



Recent References (2015-2019) on the Intracerebroventricular Administration of Agents to Rats Using ALZET® Osmotic Pumps

- Q6949:** T. Zera, *et al.* Microglia and brain angiotensin type 1 receptors are involved in desensitising baroreflex by intracerebroventricular hypertonic saline in male Sprague-Dawley rats. *Auton Neurosci* 2019;217(49-57)
ALZET Comments: Minocycline, Losartan; Saline, iso-osmotic, Saline, hyperosmotic; CSF/CNS; Rat; 2ML2; 2 weeks; Dose (Minocycline-5 µg/h; Losartan- 12.5 µg/h); 0.9% isosmotic saline with minocycline, 5% Hyperosmotic saline with Losartan used; animal info (Normotensive adult male Sprague-Dawley rats); enzyme inhibitor (microglia); ALZET brain infusion kit 2 used; Brain coordinates (1.2mm posterior to bregma, -1.8mm laterolateral from sagittal suture, diameter 0.5 mm) bilateral cannula used; cyanoacrylate adhesive; cardiovascular;.
- Q6955:** A. Ortiz-Matamoros, *et al.* Differential Changes in the Number and Morphology of the New Neurons after Chronic Infusion of Wnt7a, Wnt5a, and Dkk-1 in the Adult Hippocampus In Vivo. *Anat Rec (Hoboken)* 2019;
ALZET Comments: Wnt7a, Wnt5a, Dkk-1; PBS; CSF/CNS; Rat; 2004; 11 days; Dose (0.25 µL/hr); animal info (Male Wistar rats; 250–300 g, 3-months-old); Wnt7a and Wnt5a are Wnt agonists, and Dkk-1 is a Wnt antagonist; Brain coordinates (AP -3.6, L -3.1, and V + 2.0.); bilateral cannula used(3.5 mm long bilateral cannula made with silicate capillaries); neurodegenerative ();.
- Q6981:** H. Chao, *et al.* Cardiolipin-dependent mitophagy guides outcome after traumatic brain injury. *J Neurosci* 2019;
ALZET Comments: RNA, small interfering (cardiolipin synthase); RNA, small interfering (Phospholipid scramblase-3); CSF/CNS; Rat; 1003D; 72 hours; Dose (30 nmol); animal info (17-day-old male Sprague-Dawley rats); Brain coordinates (-0.8 mm posterior to bregma, -1.5 mm lateral to midline, and -4.6 mm ventral to the skull surface); Traumatic brain injury;.
- Q5932:** T. Yang, *et al.* 4,4'-Diisothiocyanatostilbene-2,2'-disulfonic acid attenuates spontaneous recurrent seizures and vasogenic edema following lithium-pilocarpine induced status epilepticus. *Neurosci Lett* 2017;653(51-57)
ALZET Comments: DIDS; Saline; CSF/CNS; Rat; 1007D; 1 week; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-300g); ALZET brain infusion kit used; DIDS aka 4,4' - diisothiocyanatostilbene-2,2' -disulfonic acid; Therapeutic indication (epilepsy); Dose (0.6 ug/day);.
- Q5928:** S. Yamashita, *et al.* Oral Administration of Ethanalamine Glycerophospholipid Containing a High Level of Plasmalogen Improves Memory Impairment in Amyloid beta-Infused Rats. *Lipids* 2017;52(7):575-585
ALZET Comments: Amyloid protein, beta (1-40); Aluminum trichloride; CSF/CNS; Rat; 2002; 2 weeks; animal info (male, Wistar, 12 weeks old); neurodegenerative (Alzheimers); behavioral testing (radial maze-learning ability); "Instead of Aβ1–42 that is easy to aggregate in osmotic pump and line to cerebral ventricle, Aβ1–40 and AICl3 were used and enabled to aggregate in cerebral ventricle." pg 3;.
- Q5900:** T. Tsuji, *et al.* Vasopressin casts light on the suprachiasmatic nucleus. *J Physiol* 2017;595(11):3497-3514
ALZET Comments: Antagonist, vasopressin V1A receptor; CSF, artificial; CSF/CNS; Rat; 2001; 3 days; Controls received mp w/ vehicle; animal info (Sprague Dawley, 250-350g); ALZET brain infusion kit 2 used;Dose (416 ng/hr);.
- Q5692:** H. Z. Toklu, *et al.* Intracerebroventricular tempol administration in older rats reduces oxidative stress in the hypothalamus but does not change STAT3 signalling or SIRT1/AMPK pathway. *Appl Physiol Nutr Metab* 2017;42(1):59-67
ALZET Comments: Tempol; CSF, artificial; CSF/CNS; Rat; 3 weeks; Controls received mp w/ vehicle; animal info (male, Fischer 344 x Brown Norway, 3 months or 23 months old); functionality of mp verified by ; Vehicle pumps replaced after one week; Dose (300 ug/h);.
- Q5691:** K. W. Tian, *et al.* Role of C16, angiopoietin-1 and regeneration gene protein 2 in attenuating inflammation in an experimental rat model of autoimmune encephalomyelitis. *J Anat* 2017;230(1):30-46
ALZET Comments: Reg-2; Saline; PBS; CSF/CNS; Rat; 2002; 14 days; Controls received mp w/ vehicle; animal info (male, Lewis, adult, 250-300g); ALZET brain infusion kit used; post op. care (rats placed in temperature and humidity controlled



chambers overnight for recovery; Penicillin IM 2500IU); immunology; immunology; Pumps primed overnight in room temperature saline;

Q5892: J. Tang, *et al.* A selective CB2R agonist (JWH133) restores neuronal circuit after Germinal Matrix Hemorrhage in the preterm via CX3CR1(+) microglia. *Neuropharmacology* 2017;119(157-169

ALZET Comments: shRNA, NM_133534.1; antibody, CX3CR1; NaCl; CSF/CNS; Rat; 1003D; 3 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, P7); ALZET brain infusion kit 3 used; ALZET brain infusion kit 3 used; Brain coordinates;

Q6498: T. Y. Tai, *et al.* Antiepileptic action of c-Jun N-terminal kinase (JNK) inhibition in an animal model of temporal lobe epilepsy. *Neuroscience* 2017;349(35-47

ALZET Comments: SB203580; SP600125; Lamotrigine isethionate; Saline; DMSO; CSF/CNS; Rat; 2ML2; 2ML4; Lamotrigine isethionate Dose (20 mg/kg/d); 1% DMSO used; animal info (6 week-old male Sprague Dawley); "Also, i.c.v. delivery of drugs via osmotic pump achieves steady-state drug levels without diurnal variation; avoids issues with drug blood-brain barrier permeability; avoids the animal stress that would occur with repeated drug injection or gavage; and minimizes drug amounts used." pg. 4.

Q6340: M. Piazza, *et al.* Simulating vasogenic brain edema using chronic VEGF infusion. *J Neurosurg* 2017;127(4):905-916

ALZET Comments: Vascular endothelial growth factor; PBS; Rat serum albumin; CSF/CNS; Rat; 2001; 1007D; Dose (2, 10, and 20 ng/hr); 0.1% rat serum albumin used; Controls received mp w/ vehicle; animal info (275-350g Male Fischer-344 rats); Brain coordinates (2.5 mm to the right of and 1 mm anterior to bregma); cyanoacrylate adhesive;

Q5877: D. E. Peragine, *et al.* RFamide-related peptide-3 (RFRP-3) suppresses sexual maturation in a eusocial mammal. *Proc Natl Acad Sci U S A* 2017;114(5):1207-1212

ALZET Comments: RFamide-related peptide-3; saline; CSF/CNS; Rat (naked mole); 2004; 4 weeks; Controls received mp w/ vehicle; animal info (13–65 mo of age; 34–58 g); ALZET brain infusion kit 3 used;

Q6712: B. M. Park, *et al.* Fermented garlic extract ameliorates monocrotaline-induced pulmonary hypertension in rats. *Journal of Functional Foods* 2017;30(247-253

ALZET Comments: Oxadiazolo quinoxalin-1-one, 1H-[1,2,4], [4,3-a]; Saline; CSF/CNS; Rat; 2002; 21 days; Dose (2 mg/kg/day); animal info (Eight-week-old male Sprague-Dawley); 1H-[1,2,4] oxadiazolo [4,3,- a] quinoxalin-1-one aka ODO; Brain coordinates (lateral, -3.3 mm from the bregma; posterior, 2.0 mm from the midline; ventral, -2.5 mm from dura); bilateral cannula used; cardiovascular;

Q6033: R. L. O'Hare Doig, *et al.* Specific ion channels contribute to key elements of pathology during secondary degeneration following neurotrauma. *BMC Neurosci* 2017;18(1):62

ALZET Comments: Oxidized ATP; PBS; CSF/CNS; Rat; 2002; 4 weeks; Controls received mp w/ vehicle; animal info (160-200g); oxATP is a P2X7 receptor inhibitor. Therapeutic indication (Neurotrauma); Dose (1 mM);

Q6477: Y. F. Liang, *et al.* Hydrogen sulfide in paraventricular nucleus attenuates blood pressure by regulating oxidative stress and inflammatory cytokines in high salt-induced hypertension. *Toxicol Lett* 2017;270(62-71

ALZET Comments: GYY4137, hydroxylamine hydrochloride; CSF, artificial; CSF/CNS; Rat; 2006; 6 weeks; Controls received mp w/ vehicle; animal info (male Dahl rats,); post op. care (buprenorphine); hydroxylamine hydrochloride aka HA; Brain coordinates (1.8 mm posterior to the bregma, 0.4 mm lateral to the central line, and 7.9 mm ventral to the zero level); bilateral cannula used; Cannula placement verified via histological confirmation;

Q6438: A. H. Leko, *et al.* Insulin-like growth factor I and its binding protein-3 are regulators of lactation and maternal responsiveness. *Sci Rep* 2017;7(1):3396

ALZET Comments: NBI-31772; Insulin-like growth factor I; CSF, artificial; DMSO; CSF/CNS; Rat; 2002; 14 days; Dose (48 µg IGF-I/day; 19,92 µg NBI-31772/day); 1% DMSO used; Controls received mp w/ vehicle; animal info (85 female Wistar rats weighing 250–300 g); post op. care (Tardomyocel® comp. III antibiotics (0.1 ml/kg body weight) was given s.c. to the animals



for 5 days); enzyme inhibitor (brain IGFBP-3); ALZET brain infusion kit 2 used; Brain coordinates (antero-posterior, -0.5; lateral, 1.4; ventral, 3.6 mm);.

Q6082: N. Kourdougli, *et al.* Depolarizing gamma-aminobutyric acid contributes to glutamatergic network rewiring in epilepsy. *Ann Neurol* 2017;81(2):251-265

ALZET Comments: Bumetanide; Antibody, anti-pan-neurotrophin receptor p75; Ethanol; PBS; CSF/CNS; Rat; 2002; 3 days; Dose (bumetanide: 86ng/24 hours, p75NTR antibody: 6.67 ug/mL); 0.3% of ethanol in 1M PBS; Controls received mp w/ vehicle or rabbit IgG; animal info (adult male Wistar rats); post op. care (0.03 mg/kg buprenorphine administered SC); ALZET brain infusion kit used; Brain coordinates (anterior/posterior, -3.8; lateral/medial, +2.5; dorsal/ventral,+3.0);.

Q5674: J. Y. Kim, *et al.* PDI regulates seizure activity via NMDA receptor redox in rats. *Sci Rep* 2017;7(42491

ALZET Comments: RNA, small interfering (PDI; DTNB); bacracin; Immunoglobulin, anti-PDI; tunicamycin ;; CSF/CNS; Rat; 1007D; 7 days, 14 days; Controls received mp w/ vehicle or control siRNA or control IgG; animal info (male, Sprague Dawley, 7 weeks old); pumps replaced every week; ALZET brain infusion kit 1 used; behavioral testing (behavioral seizure severity); Brain coordinates;

Q5854: H. L. Gao, *et al.* PVN Blockade of p44/42 MAPK Pathway Attenuates Salt-induced Hypertension through Modulating Neurotransmitters and Attenuating Oxidative Stress. *Sci Rep* 2017;7(43038

ALZET Comments: PD-98059; CSF, artificial; CSF/CNS; Rat; 2006; 6 weeks; Controls received mp w/ vehicle; animal info (8 weeks old) ; Controls received mp w/ vehicle; animal info (8 weeks old) ; Therapeutic indication (Oral drug delivery, Pharmacokinetics); Dose (.025 ug/hr);.

Q5327: G. Futamura, *et al.* Evaluation of a novel sodium borocaptate-containing unnatural amino acid as a boron delivery agent for neutron capture therapy of the F98 rat glioma. *Radiat Oncol* 2017;12(1):26

ALZET Comments: Boron-10 containing sodium borocaptate, ACBC-BSH (Boron-10 derivative); CSF/CNS; Rat; 2001D; 24 hours; ALZET brain infusion kit used; comparison of IV injections vs mp; cancer (F98 glioma); brain tissue distribution; “we succeeded in achieving a high accumulation of boron in the tumors of rats in which ACBC-BSH was administered by CED, compared with ACBC-BSH administered intravenously” pg. 9 ; ACBC-BSH is a boron-10 containing sodium borocaptate derivative, 1-amino-3-fluorocyclobutane-1-carboxylic acid; Dose (1.2 mg/kg);.

Q6385: X. Du, *et al.* Local GABAergic signaling within sensory ganglia controls peripheral nociceptive transmission. *J Clin Invest* 2017;127(5):1741-1756

ALZET Comments: GABA; muscimol; NO711; Saline; CSF/CNS; Rat; 2002; 14 days; Controls received mp w/ vehicle; animal info (adult male Sprague-Dawley rats weighing 180–200 g); NO711 is a GAT1 inhibitor; ALZET brain infusion kit 2 used;

Q6386: Dorfman MD, *et al.* Deletion of Protein Kinase C I 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;

Q6321: S. C. Chen, *et al.* Administration of sonic hedgehog protein induces angiogenesis and has therapeutic effects after stroke in rats. *Neuroscience* 2017;352(285-295

ALZET Comments: Sonic hedgehog protein, Cyclopamine, antibody, anti-VEGF; PBS; CSF/CNS; Rat; 1007D; 7 days; Dose (1 mg/mL Shh, 20 µM Shh plus Cyc, 25 µg/ml Shh plus VEGF antibody); animal info (Male Sprague–Dawley rats); Cyclopamine is a sonic hedgehog protein inhibitor; Brain coordinates (bregma -0.8 mm anteroposterior, ±1.5 mm mediolateral, and -4.5 mm dorsoventral);.

Q6402: K. Chen, *et al.* Sequential therapy of anti-Nogo-A antibody treatment and treadmill training leads to cumulative improvements after spinal cord injury in rats. *Exp Neurol* 2017;292(135-144

ALZET Comments: Immunoglobulin G1, anti-Nogo-A antibody 11C7; Immunoglobulin G1, anti-cyclosporin A; CSF/CNS; Rat; 2ML2; 2 weeks; animal info (female Sprague–Dawley rats weighing 200-250 g); Therapeutic indication (spinal cord injury);.



Q6009: B. Changyaleket, *et al.* Heparanase promotes neuroinflammatory response during subarachnoid hemorrhage in rats. *J Neuroinflammation* 2017;14(1):137

ALZET Comments: OGT2115; CSF, artificial; CSF/CNS; Rat; 1003D; 48 hours; Controls received mp w/ vehicle; animal info (250–300g); enzyme inhibitor (heparanase inhibitor); Dose (0.4 μ M);.

Q5968: B. K. Becker, *et al.* Central TrkB blockade attenuates ICV angiotensin II-hypertension and sympathetic nerve activity in male Sprague-Dawley rats. *Auton Neurosci* 2017;205(77-86)

ALZET Comments: Angiotensin II; CSF, artificial; DMSO; CSF/CNS; Rat; 2002; 11 days; Controls received mp w/ vehicle; animal info (350-400g); 50% DMSO, 50% aCSF used Therapeutic indication (Hypertension);.

Q5730: B. Albright, *et al.* Progressive neuronal activation accompanies epileptogenesis caused by hippocampal glutamine synthetase inhibition. *Exp Neurol* 2017;288(122-133)

ALZET Comments: Methionine sulfoximine; PBS; CSF/CNS; Rat; 2004; 28 days; Controls received mp w/ vehicle; animal info (200-250 g) ; MSO: methionine sulfoximine ; enzyme inhibitor (methionine sulfoximine); Therapeutic indication (Temporal lobe epilepsy); Dose (2.5 mg/mL);.

Q5869: D. A. Adekunbi, *et al.* Role of amygdala kisspeptin in pubertal timing in female rats. *PLoS One* 2017;12(8):e0183596

ALZET Comments: Peptide 234; CSF, artificial; CSF/CNS; Rat; 2002; 14 days, 2 weeks; animal info (21 and 100 day old rats); Peptide 234 is a kisspeptin receptor antagonist ; Bilateral cannulae used; Correct cannula placement in the MePD was confirmed by microscopic inspection of 30 μ m brain sections; Therapeutic indication (Obesity); Dose (2 nmol in 6 μ l/d); Brain coordinates; 2.5 mm posterior to bregma (AP), 3.2 mm lateral (ML), and 7.8 mm below the surface of the dura (DV).

Q5502: T. Yayeh, *et al.* Morphine dependence is attenuated by red ginseng extract and ginsenosides Rh2, Rg3, and compound K. *J Ginseng Res* 2016;40(4):445-452

ALZET Comments: Ginsenoside, Rg3; ginsenoside, Rh; compound K; morphine; Saline; CSF/CNS; Rat; 2ML1; 7 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 220-240g); behavioral testing (conditioned place preference; escaping behavior); dependence; cyanoacrylate wound closure; Dose (morphine 26nmol/10ul/hr, ginsenoside 10 ug/ul/h); Brain coordinates (L: 1.3 mm; AeP: e0.5 mm; and DeV: e4.3 mm);.

Q4911: J. Yang, *et al.* Inhibiting HIF-1 α Decreases Expression of TNF- α and Caspase-3 in Specific Brain Regions Exposed Kainic Acid-Induced Status Epilepticus. *Cell Physiol Biochem* 2016;38(1):75-82

ALZET Comments: Estradiol, 2-methoxy; entanercept; CSF, artificial; CSF/CNS; Rat; 1003D; 3 days; Controls received mp w/ vehicle; animal info (male, Wistar, 200-250g); ALZET brain infusion kit used; Cannula placement verified via histologic analysis;.

Q4913: Y. Yamaguchi, *et al.* Real-Time Recording of Circadian Per1 and Per2 Expression in the Suprachiasmatic Nucleus of Freely Moving Rats. *J Biol Rhythms* 2016;31(1):108-11

ALZET Comments: Luciferin, D-; CSF, artificial; CSF/CNS; Rat; 2ML4; animal info (Per1-luc or Per2-luc); cyanoacrylate adhesive; Dose (measurement of real-time gene activity);.

Q5102: W. S. Xu, *et al.* Bumetanide promotes neural precursor cell regeneration and dendritic development in the hippocampal dentate gyrus in the chronic stage of cerebral ischemia. *Neural Regen Res* 2016;11(5):745-51

ALZET Comments: Bumetanide; Water, sterile; CSF/CNS; Rat; 2004; 21 days; animal info (male, Wistar, 200-250g); ischemia (cerebral); behavioral testing (Morris water maze); pumps primed overnight in 37C saline; used dental cement; Dose (200 ug/kg/day); Brain coordinates (anteroposterior -0.9, mediolateral +1.5);.

Q5713: H. Xu, *et al.* The Role of HMGB1 in Pial Arteriole Dilating Reactivity following Subarachnoid Hemorrhage in Rats. *J Vasc Res* 2016;53(5-6):349-357



ALZET Comments: HMGB1; Box A; OxPAPC; CSF, artificial; CSF/CNS; Rat; 1003D; 2 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 250-300g); Multiple pumps per animal (2); Bilateral infusion; Dose (HMGB1 120 ng/h; Box A 12-120 ng/hr; OxPAPC 20 ug/h);.

Q5099: J. Xing, *et al.* HIF-1alpha Activation Attenuates IL-6 and TNF-alpha Pathways in Hippocampus of Rats Following Transient Global Ischemia. *Cell Physiol Biochem* 2016;39(2):511-20

ALZET Comments: SC144; etanercept; CSF, artificial; CSF/CNS; Rat; 24 hours; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 200-300g); ALZET brain infusion kit used; ischemia (cerebral); used polycarbonate tubing; SC144 is a gp130 inhibitor; Brain coordinates (3.7 mm posterior to the bregma, 4.1 mm lateral to the midline, and 3.5 mm under the dura);.

Q5711: H. Xiao, *et al.* Effect of ephrin-B2 on the expressions of angiopoietin-1 and -2 after focal cerebral ischemia/reperfusion. *Neural Regen Res* 2016;11(11):1784-1789

ALZET Comments: Ephrin-B2-Fc, recombinant murine chimera; Saline; CSF/CNS; Rat; 1003D; 3 days; animal info (male, Sprague Dawley, 8-10 weeks old, ~280g); ischemia (cerebral); Brain coordinates;.

Q4857: M. Wen-Chung Liu, *et al.* Hyperbaric Oxygen Therapy Alleviates Carbon Monoxide Poisoning–Induced Delayed Memory Impairment by Preserving Brain-Derived Neurotrophic Factor–Dependent Hippocampal Neurogenesis. *Crit. Care Med* 2016;44(1):

ALZET Comments: TrkB-Fc, recombinant human; brain-derived neurotrophic factor; CSF, artificial; CSF/CNS; Rat; 1007D; 7 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, adult); animal info (male, Sprague Dawley, adult); behavioral testing (radial arm maze, memory talk); used dental cement; pumps primed in 37C saline prior to implantation; Dose (); brain coordinates;.

Q5707: S. G. Wei, *et al.* Endoplasmic reticulum stress increases brain MAPK signaling, inflammation and renin-angiotensin system activity and sympathetic nerve activity in heart failure. *Am J Physiol Heart Circ Physiol* 2016;311(4):H871-H880

ALZET Comments: Tauroursodeoxycholic acid; CSF, artificial; CSF/CNS; Rat; 2004; 4 weeks, 28 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, adult, 275-325g); cardiovascular; Used screws and dental orthodontic resin; Dose (10 ug/day); Brain coordinates;.

Q5705: X. Wang, *et al.* Cerebral mTOR signal and pro-inflammatory cytokines in Alzheimer's disease rats. *Transl Neurosci* 2016;7(1):151-157

ALZET Comments: Rapamycin; amyloid protein, beta (1-42); CSF, artificial; CSF/CNS; Rat; 1002; 14 days; animal info (male, Sprague Dawley, 3-4 months old, 300-350g); Multiple pumps per animal (2); neurodegenerative (Alzheimer's); behavioral testing (Y-maze); immunology; Bilateral infusion; used jewelers' screw and dental zinc cement; Dose (10 mg/kg amyloid beta, rapamycin 500 ug/2 weeks); Brain coordinates;.

Q5075: Q. Tong, *et al.* PPARbeta/delta Agonist Provides Neuroprotection by Suppression of IRE1alpha-Caspase-12-Mediated Endoplasmic Reticulum Stress Pathway in the Rotenone Rat Model of Parkinson's Disease. *Mol Neurobiol* 2016;53(6):3822-31

ALZET Comments: GW501516; DMSO; saline; CSF/CNS; Rat; 2006; 6 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 200-220g); animal info (male, Sprague Dawley, 200-220g); 30% DMSO used; neurodegenerative (Parkinson's); behavioral testing (open field test; catalepsy test); "GW501516 does not readily cross the blood–brain barrier, so GW501516 or vehicle was administrated intracerebroventricularly." pg 3823; pumps primed in 37C saline overnight; Brain coordinates (0.8 mm posterior to the bregma, 1.5 mm lateral to the midsagittal suture, and 4.0 mm ventral to the skull);.

Q4816: Shu-Yan Dai, *et al.* Central Infusion of Angiotensin II Type 2 Receptor Agonist Compound 21 Attenuates DOCA/NaCl-Induced Hypertension in Female Rats. *Oxidative Medicine and Cellular Longevity* 2016;2016(**ALZET Comments:** Compound 21; CSF/CNS; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (female, Wistar, 10-12 weeks, OVX); ALZET brain infusion kit used; cardiovascular; bp measured using radiotelemetry;.



Q4903: Y. Y. Shun-Guang Wei, Robert M. Weiss, Robert B. Felder. Inhibition of Brain Mitogen-Activated Protein Kinase Signaling Reduces Central Endoplasmic Reticulum Stress and Inflammation and Sympathetic Nerve Activity in Heart Failure Rats. *Hypertension* 2016;67(229-236)

ALZET Comments: PD98059; SB203580; SP600125; CSF, artificial; DMSO; CSF/CNS; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, adult, 275-325g); 5% DMSO used; cardiovascular;

Q5195: P. J. Scarpace, *et al.* Rapamycin Normalizes Serum Leptin by Alleviating Obesity and Reducing Leptin Synthesis in Aged Rats. *J Gerontol A Biol Sci Med Sci* 2016;71(7):891-9

ALZET Comments: Rapamycin; DMSO; PEG 400; CSF/CNS; Rat; 28 days; Controls received mp w/ vehicle; animal info (male, F344 x Brown Norway, 24 months old); pumps replaced after 14 days; ALZET brain infusion kit used; 10% DMSO used; 90% PEG 400 used; post op. care (rats kept warm until recovered); used aCSF filled pump for 14 days, then replaced with rapamycin or vehicle for 28 day infusion; obesity; Dose (30 ug/day); Brain coordinates (1.3 mm posterior to bregma, 1.9 mm lateral to the midsagittal suture and to a depth of 3.5mm);

Q5179: N. Petitdant, *et al.* Cerebral radiofrequency exposures during adolescence: Impact on astrocytes and brain functions in healthy and pathologic rat models. *Bioelectromagnetics* 2016;37(5):338-50

ALZET Comments: Endotoxin, LPS; CSF, artificial; CSF/CNS; Rat; 2004; 28 days; Controls received mp w/ vehicle; animal info (male, Sprague Dalwey, P32); behavioral testing (Open Field test; elevated plus maze; fear conditioning); Cannula placement verified via methylene blue dye; used Plastics One cannula; used PEEK cannula; rats exposed to radio frequency electromagnetic fields while pump implanted; Dose (1.25 ug/h); Brain coordinates;

Q5177: P. A. Pereira, *et al.* Effects of chronic alcohol consumption, withdrawal and nerve growth factor on neuropeptide Y expression and cholinergic innervation of the rat dentate hilus. *Neurotoxicology* 2016;54(153-60)

ALZET Comments: Nerve growth factor; Methylene blue; BSA; CSF, artificial; CSF/CNS; Rat; 2002; 12 days; animal info (male, Wistar); functionality of mp verified by residual volume; ALZET brain infusion kit used; post op. care (SC injections of 0.9% saline (2ml)); pulsed delivery; used PE-60 tubing; used lynch coil;

Q6620: S. J. Min, *et al.* Positive feedback role of TRPC3 in TNF-alpha-mediated vasogenic edema formation induced by status epilepticus independent of ETB receptor activation. *Neuroscience* 2016;337(37-47)

ALZET Comments: TNFp55 receptor, soluble; SN50; CSF/CNS; Rat; 1007D; Controls received mp w/ vehicle; enzyme inhibitor (NFKB); ALZET brain infusion kit 1 used; Brain coordinates (1 mm posterior; 1.5 mm lateral; 3.5 mm depth to the bregma);

Q4899: y. B. S. H. H.-W. WANG, y A. CHEN, M. AHMAD,, *et al.* ROLE OF BRAIN ALDOSTERONE AND MINERALOCORTICOID RECEPTORS IN ALDOSTERONE-SALT HYPERTENSION IN RATS. *Neuroscience* 2016;314(90-105)

ALZET Comments: Aldosterone; eplerenone; FAD286; CSF, artificial; acetonitrile; SC; CSF/CNS; Rat; 2004; 2 weeks, 3 weeks; Controls received mp w/ vehicle; animal info (male, Wistar, 200-250g); 4% acetonitrile used; Multiple pumps per animal; cardiovascular; bp measured using radiotelemetry; bp measured using radiotelemetry; dose (1.5 and 7.5 ug/kg/hr Aldosterone, 5ug/day Eplerenone, 25 ug/day FAD286).

Q4894: J. P. V. a. R. A. Gonzales. Chronic Intracerebroventricular Infusion of Monocyte Chemoattractant Protein-1 Leads to a Persistent Increase in Sweetened Ethanol Consumption During Operant Self-Administration But Does Not Influence Sucrose Consumption in Long-Evans Rats. *ALCOHOLISM-CLINICAL AND EXPERIMENTAL RESEARCH* 2016;40(1):

ALZET Comments: Monocyte chemoattractant protein-1, recombinant rat; CSF, artificial; water, distilled; albumin, rat serum; CSF/CNS; Rat; 1004; 5 weeks; Controls received mp w/ vehicle; animal info (male, Long Evans, 350g); functionality of mp verified by ELISA and manufacturers instructions see pg189; ALZET brain infusion kit 2 used; dose-response (pg.190); post op. care (bupivacane intradermally; bupivacaine and gentamicin dripped into wound); behavioral testing (alcohol self administration); stability verified by (ELISA pg 192); cyanoacrylate adhesive; "We chose the ICV method to simulate the presence of brain-induced MCP-1 and the method's ability to target the whole brain with molecules that do not readily cross the BBB" pg 188-189; pumps primed at 37C sterile saline; Dose (0.2, 20, 2000 ng/day);



Q6041: L. German-Castelan, *et al.* Intracellular Progesterone Receptor Mediates the Increase in Glioblastoma Growth Induced by Progesterone in the Rat Brain. *Arch Med Res* 2016;47(6):419-426

ALZET Comments: Oligodeoxynucleotide, antisense; Propylene glycol; CSF/CNS; Rat; 15 days; animal info (250-300g) ; tissue perfusion (brain tissue); Guide cannula used; Therapeutic indication (Astrocytomas, CNS tumor); Dose (0.5 ug/day);.

Q5757: A. Cabrera-Pastor, *et al.* In vivo administration of extracellular cGMP normalizes TNF-alpha and membrane expression of AMPA receptors in hippocampus and spatial reference memory but not IL-1beta, NMDA receptors in membrane and working memory in hyperammonemic rats. *Brain Behav Immun* 2016;57(360-370

ALZET Comments: cGMP; Saline; CSF/CNS; Rat; 2004; 28 days, 4 weeks; Controls received mp w/ vehicle; animal info (weight: 120-140g); ALZET brain infusion kit 2 used; behavioral testing (8 arm radial maze); Therapeutic indication (Neuroinflammation, learning and memory); Dose (240 uM);.

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

ALZET Comments: Pentoxifylline; irbesartan; minocycline; angiotensin II; CSF, artificial; Na sodium bicarbonate; saline; CSF/CNS; Rat; 2004; 2002; 2001; 4 weeks; 2 weeks; 1 week; 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;.

Q4223: X. Zhang, *et al.* Prosurvival NMDA 2A Receptor Signaling Mediates Postconditioning Neuroprotection in the Hippocampus. *Hippocampus* 2015;25(286-296

ALZET Comments: Oligonucleotide, antisense NR2A; Saline; CSF/CNS; Rat; 1007D; Controls received mp w/ scrambled oligonucleotide; animal info (male, Sprague Dawley, adult, 250-300g); antisense (oligonucleotide NR2A);.

Q4221: T. Zera, *et al.* TNF and angiotensin type 1 receptors interact in the brain control of blood pressure in heart failure. *Cytokine* 2015;71(272-277

ALZET Comments: Etanercept; Saline; CSF/CNS; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 14 weeks old); functionality of mp verified by residual volume; ALZET brain infusion kit 2 used; cardiovascular; cyanoacrylate adhesive; Cannula placement verified via evan's blue dye; pumps primed in 37C sterile saline for 48 hours;.

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

ALZET Comments: Angiotensin II; pioglitazone, GW9662; DMSO; CSF, artificial; SC; CSF/CNS; Rat; 2002; 2 weeks; 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);.

Q4186: Y. D. Xi, *et al.* The Effect of Soybean Isoflavone on the Dysregulation of NMDA Receptor Signaling Pathway Induced by beta-Amyloid Peptides 1-42 in Rats. *Cellular and Molecular Neurobiology* 2015;35(555-562

ALZET Comments: Amyloid protein, beta (1-42); CSF/CNS; Rat; 2002; 28 days; Controls received mp w/ saline; animal info (male, Wister, 250-300g); neurodegenerative (Alzheimer's disease);.

Q4640: M. Wellman, *et al.* Knockdown of central ghrelin O-acyltransferase by vivo-morpholino reduces body mass of rats fed a high-fat diet. *PEPTIDES* 2015;70(17-22

ALZET Comments: Oligonucleotide, antisense vivo-morpholino; PBS; CSF/CNS; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (male, Long Evans, 276-300g); Cannula placement verified via injection of dye;.

Q4606: G. B. Tang, *et al.* Intracerebroventricular administration of leptin increase physical activity but has no effect on thermogenesis in cold-acclimated rats. *SCIENTIFIC REPORTS* 2015;5(U1-U7



ALZET Comments: Angiotensin II; CSF, artificial; CSF/CNS; Rat; 2001; 6 days; Controls received mp w/ vehicle; animal info (male, Wistar, adult); behavioral testing (physical activity); Cannula placement verified via drinking response;.

Q3789: D. Sun, *et al.* Inhibition of Injury-Induced Cell Proliferation in the Dentate Gyrus of the Hippocampus Impairs Spontaneous Cognitive Recovery after Traumatic Brain Injury. *Journal of Neurotrauma* 2015;32(495-505

ALZET Comments: Ara-C; CSF, artificial; CSF/CNS; Rat; 1007D; 7 days; Control animals received mp w/ vehicle; ALZET Brain infusion kit 2 used; animal info (male, 3-4 mo old, Sprague Dawley).

Q4584: V. V. Sherstnev, *et al.* Long-lived newly formed neurons in the mature brain are involved in the support of learning and memory processes. *Neurochemical Journal* 2015;9(13-19

ALZET Comments: Uridine, 5-bromo-2-deoxy-; Saline, sterile; CSF/CNS; Rat; 2002; 14 days; Animal info (male, Wistar, 12 weeks old, 220-250g); behavioral testing (morris water maze); pumps removed after 14 days;.

Q4757: E. L. Schaeffer, *et al.* Chronic inhibition of brain phospholipase A(2) in adult rats impairs the survival of newborn mature neurons in the hippocampus. *JOURNAL OF NEURAL TRANSMISSION* 2015;122(619-628

ALZET Comments: MAFP; DMSO; NaCl; CSF/CNS; Rat; 2002; 14 days; Controls received mp w/ vehicle; animal info (male, Wistar, 350-400g, adult); ALZET brain infusion kit 2 used; 3% DMSO used; MAFP aka methyl arachidonyl fluorophosphonate; enzyme inhibitor (Phospholipase A2);.

Q4934: S. Sandal, *et al.* The effects of intracerebroventricular infusion of apelin-13 on reproductive function in male rats. *Neurosci Lett* 2015;602(133-8

ALZET Comments: Apelin-13; CSF, artificial; CSF/CNS; Rat; 2ML1; 7 days; Controls received mp w/ vehicle; animal info (male, Wistar-Albino, adult, 300-350g); Dose (1 nmol or 10 nmol); Brain coordinates;.

Q4074: I. Rostas, *et al.* Age-related alterations in the central thermoregulatory responsiveness to alpha-MSH. *JOURNAL OF THERMAL BIOLOGY* 2015;49-5(9-15

ALZET Comments: Melanocyte-stimulating hormone, alpha; CSF/CNS; Rat; ALZET brain infusion kit used; pumps mentioned in introduction and discussion;.

Q3787: T. Noshita, *et al.* Effect of nicotine on neuronal dysfunction induced by intracerebroventricular infusion of amyloid-beta peptide in rats. *European Review for Medical and Pharmacological Sciences* 2015;19(334-343

ALZET Comments: Amyloid protein, beta (1-42); Water, sterile bidistilled; CSF/CNS; Rat; 1003D; 3 days; Animal info (male, F344/DuCrj, 18 wks old, 320-360 g); neurodegenerative (Alzheimer's disease).

Q4541: J. Mysoet, *et al.* role of IGF-1 in cortical plasticity and functional deficit induced by sensorimotor restriction. *BEHAVIOURAL BRAIN RESEARCH* 2015;290(117-123

ALZET Comments: Insulin-like growth factor-1; CSF, artificial; CSF/CNS; Rat; 2002; 14 days; Controls received mp w/ vehicle; animal info (male, Wistar, 280-320g); behavioral testing (mechanical withdrawal); pumps primed overnight;.

Q4523: R. Maranon, *et al.* Roles for the sympathetic nervous system, renal nerves, and CNS melanocortin-4 receptor in the elevated blood pressure in hyperandrogenemic female rats. *AMERICAN JOURNAL OF PHYSIOLOGY-REGULATORY INTEGRATIVE AND COMPARATIVE PHYSIOLOGY* 2015;308(R708-R713

ALZET Comments: SHU-9119; Saline; CSF/CNS; Rat; 5 days; Animal info (female, Sprague Dawley, 3 weeks old); cardiovascular;.

Q4559: W. Lv, *et al.* Bone marrow mesenchymal stem cells transplantation promotes the release of endogenous erythropoietin after ischemic stroke. *Neural Regen Res* 2015;10(8):1265-70

ALZET Comments: sEPOR; PBS; BSA; CSF/CNS; Rat; 1007D; 13 days; animal info (male, Sprague Dawley, 2 months old, 250-300g); 0.1% BSA used; ischemia (cerebral); behavioral testing (somatosensory test; balance, motor testing); pumps primed in 37C sterile saline overnight; Dose (3 ug/day);.



Q4499: R. H. Lin, *et al.* Neurogenesis is enhanced by stroke in multiple new stem cell niches along the ventricular system at sites of high BBB permeability. *NEUROBIOLOGY OF DISEASE* 2015;74(229-239

ALZET Comments: Basic fibroblast growth factor, recominant human; CSF, artificial; CSF/CNS; Rat; 14 days; Animal info (male, Sprague Dawley, adult, 275-300g, MCAO); ischemia (cerebral); cardiovascular;

Q5007: C. Lahmann, *et al.* Systemic Administration of Glibenclamide Fails to Achieve Therapeutic Levels in the Brain and Cerebrospinal Fluid of Rodents. *PLoS One* 2015;10(7):e0134476

ALZET Comments: Glibenclamide; CSF, artificial; DMSO; BSA; CSF/CNS; Rat; Mice; 2ML4; 2004; Controls received mp w/ vehicle; animal info (mice nV57M, 11-14 weeks old, 25-30g; rats male Lister-hooded, young adults, 200-300g); functionality of mp verified by plasma levels; rats ALZET brain infusion kit 2 used; mice ALZET brain infusion kit 3 used; 0.1% DMSO used; stability verified by (in vitro experimentation see pg 9); Cannula placement verified via histological analysis;

Q5027: A. R. Ko, *et al.* Endothelial NOS activation induces the blood-brain barrier disruption via ER stress following status epilepticus. *Brain Res* 2015;1622(163-73

ALZET Comments: Cav-1 peptide; CSF/CNS; Rat; 1007D; 6 days; Controls received mp w/ vehicle; animal info (male, Sprague Dalwey, 7 weeks old); used dental cement; brain coordinates;

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

ALZET Comments: BQ788; Cav-1 peptide; Y-27632; CSF/CNS; Rat; 1007D; 7 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley); ALZET brain infusion kit 1 used; peptides; brain coordinates;

Q5014: Y. J. Kim, *et al.* The role of TRPC6 in seizure susceptibility and seizure-related neuronal damage in the rat dentate gyrus. *Neuroscience* 2015;307(215-30

ALZET Comments: RNA, small interfering TRPC6; CSF/CNS; Rat; 1007D; 1 week; Controls received mp w/ saline; animal info (male, Sprague Dawley, 7 weeks old); ALZET brain infusion kit 1 used; used dental cement;

Q5029: J. Y. Kim, *et al.* ETB receptor-mediated MMP-9 activation induces vasogenic edema via ZO-1 protein degradation following status epilepticus. *Neuroscience* 2015;304(355-67

ALZET Comments: BQ788; CSF/CNS; Rat; 1007D; 1 week; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 7 weeks old); ALZET brain infusion kit 1 used; brain coordinates;

Q3782: M. Katsuki, *et al.* Decreased proportion of Foxp3(+)/CD4(+) regulatory T cells contributes to the development of hypertension in genetically hypertensive rats. *Journal of Hypertension* 2015;33(773-783

ALZET Comments: Losartan; CSF, artificial; CSF/CNS; Rat; 2 weeks; Control animals received mp w/ vehicle; animal info (male, SHRSP, WKY); ALZET brain infusion kit 2 used.

Q3935: J. K. Karimy, *et al.* A novel method to study cerebrospinal fluid dynamics in rats. *Journal of Neuroscience Methods* 2015;241(78-84

ALZET Comments: CSF/CNS; Rat; Animal info (male, Wistar, 8-12 weeks old); ALZET brain infusion kit 1 used; cyanoacrylate adhesive; brain infusion kit only; no pump;

Q4968: L. M. Kangussu, *et al.* Activation of angiotensin-(1-7)/Mas axis in the brain lowers blood pressure and attenuates cardiac remodeling in hypertensive transgenic (mRen2)27 rats. *Neuropharmacology* 2015;97(58-66

ALZET Comments: Angiotensin (1-7); A-779; Saline; CSF/CNS; Rat; 14 days; Controls received mp w/ vehicle; animal info (male, (mRen2)27, 10-12 weeks old); cardiovascular; antihypertensive; antihypertensive; Dose (Angiotensin (1-7) 200 ng/hr; A779 1 ug/hr);

Q4469: Y. Jiang, *et al.* miR-210 mediates vagus nerve stimulation-induced antioxidant stress and anti-apoptosis reactions following cerebral ischemia/reperfusion injury in rats. *JOURNAL OF NEUROCHEMISTRY* 2015;134(173-181



ALZET Comments: miR-210 antagomir; CSF, artificial; CSF/CNS; Rat; 5 days; Controls received mp w/ antagomir control; animal info (male, Sprague Dawley, 250-300g); ALZET brain infusion kit used; ischemia (cerebral); behavioral testing (neurological deficit);

Q4460: T. Ikeda, *et al.* 17alpha-Estradiol is generated locally in the male rat brain and can regulate GAD65 expression and anxiety. NEUROPHARMACOLOGY 2015;90(9-14)

ALZET Comments: Letrizole; estradiol, 17b-; DMSO; saline; CSF/CNS; Rat; 3 days; Controls received mp w/ vehicle; animal info (male, Wistar/ST, 4 weeks old); 20% DMSO used; behavioral testing (open field test); "For the behavior test, to avoid stress from the daily handling, a tube from the subcutaneously-implanted osmotic pump was connected to the injection needle in the guide cannula for three days." pg 10; used guide cannula;

Q4451: Y. H. Ho, *et al.* Peripheral inflammation increases seizure susceptibility via the induction of neuroinflammation and oxidative stress in the hippocampus. JOURNAL OF BIOMEDICAL SCIENCE 2015;22(U1-U14)

ALZET Comments: Endotoxin, LPS; NS398; tempol; Saline; DMSO; IP; CSF/CNS; Rat; 1007D; 7 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 10 weeks old, 250-282g); ALZET brain infusion kit 2 used; 1% DMSO used; Multiple pumps per animal (2); post op. care (IM procaine penicillin 1000IU); immunology; used dental cement; NS398 is a COX-2 inhibitor and anti-inflammatory; tempol scavenges ROS;

Q4444: T. Havranek, *et al.* Intracerebroventricular Oxytocin Administration in Rats Enhances Object Recognition and Increases Expression of Neurotrophins, Microtubule-Associated Protein 2, and Synapsin I. JOURNAL OF NEUROSCIENCE RESEARCH 2015;93(893-901)

ALZET Comments: Oxytocin; Saline; CSF/CNS; Rat; 1007D; 7 days; Controls received mp w/ vehicle; animal info (male, Wistar, 225-250g); ALZET brain infusion kit 2 used; post op. care (SC injection of antibiotics); behavioral testing (open field test, object recognition test, elevated plus maze); used dental cement;

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

ALZET Comments: Amyloid protein, beta (1-40); Acetonitrile; trifluoroacetic acid; CSF/CNS; Rat; 2002; 14 days; 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.

Q5152: H. O. Gautier, *et al.* Neuronal activity regulates remyelination via glutamate signalling to oligodendrocyte progenitors. Nat Commun 2015;6(8518)

ALZET Comments: Tetrodotoxin; Conotoxin, MVIIC w-; NBQX; Uridine, ethyldeoxy-; Saline; CSF/CNS; Rat; 1004; 3 weeks; Controls received mp w/ vehicle; animal info: Female Sprague–Dawley rats aged 10–14 weeks of age (190–250 g); Plastics One brain infusion kit used; good methods; neurodegenerative (demyelination); post op. care (buprenorphine); cyanoacrylate adhesive (pg 12); delayed delivery (3 dpl and 10 dpl), using corn oil to separate drug from saline in a catheter; "The onset of drug delivery into the lesion was controlled by varying the length of the tube that connects the minipump to the cannula and by inserting a sterile corn oil drop (Sigma) to prevent diffusion of the drug solution into the initial saline solution" (pg 12); Dose: 11 mM conotoxin; 50 nM tetrodotoxin; 250 uM NBQX; 5 ug/ul EdU.

Q4412: B. Erdos, *et al.* Brain-derived neurotrophic factor modulates angiotensin signaling in the hypothalamus to increase blood pressure in rats. AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY 2015;308(H612-H622)

ALZET Comments: Losartan; Saline; CSF/CNS; Rat; 4 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 7 weeks old); pumps replaced every 2 weeks; cardiovascular; bp measured using radiotelemetry; used guide infusion cannula from Plastics One;

Q4505: W. S. A. der Guenne, *et al.* Omapatrilat: penetration across the blood-brain barrier and effects on ischaemic stroke in rats. NAUNYN-SCHMIEDEBERGS ARCHIVES OF PHARMACOLOGY 2015;388(939-951)



ALZET Comments: Omapatrilat; Saline; NaOH; CSF/CNS; Rat; 2002; 5 days; Controls received mp w/ vehicle; animal info (male, Wistar, 300-320g); ischemia (cerebral); cardiovascular;.

Q3777: S. Y. Dai, *et al.* Brain endogenous angiotensin II receptor type 2 (AT2-R) protects against DOCA/salt-induced hypertension in female rats. *Journal of Neuroinflammation* 2015;12(U8-U18)

ALZET Comments: PD123,319; CSF/CNS; Rat; 4 weeks; Control animal received mp w/ vehicle; animal info (male, female, 10-12 wks old, Wistar); ALZET brain infusion kit used.

Q4391: A. A. da Silva, *et al.* Brain-mediated antidiabetic, anorexic, and cardiovascular actions of leptin require melanocortin-4 receptor signaling. *JOURNAL OF NEUROPHYSIOLOGY* 2015;113(2786-2791)

ALZET Comments: Leptin; CSF/CNS; Rat; 2001; 7 days; Animal info (male, Wistar, 14-16 weeks old, STZ); diabetes; after 7 days of infusion, ICV cannula was severed;.

Q4343: W. Cao, *et al.* A Salt-Induced Reno-Cerebral Reflex Activates Renin-Angiotensin Systems and Promotes CKD Progression. *JOURNAL OF THE AMERICAN SOCIETY OF NEPHROLOGY* 2015;26(1619-1633)

ALZET Comments: Losartan; clonidine; tempol; hydralazine; PBS; CSF, artificial; CSF/CNS; intragastric; Rat; 2 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 5 weeks old, 5/6x nephrectomy); dose-response (pg 1627); cardiovascular; bp measured using catheter;.

Q4338: E. Burgos-Ramos, *et al.* Chronic central leptin infusion modulates the glycemia response to insulin administration in male rats through regulation of hepatic glucose metabolism. *MOLECULAR AND CELLULAR ENDOCRINOLOGY* 2015;415(157-172)

ALZET Comments: Leptin; BSA; CSF/CNS; SC; Rat; 14 days; Controls received mp w/ saline; animal info (male, Wistar, adult, 250 +/-10g); 1% BSA used; diabetes;.

Q4331: P. Bonaventure, *et al.* A Selective Orexin-1 Receptor Antagonist Attenuates Stress-Induced Hyperarousal without Hypnotic Effects. *JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS* 2015;352(590-601)

ALZET Comments: Allylglycine, 1-; CSF/CNS; Rat; 2002; 5 days; Animal info (male, Sprague Dawley, 300-350g); behavioral testing (social interaction); Cannula placement verified via histological analysis; used Plastics One cannula attached to PE-60 tubing;.

Q4304: K. A. Alkadhi, *et al.* Chronic Stress Decreases Basal Levels of Memory-Related Signaling Molecules in Area CA1 of At-Risk (Subclinical) Model of Alzheimer's Disease. *MOLECULAR NEUROBIOLOGY* 2015;52(93-100)

ALZET Comments: Amyloid protein, beta (1-42); Acetonitrile; trifluoroacetic acid; CSF/CNS; Rat; 14 days; Controls received mp w/ control peptide amyloid protein, beta (42-1); animal info (Wistar, 200-225g); 0.1% trifluoroacetic acid used; neurodegenerative (Alzheimer's disease);.

Q4300: I. Ali, *et al.* Role of fractalkine-CX3CR1 pathway in seizure-induced microglial activation, neurodegeneration, and neuroblast production in the adult rat brain. *NEUROBIOLOGY OF DISEASE* 2015;74(194-203)

ALZET Comments: Antibody, CX3CR1 rabbit; fractalkine, recombinant rat; PBS; CSF/CNS; Rat; 1007D; 7 days; Controls received mp w/ vehicle; animal info (male, Sprague-Dawley, adult, 200-250g); ALZET brain infusion kit 1 used;.

Q4244: H. K. Agarwal, *et al.* Synthesis and evaluation of thymidine kinase 1-targeting carboranyl pyrimidine nucleoside analogs for boron neutron capture therapy of cancer. *EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY* 2015;100(197-209)

ALZET Comments: Boron; DMSO; CSF/CNS; Rat; 2001D; 24 hours; Animal info (Fischer); functionality of mp verified by distribution of agent in brain; 35% DMSO used; cancer (glioma); brain tissue distribution;.