapy. *Hum Vaccin Immunother* 2016;12(10):2529-2535

Agents: HSP70, human recomb. **Vehicle:** Not Stated; **Route:** CSF/CNS (intratumoral); **Species:** Rat; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: comparison of intracranial injections vs mp; cancer (Glioma); peptides; "Such injections, particularly those done using an osmotic pump, caused a significant delay in tumor growth and increase the survival of tumor-bearing animals." pg 2532; Therapeutic indication (Cancer, Glioma);

Q5341: A. Drougard, *et al.* Central chronic apelin infusion decreases energy expenditure and thermogenesis in mice. *Sci Rep* 2016;6(31849)

Agents: Apelin **Vehicle:** CSF, artificial; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Pump:** 2004; **Duration:** 2 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (C57Bl6/J mice, 13-15 week old); animal info (C57Bl6/J mice, 13-15 week old); "stability of apelin and the duration of the treatment were compatible with the stability of the molecule" (pg. 8); peptides; anesthetised mice with isoflurane; Brain coordinates – 1 mm lateral, – 0.2 mm anteroposterior from the bregma and – 1.7 mm deep; Dose (20 nM);



Q4910: R. L. T. Baojian Xue, Yang Yu, Fang Guo, Terry G. Beltz, Robert B. Felder,, *et al.* Central Renin–Angiotensin System Activation and Inflammation Induced by High-Fat Diet Sensitize Angiotensin II–Elicited Hypertension. *Hypertension* 2016;67(163-170

Agents: Pentoxifylline; irbesartan; minocycline; angiotensin II **Vehicle:** CSF, artificial; Na sodium bicarbonate; saline; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2004; 2002; 2001; **Duration:** 4 weeks; 2 weeks; 1 week;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 10-12 weeks old); cardiovascular; peptides; Dose (ICV - Pentoxifylline 10 ug/hr; irbesartan 125 ug/day; minocycline 5 ug/hr; SC AngII 120 ng/kg/min); brain coordinates;

Q4668: Y. Yu, *et al.* Activation of Central PPAR-gamma Attenuates Angiotensin II-Induced Hypertension. *HYPERTENSION* 2015;66(403-411

Agents: Angiotensin II; pioglitazone, GW9662 **Vehicle:** DMSO; CSF, artificial; **Route:** SC; CSF/CNS; **Species:** Rat; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-300g); functionality of mp verified by residual volume; 20% DMSO used; Multiple pumps per animal (2); cardiovascular; immunology; peptides; Cannula placement verified via histologic analysis of cannula track; bp measured using radiotelemetry (DSI);

Q3736: L. Trovo, *et al.* Improvement of biochemical and behavioral defects in the Niemann-Pick type A mouse by intraventricular infusion of MARCKS. *NEUROBIOLOGY OF DISEASE* 2015;73(319-326

Agents: MARCKS peptide **Vehicle:** Saline, sterile; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1004; **Duration:** Not Stated;

ALZET Comments: Control animals received mp w/ vehicle; animal info (ASMko, 4 mo old); peptides; ALZET brain infusion kit 3 used; cyanoacrylate used; behavioral testing (accelerating rotarod); MARCKS is a protein required for PI(4,5)P2 membrane clustering and hydrolysis

Q5252: N. B. Pikor, *et al.* Integration of Th17- and Lymphotoxin-Derived Signals Initiates Meningeal-Resident Stromal Cell Remodeling to Propagate Neuroinflammation. *Immunity* 2015;43(6):1160-73

Agents: Anti-interleukin 22, anti-interleukin 17, Lymphotoxin β R-Ig **Vehicle:** Immunoglobulin; **Route:** CSF/CNS (cerebroventricular); **Species:** mice; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (SJL/J mice,); animal info (SJL/J mice,); dose-response (pg 1166); peptides; Fibroblast remodeling in vivo; Dose (2 mg/ml (LTBR), 2.25 mg/ml (IL));

Q5251: A. Perianes-Cachero, *et al.* Reduction in Abeta-induced cell death in the hippocampus of 17beta-estradiol-treated female rats is associated with an increase in IGF-I signaling and somatostatinergic tone. *J Neurochem* 2015;135(6):1257-71

Agents: Amyloid protein, beta (25-35); ICI 182,780 **Vehicle:** saline; **Route:** CSF/CNS (right cerebral ventricle); **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (female Wistar rats, 8 weeks); brain infusion kit used; peptides; Amyloid beta-peptide induces cell death, learning and memory, hippocampal somatostatinergic system; Dose (300 pmol/day (A-beta), 600 fmol/day (ICI)); Brain coordinates; (-0.3 mm anteroposterior, 1.1 mm lateral)

Q4547: F. R. Nieto, *et al.* Calcitonin Gene-Related Peptide-Expressing Sensory Neurons and Spinal Microglial Reactivity Contribute to Pain States in Collagen-Induced Arthritis. *Arthritis & Rheumatology* 2015;67(1668-1677

Agents: Calcitonin gene-related peptide (8-37) **Vehicle:** Not Stated; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** 2001; **Duration:** 7 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (female, Lewis, 180-200g); behavioral testing (Von Frey filaments; Plantar test); immunology; peptides;

Q5220: C.-L. Lee, *et al.* Monascus-fermented monascin and ankaflavin improve the memory and learning ability in amyloid β -protein intracerebroventricular-infused rat via the suppression of Alzheimer's disease risk factors. *Journal of Functional Foods* 2015;18(387-399

Agents: Amyloid protein, beta (40) **Vehicle:** Acetonitrile, trifluoroacetic acid; **Route:** CSF/CNS (left ventricle); **Species:** Rat; **Pump:** 2004; **Duration:** 28 days;



ALZET Comments: Controls received mp w/ vehicle; animal info: Male Sprague Dawley (SD) rats at 6–8 weeks; functionality of mp verified by behavior tests; 35% acetonitrile, 0.1% trifluoroacetic acid; dose-response (pg 390); behavioral testing (Morris water maze; reference memory task, probe test, and working memory task); brain tissue distribution; peptides; cannula was inserted 4.0 mm into the left ventricle and attached to the skull with dental cement; Dose: 0.28 uL/h

Q5019: A. R. Ko, *et al.* Endothelin-1 induces LIMK2-mediated programmed necrotic neuronal death independent of NOS activity. *Mol Brain* 2015;8(58)

Agents: BQ788; Cav-1 peptide; Y-27632 **Vehicle:** Not Stated; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 1007D; **Duration:** 7 days; **ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague Dawley); ALZET brain infusion kit 1 used; peptides; brain coordinates;

Q5217: J. S. Kim, *et al.* Anxiogenic and Stressor Effects of the Hypothalamic Neuropeptide RFRP-3 Are Overcome by the NPFFR Antagonist GJ14. *Endocrinology* 2015;156(11):4152-62

Agents: Peptide-3, RF amide-related; GJ14 **Vehicle:** Not Stated; **Route:** CSF/CNS (left lateral ventricle); **Species:** mice; **Pump:** 1007D; **Duration:** Not Stated;

ALZET Comments: Controls received mp w/ vehicle; animal info: Female C57BL/6 mice (8 wk old); functionality of mp verified by behavior testing; behavioral testing (elevated plus maze and open field tests for 5 minutes each); peptides; RFRP-3 aka Peptide-3, RF amide-related; GJ14 is a NPFF1R antagonist with moderate antagonism at NPFF2R; G-protein coupled neuropeptide FF (NPFF) receptors belong to the RFamide receptor family and are referred to as NPFF1R (also known as GPR147) and NPFF2R (GPR74); Dose: 2 nmol/mouse/d (RFRP-3); 20 nmol/mouse/d (GJ14)

Q4970: D. H. Kim, *et al.* Peptide fragment of thymosin beta4 increases hippocampal neurogenesis and facilitates spatial memory. *Neuroscience* 2015;310(51-62)

Agents: Ac-SDKP **Vehicle:** PBS; **Route:** CSF/CNS (third ventricle); **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days; **ALZET Comments:** animal info (male, C57BL6J, 25-28g, 8 weeks old); behavioral testing (Morris water maze); tissue perfusion (third ventricle); peptides; Cannula placement verified via histologic analysis; used Plastics one cannula; brain coordinates;

Q4470: F. Jo, *et al.* Brain Endoplasmic Reticulum Stress Mechanistically Distinguishes the Saline-Intake and Hypertensive Response to Deoxycorticosterone Acetate-Salt. *HYPERTENSION* 2015;65(1341-U330)

Agents: Tauroursodeoxycholic acid; angiotensin II **Vehicle:** CSF, artificial; **Route:** CSF/CNS; SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 10 days; 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (CHOP-deficient or C57BL6J, 6 weeks old); cardiovascular; peptides; Tauroursodeoxycholic acid aka TUDCA; used Plastics One cannula;

Q5156: V. V. Giridharan, *et al.* Schisandrin B Ameliorates ICV-Infused Amyloid beta Induced Oxidative Stress and Neuronal Dysfunction through Inhibiting RAGE/NF-kappaB/MAPK and Up-Regulating HSP/Beclin Expression. *PLoS One* 2015;10(11):e0142483

Agents: Amyloid protein, beta (1-40) **Vehicle:** Acetonitrile; trifluoroacetic acid; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info: Male Sprague Dawley rats, 240–300 g; functionality of mp verified by brain removal and analysis; colorimetric sandwich ELISA kit; %35 of acetonitrile; 0.1% trifluoroacetic acid; dose-response (pg 7); neurodegenerative (memory impairment); behavioral testing (Passive avoidance task (PAT)); peptides; Dose: 300 pmol/day; Brain coordinates; relative to the bregma (A, 0.8; L, 1.4; V, 4.5) according to the atlas of Paxinos and Watson

Q5141: A. Dorr, *et al.* Intrathecal application of the antimicrobial peptide CRAMP reduced mortality and neuroinflammation in an experimental model of pneumococcal meningitis. *J Infect* 2015;71(2):188-99

Agents: Antimicrobial peptide, cathelicidin-related **Vehicle:** Saline; **Route:** CSF/CNS (right lateral ventricle); **Species:** mice; **Pump:** 1007D; **Duration:** 1 week;



ALZET Comments: Controls received mp w/ saline; animal info: male C57BL/6 mice (weight 19-23 g, aged 2-3 months); ALZET brain infusion kit 2 used; good methods (pg 189-190); brain tissue distribution of CRAMP; peptides; CRAMP aka Cathelicidin-related antimicrobial peptide; Dose: 12 ug/d

Q4403: N. N. Dewji, *et al.* Peptides of Presenilin-1 Bind the Amyloid Precursor Protein Ectodomain and Offer a Novel and Specific Therapeutic Approach to Reduce beta-Amyloid in Alzheimer's Disease. PLoS One 2015;10(U263-U284)

Agents: P4; P8 **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice (transgenic); **Pump:** 1002; **Duration:** 2 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (mThy1-hAPP Tg, 6 months old); ALZET brain infusion kit 3 used; neurodegenerative (Alzheimer's disease); brain tissue distribution; peptides;

Q4319: Y. J. Bao, *et al.* Engagement of signaling pathways of protease-activated receptor 2 and -opioid receptor in bone cancer pain and morphine tolerance. INTERNATIONAL JOURNAL OF CANCER 2015;137(1475-1483)

Agents: FSLLRY-NH2 **Vehicle:** Saline; **Route:** CSF/CNS (intrathecal); **Species:** Rat; **Pump:** Not Stated; **Duration:** 20 hours;

ALZET Comments: Controls received mp w/ vehicle; animal info (Wistar 200-250g); cancer (bone); no stress (see pg. 1476); behavioral testing (mechanical paw withdrawal, thermal hyperalgesia); peptides;