



**Recent References (2017-Present) on Cerebral Ischemia Research  
Using ALZET® Osmotic Pumps**

**Q11029:** J. Xu, *et al.* Anti-Inflammatory Actions of G-Protein-Coupled Estrogen Receptor 1 (GPER) and Brain-Derived Estrogen Following Cerebral Ischemia in Ovariectomized Rats. *Biology (Basel)* 2023;12(1):

**Agents:** G1; G36 **Vehicle:** Cotton seed oil; DMSO; **Route:** SC; **Species:** Rat; **Strain:** Sprague-Dawley; **Pump:** 2002; **Duration:** 14 days;

**ALZET Comments:** 1% DMSO used; animal info: Adult female ovariectomized rats; G1 is G-protein-coupled estrogen receptor agonist, G36 is GPER antagonist; immunology (inflammation); cerebral ischemia

**Q10886:** Y. Zhao, *et al.* Vascular Endothelium Deploys Caveolin-1 to Regulate Oligodendrogenesis After Chronic Cerebral Ischemia in Mice. *Nature Communications* 2022;13(1):6813

**Agents:** Antagomir, PEI; Antagomir, PEI, Cy5 labelled **Vehicle:** Not Stated; **Route:** CSF/CNS (corpus callosum); **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

**ALZET Comments:** Dose (2 µg /day); Controls received mp w/ vehicle; animal info (Adult male (24–29 g; for BCAS surgery) and C57BL/6J mice (6–8 weeks old); Brain coordinates: (0.5mm anterior-posterior, 1.0mm medial-lateral, –2.1mm dorsal ventral relative to bregma); ischemia (cerebral); behavioral testing (cognitive test);

**R0405:** S. E. Yang, *et al.* Therapeutic Potential and Mechanisms of Novel Simple O-Substituted Isoflavones against Cerebral Ischemia Reperfusion. *International Journal of Molecular Sciences* 2022;23(18):

**Agents:** Genistein **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 2 weeks;

**ALZET Comments:** Dose (0.1 mg/kg); ischemia (Cerebral); Therapeutic indication (Cerebral Ischemia); animal info. balb/c mice

**Q10592:** E. R. Louet, *et al.* tPA-NMDAR Signaling Blockade Reduces the Incidence of Intracerebral Aneurysms. *Translational Stroke Research* 2022;13(6):1005-1016

**Agents:** Angiotensin II **Vehicle:** Saline; **Route:** SC; **Species:** C57B16/1296 mice; **Pump:** 1001; **Duration:** 14 days;

**ALZET Comments:** Dose (800 ug); 0.9% saline used; animal info (tPA null, C57BL6/129 Male; 8 weeks old); peptides; ischemia (cerebral); Therapeutic indication (Intracranial aneurysms);

**Q10418:** A. B. Caglayan, *et al.* The Unconventional Growth Factors Cerebral Dopamine Neurotrophic Factor and Mesencephalic Astrocyte-Derived Neurotrophic Factor Promote Post-ischemic Neurological Recovery, Perilesional Brain Remodeling, and Lesion-Remote Axonal Plasticity. *Translational Stroke Research* 2022;

**Agents:** Cerebral dopamine neurotrophic factor, recombinant human; Mesencephalic astrocyte-derived neurotrophic factor, recombinant human **Vehicle:** NaCl; **Route:** CSF/CNS (left ventricle); **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;

**ALZET Comments:** "Dose: (1 ug/day); (0.9% NaCl), vehicle used; Controls received mp w/ vehicle; animal info: male C57BL6/j mice (8–10 weeks) behavioral testing: Rotarod test, Grip strength; Open field test; Elevated o maze test; Cerebral Dopamine Neurotrophic Factor aka (CDNF); ALZET brain infusion kit 3 used; Brain coordinates (contralateral motor cortex (0.5 mm rostral and 2.5 mm lateral to the bregma); neurodegenerative (stroke); ischemia (cerebral); "

**Q10239:** F. Liu, *et al.* Electroacupuncture Improves Cerebral Ischemic Injury by Enhancing the EPO-JAK2-STAT5 Pathway in Rats. *Neuropsychiatric Disease and Treatment* 2021;17(2489-2498

**Agents:** AG490 **Vehicle:** Not Stated; **Route:** CSF/CNS (intracerebroventricular); **Species:** Rat; **Pump:** Not Stated;

**ALZET Comments:** "Controls received mp w/ vehicle; animal info: Adult Sprague-Dawley (SD) rats (male: female=1:1, 200– 250 g); post op. care: After suturing the skin, analgesics and antibiotics were injected intraperitoneally to prevent postoperative pain and infection; AG-490 (a Janus-tyrosine kinase-2 (JAK-2) phosphorylation inhibitor); ALZET brain infusion kit used; Brain coordinates (bregma, 0.8 mm posterior, –4.8 mm dorsoventral, –1.5 mm lateral).; ischemia (cerebral ischemia); "

**Q8701:** S. Bhattarai, *et al.* Modulation of Brain Pathology by Enhancer RNAs in Cerebral Ischemia. *Mol Neurobiol* 2021;58(4):1482-1490

**Agents:** Anti-eRNA oligos **Vehicle:** CSF/ artificial; **Route:** CNS/CSF; **Species:** Mice; **Pump:** 1003D; **Duration:** 3 days;

**ALZET Comments:** Dose (8.3 pmole/ul); animal info (3 months old, 20-30 g, C57BL/6N); antisense (eRNA\_06347: 5'-GATTTGGAATTGCTAG-3' ; eRNA\_093384: 5'-GGAAGCAGGTGAACAG-3'); ALZET brain infusion kit 3 used; ischemia (Cerebral);



**Q10325:** D. R. Seeger, *et al.* Blood-Brain Barrier Is the Major Site for a Rapid and Dramatic Prostanoid Increase upon Brain Global Ischemia. *Lipids* 2020;55(1):79-85

**Agents:** Ketorolac **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 12 hours;

**ALZET Comments:** Dose: (0.625 mg/kg/h); Controls received mp w/ vehicle; animal info: Mice (C57BL/6 background) at 4–6 months; Resultant plasma level (2.03 in Ketorolac concentration); ischemia (cerebral);

**Q9829:** L. Zheng, *et al.* Rhythmic light flicker rescues hippocampal low gamma and protects ischemic neurons by enhancing presynaptic plasticity. *Nature Communications* 2020;11(1):3012

**Agents:** GK23; GK13; Conotoxin, w-; **Vehicle:** CSF, Artificial; **Route:** CSF/CNS (intracerebral); IV; **Species:** Mice; **Pump:** 1003D; **Duration:** 3 days;

**ALZET Comments:** Dose (2 mg/kg/day GK23, GK13; 2.28 ng/kg/day w-Conotoxin); animal info (Adult male C57BL/6 mice (3-months-old)); behavioral testing (Open field test; Morris water maze; Y-maze test); peptides; ALZET brain infusion kit 3 used; Brain coordinates (coordinates from bregma: anterior-posterior = –0.5 mm; lateral = 1.0 mm); dental cement used; ischemia (cerebral ischemia);

**Q9564:** W. Xu, *et al.* Blockade of Nogo-A/Nogo-66 receptor 1 (NgR1) Inhibits Autophagic Activation and Prevents Secondary Neuronal Damage in the Thalamus after Focal Cerebral Infarction in Hypertensive Rats. *Neuroscience* 2020;431(103-114

**Agents:** NEP1-40 **Vehicle:** PBS; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Pump:** Not Stated; **Duration:** 3 days;

**ALZET Comments:** Dose (270 ug/kg); Controls received mp w/ vehicle; animal info (male Sprague–Dawley rats, weighing 60–90 g); behavioral testing (adhesive removal test); NEP1-40 aka Nogo-66 receptor antagonist peptide; peptides; Brain coordinates (relative to bregma: -1.0 mm anteroposterior, 1.4 mm lateral, and -4.0 mm dorsoventral); ischemia (cerebral);

**Q9553:** S. K. Woo, *et al.* SUR1-TRPM4 channels, not KATP, mediate brain swelling following cerebral ischemia. *Neuroscience Letters* 2020;718(134729

**Agents:** Oligodeoxynucleotide **Vehicle:** Saline, sterile normal; **Route:** IV (external jugular); **Species:** Rat; **Pump:** 2001D; **Duration:** 24 hours;

**ALZET Comments:** Dose (1.2 mg / 24 h); animal info (Male Wistar rats, aged 11–12 weeks (300–350 gm)); Oligodeoxynucleotide aka ODN; ischemia (cerebral);

**Q9450:** D. R. Seeger, *et al.* Blood-Brain Barrier Is the Major Site for a Rapid and Dramatic Prostanoid Increase upon Brain Global Ischemia. *Lipids* 2020;55(1):79-85

**Agents:** Ketorolac **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 12 hours;

**ALZET Comments:** Dose (0.625 mg/kg/h); Controls received mp w/ vehicle; animal info (Mice (C57BL/6 background), 4–6 months of age); Resultant plasma level (2.03% Ketorolac concentration); ischemia (cerebral);

**Q8670:** N. Miyamoto, *et al.* The effects of A1/A2 astrocytes on oligodendrocyte lineage cells against white matter injury under prolonged cerebral hypoperfusion. *Glia* 2020;68(9):1910-1924

**Agents:** Flavone, 7,8-dihydroxy **Vehicle:** DMSO; PBS; **Route:** IP; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;

**ALZET Comments:** Dose (5 mg/kg); 17% DMSO/PBS used; Controls received mp w/ vehicle; animal info (male C57BL/6 mice (10 weeks old); behavioral testing (Y-maze test); 7,8-dihydroxyflavone aka 7.8-DHF; ischemia (cerebral);

**Q8640:** L. Li, *et al.* ABCA1/ApoE/HDL Signaling Pathway Facilitates Myelination and Oligodendrogenesis after Stroke. *International Journal of Molecular Sciences* 2020;21(12):

**Agents:** Apolipoprotein E; High density lipoprotein; **Vehicle:** CSF, artificial; **Route:** CSF/CNS (right lateral ventricle); **Species:** Mice; **Pump:** 1002; **Duration:** 14 days;

**ALZET Comments:** Dose (25µg); Controls received mp w/ vehicle; animal info (ABCA1-B/-B mice); behavioral testing (adhesive removal test); Apolipoprotein E aka ApoE2; High density lipoprotein aka HDL3; ischemia (cerebral);



**Q8343:** N. Bai, *et al.* G-protein-coupled estrogen receptor activation upregulates interleukin-1 receptor antagonist in the hippocampus after global cerebral ischemia: implications for neuronal self-defense. *Journal of Neuroinflammation* 2020;17(1):45

**Agents:** G1; G36; Oligodeoxynucleotide, IL1RA antisense; Scrambled Missense **Vehicle:** DMSO; Saline; **Route:** CSF/CNS (left lateral ventricle); SC; **Species:** Rat; **Pump:** 2004; 2002; 2001; **Duration:** 14 days;

**ALZET Comments:** Dose (10 ug/day; 10 nmol/day); 1% DMSO, 0.9% saline used; Controls received mp w/ vehicle; animal info (Adult female Sprague-Dawley rats); G1 aka GPER agonist; G36 aka GPER antagonist; ALZET brain infusion kit Lot no 10331-14 used; Brain coordinates (anteroposterior, 0.8 mm; lateral, 1.5 mm; depth, 3.5 mm; from bregma); ischemia (GPER neuroprotective effects);

**Q9124:** Z. Y. Zhai, *et al.* Constraint-induced movement therapy enhances angiogenesis and neurogenesis after cerebral ischemia/reperfusion. *Neural Regeneration Research* 2019;14(10):1743-1754

**Agents:** NEP1-40 **Vehicle:** Saline/DMSO; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2ML4; **Duration:** 1,2 weeks;

**ALZET Comments:** Dose (1 mg); Controls received mp w/ vehicle; animal info (Male, Sprague Dawley, 8-10 weeks old, 280-320 g); behavioral testing (Beam Walking Test, Morris Water Maze Test); NEP1-40 aka Specific antagonist of the Nogo-66 receptor; ALZET brain infusion kit 2 used; Brain coordinates (anteroposterior -0.9 mm and mediolateral +2.0 mm); ischemia (Cerebral);

**Q9117:** M. Yli-Karjanmaa, *et al.* Topical Administration of a Soluble TNF Inhibitor Reduces Infarct Volume After Focal Cerebral Ischemia in Mice. *Frontiers in Neuroscience* 2019;13(781)

**Agents:** XPro1595; Etanercept **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1003D; **Duration:** 3 days;

**ALZET Comments:** Dose (XPro1595- 2.5 mg/ml/ul/hr or Etanercept- 2.5 mg/ml/ul/hr); 0.9% Saline used; Controls received mp w/ vehicle; animal info (Male, C57BL/6, 7-8 weeks old); behavioral testing (Grip Strength Test); ischemia (Cerebral);

**Q8836:** S. Xing, *et al.* EphrinB2 activation enhances angiogenesis, reduces amyloid-b deposits and secondary damage in thalamus at the early stage after cortical infarction in hypertensive rats. *Journal of Cerebral Blood Flow & Metabolism* 2019;39(1776-1789)

**Agents:** Ephrin B2-Fc, human recombinant; Fc-IgG, human recombinant **Vehicle:** PBS, Human Serum Albumin buffered; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Pump:** Not Stated; **Duration:** 3 days;

**ALZET Comments:** Dose ((EphB2-Fc 100 µl), (IgG-Fc 100 µl)); 0.01M phosphate-buffered saline (pH7.4) containing 0.1% human serum albumin used; Controls received sham surgery; animal info (male, Sprague-Dawley, 80-100g); post op. care (Body temperature of animals kept at 37+/-0.5C with a heating pad during recovery); behavioral testing (Adhesive removal test); Brain coordinates (1.0 mm anteroposterior, 1.4 mm lateral, 4.0 mm dorsoventral relative to bregma); Cannula placement verified via stereotaxic frame; ischemia (cerebral infarction); pump model not stated although flow rate listed as 100ul; Therapeutic indication (EphB2-Fc treatment significantly accelerated the sensory recovery compared with those in the IgG-Fc group. Activation of ephrinB2 can promote angiogenesis, decrease Abeta deposits and rescue the secondary neurodegeneration of thalamus after cerebral infarction.);

**Q7677:** R. Wang, *et al.* Photobiomodulation for Global Cerebral Ischemia: Targeting Mitochondrial Dynamics and Functions. *Mol Neurobiol* 2019;56(3):1852-1869

**Agents:** Mdivi-1 **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Rat; **Pump:** 1003D; **Duration:** Not Stated;

**ALZET Comments:** Dose (1 mg/kg/day); Controls received mp w/ vehicle; animal info (Adult male Sprague-Dawley rats 250-300 g); behavioral testing (Barnes Maze Task, Morris Water Maze Test); enzyme inhibitor (selective inhibitor of mitochondrial fission protein Drp1);

**Q4964:** S. Bake, *et al.* Insulin-like Growth Factor (IGF)-1 treatment stabilizes the microvascular cytoskeleton under ischemic conditions. *Experimental Neurology* 2019;311(162-172)

**Agents:** Insulin-like growth factor-I, recomb. Human; JB-1 **Vehicle:** CSF, artificial; **Route:** CSF/CNS (right lateral ventricle); **Species:** Rat; **Pump:** 1003D; 1007D; **Duration:** 1 day; 5 days;

**ALZET Comments:** Dose (100 µg/ml rhIGF-1; 20 µg/ml JB-1); Controls received mp w/ vehicle; animal info (Female Sprague Dawley rats; 10-12 months; weight range 325-350 g); JB-1 is an IGFR inhibitor; Brain coordinates (- 1.0mm posterior to bregma, -1.4mm medial lateral, -3.5mm from dural surface); cyanoacrylate adhesive; ischemia (cerebral);



**Q8989:** L. Zhai, *et al.* Endogenous calcitonin gene-related peptide suppresses ischemic brain injuries and progression of cognitive decline. *Journal of Hypertension* 2018;36(4):876-891

**Agents:** Peptide, human alpha calcitonin gene-related **Vehicle:** Saline, Sterile Physiological; **Route:** SC; **Species:** Mice; **Duration:** 28 days;

**ALZET Comments:** Dose (1  $\mu\text{mol/l}$  at 0.5 $\mu\text{l/h}$ ); Controls received mp w/ vehicle; animal info (8 weeks, male, C57BL/6); CGRP is a 37-amino acid peptide produced as a consequence of alternative RNA processing of the calcitonin gene; only WT mice were used for mp experiments; Therapeutic indication (Calcitonin gene-related peptide administration promotes cerebral blood flow recovery, suppresses astrocyte activation and increases angiogenesis after cerebral ischemia);

**Q7313:** F. Turcato, *et al.* Sequential combined Treatment of Pifithrin-alpha and Posiphen Enhances Neurogenesis and Functional Recovery After Stroke. *Cell Transplantation* 2018;27(4):607-621

**Agents:** Phenserine, (+)-; Pifithrin-a **Vehicle:** Saline, physiological; DMSO; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

**ALZET Comments:** Dose (25 mg/kg/day (+)-Phenserine); (2 mg/kg/day PFT-a); 10% DMSO in saline for PFT-a; Controls received mp w/ vehicle; animal info (male, 10–12-week-old, C57/BL6); behavioral testing (Accuscan activity monitor, novel object recognition); (+)-phenserine aka Posiphen; ischemia (cerebral); Therapeutic indication (stroke);

**Q7876:** K. Y. Tseng, *et al.* MANF Promotes Differentiation and Migration of Neural Progenitor Cells with Potential Neural Regenerative Effects in Stroke. *Mol Ther* 2018;26(1):238-255

**Agents:** neurotrophic factor, recombinant human glial cell line-derived; neurotrophic factor, mesencephalic astrocyte-derived **Vehicle:** PBS; **Route:** CSF/CNS (Lateral ventricle); **Species:** Rat; **Pump:** 2002; **Duration:** 13 days;

**ALZET Comments:** Dose ((GDNF 0.25  $\mu\text{g}/\mu\text{L}$  at 12  $\mu\text{L/day}$ ), (MANF 0.25  $\mu\text{g}/\mu\text{L}$  at 12  $\mu\text{L/day}$ )); Controls received mp w/ vehicle; animal info (male, Sprague-Dawley, 220-260g); GDNF promotes differentiation and tangential migration of cortical GABAergic neurons during brain development. MANF is a non-classical neurotrophic factor that resides in the endoplasmic reticulum; Brain coordinates (A/P 0.5; L/M +1.9; D/V 2.5); Cannula placement verified via stereotaxic frame; ischemia (Cerebral ischemia); pumps were implanted from day 3 to day 16 of experiment before being removed.; Therapeutic indication (the neuroregenerative potential of MANF via promoting neuroblast recruitment to the lesioned cortex in stroke rats);

**Q7244:** R. Thakkar, *et al.* 17beta-Estradiol Regulates Microglia Activation and Polarization in the Hippocampus Following Global Cerebral Ischemia. *Oxidative Medicine and Cellular Longevity* 2018;2018(4248526

**Agents:** Estradiol, 17b **Vehicle:** Cyclodextrin, B-; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 14 days;

**ALZET Comments:** Dose (0.0167 mg); 20%  $\beta$ -cyclodextrin used; animal info (3 month old, female, Sprague Dawley);

**Q7249:** L. Nusrat, *et al.* Cyclosporin A-Mediated Activation of Endogenous Neural Precursor Cells Promotes Cognitive Recovery in a Mouse Model of Stroke. *Front Aging Neurosci* 2018;10(93

**Agents:** Cyclosporin A **Vehicle:** Ethanol, Cremaphor; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 4-49 days;

**ALZET Comments:** Dose (15 mg/kg/day); ; animal info (adult male C57BL/6 mice 6–8 weeks of age; 20–25 g); pumps replaced; ischemia (cerebral); 65% ethanol and 35% cremaphor used

**Q8096:** W. Liu, *et al.* Oxidative stress-elicited YY1 potentiates antioxidative response via enhancement of NRF2-driven transcriptional activity: A potential neuronal defensive mechanism against ischemia/reperfusion cerebral injury. *Biomed Pharmacother* 2018;108(698-706

**Agents:** YY1-siRNA **Vehicle:** Not stated; **Route:** CSF/CNS; **Species:** Mice; **Pump:** Not stated; **Duration:** 4 days;

**ALZET Comments:** animal info (Male, C57B/6, 25-35 g); Brain coordinates (mediolateral=1.0 mm, anteroposterior=0.2 mm; dorsoventral=3.1 mm); ischemia (Cerebral);

**Q8075:** L. Li, *et al.* Combination Treatment with Methylene Blue and Hypothermia in Global Cerebral Ischemia. *Mol Neurobiol* 2018;55(3):2042-2055

**Agents:** Methylene blue **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 1003D; **Duration:** 3 days;

**ALZET Comments:** Dose (0.5 mg/kg/day); Controls received mp w/ vehicle; animal info (Male, Sprague Dawley, 3 months old, 250-300 g); ischemia (Global Cerebral Ischemia);



**Q7115:** S. Y. Cheon, *et al.* Apoptosis Signal-regulating Kinase 1 Silencing on Astroglial Inflammasomes in an Experimental Model of Ischemic Stroke. *Neuroscience* 2018;390(218-230

**Agents:** RNA, small interfering (ASK1) **Vehicle:** siPORTNeoFX Transfection agent; **Route:** CSF/CNS (left lateral ventricle);

**Species:** Mice; **Pump:** 1003D; **Duration:** 3 days;

**ALZET Comments:** Dose (1 IL/h/ day); animal info (Adult,C57BL/6, male); enzyme inhibitor (apoptosis signal-regulating kinase 1); ALZET brain infusion kit used; ALZET brain infusion kit used; ischemia (Cerebral);

**Q7098:** M. Aleksandrowicz, *et al.* Effect of vasopressin-induced chronic hyponatremia on the regulation of the middle cerebral artery of the rat. *Pflugers Arch* 2018;470(7):1047-1054

**Agents:** Vasopressin **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 3.5 days;

**ALZET Comments:** Dose (2.4 µg/24 h); animal info (Male Wistar rats weighing 250–300 g); ischemia (cerebral); cardiovascular; Minipumps used administer vasopressin to induce prolonged hyponatremia;

**Q6801:** W. Xu, *et al.* Chloride Co-transporter NKCC1 Inhibitor Bumetanide Enhances Neurogenesis and Behavioral Recovery in Rats After Experimental Stroke. *Mol Neurobiol* 2017;54(4):2406-2414

**Agents:** Bumetanide **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Pump:** 2004; **Duration:** 21 days;

**ALZET Comments:** Dose (0.2 mg/kg/day); animal info (Adult male Wistar rats); enzyme inhibitor (selective Na<sup>+</sup>-K<sup>+</sup>-Cl<sup>-</sup>-co-transporter inhibitor,); ALZET brain infusion kit used; Brain coordinates (AP-0.9 mm, ML+ 1.9 mm);

**Q6534:** Y. C. Wang, *et al.* Post-acute delivery of memantine promotes post-ischemic neurological recovery, peri-infarct tissue remodeling, and contralesional brain plasticity. *J Cereb Blood Flow Metab* 2017;37(3):980-993

**Agents:** Memantine **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;

**ALZET Comments:** Dose (4 or 20 mg/kg/d); animal info (8-12 week old C57BL6/j male mice weighing 23-28g); ischemia (cerebral); "...we decided to use a subcutaneous delivery strategy for memantine in this study using miniosmotic pumps, given that miniosmotic pumps allowed to achieve most stable plasma memantine levels " pg.981 ; Therapeutic indication (stroke);

**Q6481:** T. Shiromoto, *et al.* The Role of Endogenous Neurogenesis in Functional Recovery and Motor Map Reorganization Induced by Rehabilitative Therapy after Stroke in Rats. *J Stroke Cerebrovasc Dis* 2017;26(2):260-272

**Agents:** Cytosine-β-Darabinofuranoside **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Pump:** 2001; **Duration:** 7 days;

**ALZET Comments:** 0.9% Saline used; Controls received mp w/ vehicle; Brain coordinates (1.6 mm lateral to the midline, .8 mm posterior to the bregma, and 4.0 mm deep); Therapeutic indication (cerebral ischemia);

**Q6027:** D. Desposito, *et al.* Neuroprotective effect of kinin B1 receptor activation in acute cerebral ischemia in diabetic mice. *Sci Rep* 2017;7(1):9410

**Agents:** Bradykinin B1 receptor agonist; Bradykinin B2 receptor agonist; **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** Not Stated;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (C57/BL6, 18weeks old); ischemia (cerebral); Compound AKA: SarLys[Hyp3, Igl5, DPhe8]desArg9-bradykinin and [Hyp(3),Thi(5),(N)Chg(7),Thi(8)]-bradykinin; Dose (720 nmol/kg/day and 240 nmol/Kg/day);