



References on the Administration of siRNA Using ALZET® Osmotic Pumps

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;.

Q7264: C. Rivat, *et al.* Inhibition of neuronal FLT3 receptor tyrosine kinase alleviates peripheral neuropathic pain in mice. *Nat Commun* 2018;9(1):1042

ALZET Comments: RNA, small interfering (Flt3, scrambled); CSF/CNS(Intrathecal); Mice; 1002; 6 days; Dose (12.53 ng/ml); animal info (C57BL/6 naive mice, Flt3KO mice 25–30 g.); behavioral testing (reflexive tail flick); spinal cord injury; stress/adverse reaction: (see pg. 10);.

Q7151: D. S. Lee, *et al.* PDI-mediated S-nitrosylation of DRP1 facilitates DRP1-S616 phosphorylation and mitochondrial fission in CA1 neurons. *Cell Death Dis* 2018;9(9):869

ALZET Comments: RNA, small interfering (protein disulfide isomerase), L-NAME; Saline; CSF/CNS (right lateral ventricle); Rats; 1007D; Dose (15 µg/µl L-NAME); animal info (7-week-old male Sprague-Dawley rats); Nω-nitro-L-arginine methyl ester hydrochloride aka L-name; enzyme inhibitor (protein disulfide isomerase); ALZET brain infusion kit 1 used; Brain coordinates (right lateral ventricle, 1mm posterior; 1.5 mm lateral; 3.5 mm depth from bregma);.

Q7191: J. E. Kim, *et al.* P2RX7-MAPK1/2-SP1 axis inhibits MTOR independent HSPB1-mediated astroglial autophagy. *Cell Death Dis* 2018;9(5):546

ALZET Comments: BzATP, OxATP, A740003, Compound C, 3-chloroacetyl indole, Mithramycin A, U0126, RNA, small interfering (Heat shock protein B1); CSF/CNS (lateral ventricle); Mice; 1007D; 7 days; Dose: BzATP (5 mM), OxATP (5 mM) A740003 (10 µM), Comp C (100 nM), 3CAI (25 µM), MMA (25 µM), U0126 (25 µM); animal info (Male, C57BL/6J, 25-30 g, 60-90 days old); BzATP is a P2RX7 agonist, OxATP and A740003 are P2RX7 antagonists; enzyme inhibitor (mitogen-activated protein kinase 1/2); ALZET brain infusion kit 3 used; Brain coordinates (lateral cerebral ventricle 1.0mm lateral to bregma); dependence; no stress: doses were well tolerated, and no signs of neurotoxicity (hind-limb paralysis, vocalization, food intake, or neuroanatomical damage) were observed;.

Q6927: A. R. Jeon, *et al.* PDI Knockdown Inhibits Seizure Activity in Acute Seizure and Chronic Epilepsy Rat Models via S-Nitrosylation-Independent Thiolation on NMDA Receptor. *Front Cell Neurosci* 2018;12(438)

ALZET Comments: RNA, small interfering; L-NAME; PACMA31; Saline; CSF/CNS (Right lateral ventricle); Rat; 1007D; 1 week; Controls received mp w/ vehicle; animal info (7 week old male Sprague-Dawley rats); enzyme inhibitor (PACMA31 is a selective PDI inhibitor); ALZET brain infusion kit 1 used; Brain coordinates (1 mm posterior; 1.5 mm lateral; 3.5 mm depth from bregma); Therapeutic indication (seizure);.

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)

ALZET Comments: RNA, small interfering (ASK1); siPORTNeoFX Transfection agent; CSF/CNS (left lateral ventricle); Mice; 1003D; 3 days; Dose (1 µl/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);.

Q7089: F. X. Blaudin de The, *et al.* Engrailed homeoprotein blocks degeneration in adult dopaminergic neurons through LINE-1 repression. *EMBO J* 2018;37(15):

ALZET Comments: Colominic acid, RNA, small interfering (anti-Orf2p), cell-permeable peptide Penetratin-coupled siRNA; Saline; CSF/CNS; Mice; 1003D; 3 days; 0.9% sodium chloride used; Dose (1.5 µg/µl- colomic acid, 5 µM- En 1/2); Controls received mp w/ vehicle; animal info (male, En1-het mice,); Brain coordinates (-3.8 mm dorso/ventral); neurodegenerative (dopaminergic neurons);.



Q5934: D. Yu, *et al.* Multiplexed RNAi therapy against brain tumor-initiating cells via lipopolymeric nanoparticle infusion delays glioblastoma progression. *Proc Natl Acad Sci U S A* 2017;114(30):E6147-E6156

ALZET Comments: RNA, small interfering; CSF/CNS (intratumoral); mice (nude); 1002, 2002; 14 days; animal info (athymic nude, 6-8 weeks old); ALZET brain infusion kit 3 used; cancer (glioblastoma); "Because repeated surgery introduces stress and pain that may impact the survival of the experimental animals, we opted for the convection-enhanced delivery (CED) strategy using an Alzet osmotic pump to deliver a continuous supply of the nano RNAi combination..." pg E6151;.

Q6753: P. G. Quresma, *et al.* Cdc2-like kinase 2 in the hypothalamus is necessary to maintain energy homeostasis. *Int J Obes (Lond)* 2017;41(2):268-278

ALZET Comments: RNA, small interfering (Cdc2-like kinase 2); Saline; DMSO; CSF/CNS (lateral ventricle); Mice; 1007D; 7 days; Dose (2 µg/day); 0.3% DMSO used; Controls received mp w/ vehicle; animal info (Eight-week-old male Swiss, db/db mice (Leprdb/Leprdb) and Leprdb/+ mice); Small interference RNA aka siCLK2;.

Q6597: C. Lin, *et al.* Omega-3 fatty acids regulate NLRP3 inflammasome activation and prevent behavior deficits after traumatic brain injury. *Exp Neurol* 2017;290(115-122

ALZET Comments: RNA, small interfering; CSF/CNS (left lateral ventricle); Rat; 1003D; 72 hours; Dose (30 nmol); Controls received mp w/ vehicle; animal info (8-weeks-old male Sprague-Dawley rats); behavioral testing (Beam balance, Morris water maze);.

Q6293: A. R. Ko, *et al.* TRPC6-mediated ERK1/2 phosphorylation prevents dentate granule cell degeneration via inhibiting mitochondrial elongation. *Neuropharmacology* 2017;121(120-129

ALZET Comments: RNA, small interfering; TRPC6; U0126; CSF/CNS (right lateral ventricle); Rat; 1007D; Controls received mp w/ vehicle; animal info (7 week old male Sprague-Dawley rats); U0126 is a selective ERK1/2 inhibitor; ALZET brain infusion kit 1 used; Brain coordinates (1 mm posterior; 1.5 mm lateral; -3.5 mm depth to the bregma); Therapeutic indication (epilepsy);.

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); bacitracin; 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;.

Q5837: J. E. Kim, *et al.* Sustained HSP25 Expression Induces Clasmotodendrosis via ER Stress in the Rat Hippocampus. *Front Cell Neurosci* 2017;11(47

ALZET Comments: RNA, small interfering (HSP25); Saline; CSF/CNS (right lateral ventricle); Rat; 1007D; 7 days, 1 week; Controls received control siRNA ; animal info (7 months old); ALZET brain infusion kit 1 used; Electrophysiology; Therapeutic indication (Heat shock proteins, ER stress);.

Q5844: X. Jiang, *et al.* Gastrin stimulates renal dopamine production by increasing the renal tubular uptake of L-DOPA. *Am J Physiol Endocrinol Metab* 2017;312(1):E1-E10

ALZET Comments: RNA, small interfering (Gastrin-specific); TransIT in vivo transfection reagent; Kidney (subscapular space); Mice; 1007D; 7 days; Controls received mp with mock (nonsilencing) siRNA; ALZET polyethylene tubing used ; Therapeutic indication (Nephrology, Hypertension, L-Dopa); Dose (3 µg/day).

Q6011: S. Y. Cheon, *et al.* Regulation of Microglia and Macrophage Polarization via Apoptosis Signal-Regulating Kinase 1 Silencing after Ischemic/Hypoxic Injury. *Front Mol Neurosci* 2017;10(261

ALZET Comments: RNA, small interfering (ASK1); siPORTNeoFX Transfection agent; CSF/CNS (Left ventricle); Mice; 1003D; 3 days; animal info (C57BL/6, 8-12 weeks) ; Therapeutic indication (Hypoxia, late inflammation, ischemic stroke);.

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. *Circ Heart Fail.* 2016;9(1-10)

ALZET Comments: AntagomiR-7b; RNA, small interfering GABBR1; angiotensin II; CSF/CNS (paraventricular nucleus); Rat; 1004; 1002; 4 weeks; 2 weeks; 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; angiotensin II 1 ng/kg/min);.

Q6055: A. Minami, *et al.* Role of Sialidase in Long-Term Potentiation at Mossy Fiber-CA3 Synapses and Hippocampus-Dependent Spatial Memory. *PLoS One* 2016;11(10):e0165257

ALZET Comments: RNA, small interfering (Neu4); AteloGene transfection reagent; CSF/CNS (third ventricle); Rat; 7 days; Controls received mp w/ vehicle; animal info (8-9 weeks); behavioral testing (Morris water maze); AteloGene = in vivo siRNA transfection reagent; coordinates (AP = -4.2 mm; ML = 0.0 mm; DV = 4.6 mm).

Q4813: Kyoung Joo Cho, *et al.* Apoptosis signal-regulating kinase 1 mediates striatal degeneration via the regulation of C1q. *SCIENTIFIC REPORTS* 2016;6(1-11)

ALZET Comments: Nitropropionic acid, 3-; RNA, small interfering ASK1; Transfection reagent; SC; CSF/CNS (striatum); Mice (transgenic); 1007D; 7 days; Controls received mp w/ vehicle; animal info (male, C57BL6J or R6/2 HD tg, 10 weeks old); behavioral testing (rotarod apparatus);.

Q5158: M. Gujrati, *et al.* Multifunctional pH-Sensitive Amino Lipids for siRNA Delivery. *Bioconjug Chem* 2016;27(1):19-35

ALZET Comments: RNA, small interfering/EHCO; PEGylated EHCO; Mice (nude); 14 days; Controls received treated with nonspecific PEGylated EHCO/siGFP nanoparticles (PEGGFP) and non-PEGylated EHCO/HIF-1 α ; cancer; gene therapy, RNA nanoparticle infusion; peptides; "These results indicate that PEGylation can significantly improve the stability of EHCO/siRNA nanoparticles during storage in solution, possibly by preventing the aggregation of the nanoparticles and providing better protection to the siRNA cargo from degradation" (pg 31);.

Q5789: M. C. Didiot, *et al.* Exosome-mediated Delivery of Hydrophobically Modified siRNA for Huntingtin mRNA Silencing. *Mol Ther* 2016;24(10):1836-1847

ALZET Comments: Exosomes; RNA, hydrophobically-modified small interfering (anti-Huntingtin); CSF, artificial; CSF/CNS; Mice; 1007D; 7 days; Controls received mp w/ vehicle; neurodegenerative (Huntingtin); "Pump implantation for the infusion of exosomes and hsiRNA-loaded exosomes have no statistically significant impact on innate immune response in vivo." Therapeutic indication (Huntingtin); Dose (p. 1884);.

Q5754: R. Boukari, *et al.* Membrane progesterone receptor-beta, but not -alpha, in dorsal brain stem establishes sex-specific chemoreflex responses and reduces apnea frequency in adult mice. *J Appl Physiol* (1985) 2016;121(3):781-791

ALZET Comments: RNA, small interfering; CSF, artificial; CSF/CNS (fourth ventricle); Mice; 1002; 2 weeks, 14 days; Controls received mp w/ vehicle; animal info (3-4 months old); antisense (siRNA against MPR-a or mPR-b); "Previous studies in adult mice showed that 2-wk infusion of nonviral siRNA in the third ventricle ensured efficient (~50%) and widespread (5-6 mm around the infusion point) knockdown of target genes in the brain (48)." Pg 782; Therapeutic indication (Sex steroids, Chemoreflex);.

Q3790: C. C. Tan, *et al.* NLRP1 inflammasome is activated in patients with medial temporal lobe epilepsy and contributes to neuronal pyroptosis in amygdala kindling-induced rat model. *Journal of Neuroinflammation* 2015;12(U1-U12)

ALZET Comments: RNA, small interfering; CSF/CNS (third ventricle); Rat; 2006; 6 weeks; Control animals received mp w/ control siRNA in aCSF; animal info (Sprague Dawley, 260-300 g); long-term study;.

Q4110: J. Song, *et al.* The effect of ASK1 on vascular permeability and edema formation in cerebral ischemia. *Brain Research* 2015;1595(143-155)

ALZET Comments: RNA, ASK1-small interfering; siPORTNeoFX; CSF/CNS; Mice; 3 days; Controls received mp w/ scrambled si-RNA; animal info (male, C57BL6, 8-12 weeks old); ischemia (transient focal cerebral);.



Q4976: F. A. Oladosu, *et al.* Mu Opioid Splice Variant MOR-1K Contributes to the Development of Opioid-Induced Hyperalgesia. *PLoS One* 2015;10(8):e0135711

ALZET Comments: RNA, small interfering 13 antisense; CSF, artificial; CSF/CNS (intrathecal); Mice; 7 days; Controls received mp w/ sense siRNA; animal info (C57BL6J or CXB7/ByJ, 8-12 weeks old, 20-30g);

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;

Q4386: S. Cuevas, *et al.* Role of Nuclear Factor Erythroid 2-Related Factor 2 in the Oxidative Stress-Dependent Hypertension Associated With the Depletion of DJ-1. *HYPERTENSION* 2015;65(1251-U173)

ALZET Comments: RNA, small interfering (Drd2-); RNA, small interfering (DJ-1-); TransIT; Kidney (subcapsular space); Mice; 1007D; 7 days; Controls received mp w/ non-silencing RNA; animal info (male, C57BL6J, uninephrectomized); used PE tubing #0007701 with surgical glue; pump sutured to abdominal wall;

Q4214: C. J. Yu, *et al.* BACE1 RNA interference improves spatial memory and attenuates Abeta burden in a streptozotocin-induced tau hyperphosphorylated rat model. *Cell Biochemistry and Function* 2014;32(590-596)

ALZET Comments: Okadaic acid; RNA, small interfering; SC; Rat; 1004; 16 weeks; Controls received mp w/ saline; animal info (Sprague Dawley, 11-12.5 months); pumps replaced every 4 weeks; neurodegenerative (Alzheimer's disease); behavioral testing (morris water maze); long-term study;

Q4200: Y. Yang, *et al.* Sestrin2 Decreases Renal Oxidative Stress, Lowers Blood Pressure, and Mediates Dopamine D(2) Receptor-Induced Inhibition of Reactive Oxygen Species Production. *Hypertension* 2014;64(825-+)

ALZET Comments: RNA, small interfering (sestrin2); Kidney (renal subcapsule); Mice; 1007D; 7 days; Controls received mp w/ control RNA; animal info (C57BL6J); good methods (supplement, pg 2); post op. care (buprenorphine); replacement therapy (uninephrectomy); used ALZET PE tubing; bp measured using catheter;

Q4176: L. Weissmann, *et al.* IKKepsilon Is Key to Induction of Insulin Resistance in the Hypothalamus, and Its Inhibition Reverses Obesity. *Diabetes* 2014;63(3334-3345)

ALZET Comments: RNA, small interfering; CSF/CNS; Mice; 1007D; 5 days; Controls received mp w/ scrambled RNA; animal info (male, C57BL6J or db/db, 8 weeks old); diabetes; obesity; used Plastics One cannula;

Q3360: M. S. Tan, *et al.* IL12/23 p40 Inhibition Ameliorates Alzheimer's Disease-Associated Neuropathology and Spatial Memory in SAMP8 Mice. *JOURNAL OF ALZHEIMERS DISEASE* 2014;38(3):633-646

ALZET Comments: RNA, small interfering p40; CSF, artificial; CSF/CNS (third ventricle); Mice; 1004; 4 weeks; Controls received mp w/ control siRNA, aCSF, control antibody; animal info (male, SAMP8, SAMR1, 3 month, 7 month and 11 month old); functionality of mp verified by increased expression of IL-12 and IL-23; ALZET brain infusion kit 3 used; neurodegenerative (Alzheimer); behavioral testing (Morris water maze);

Q4128: M. S. Tan, *et al.* Amyloid-beta induces NLRP1-dependent neuronal pyroptosis in models of Alzheimer's disease. *Cell Death & Disease* 2014;5(U228-U239)

ALZET Comments: RNA, small interfering NLRP1; RNA, small interfering, NLRP3; RNA, small interfering caspase-1; CSF, artificial; water, RNase-free; CSF/CNS (dorsal third ventricle); Mice (transgenic); 8 weeks; Controls received mp w/ vehicle or control RNA; animal info (male, APP/PS1); functionality of mp verified by knockdown of target gene; ALZET brain infusion kit 3 used; neurodegenerative (Alzheimer's disease); no stress "This dose of NLRP1 siRNA, caspase-1 siRNA or NLRP3 siRNA infusion was well tolerated, and no signs of neurotoxicity including hind-limb paralysis, vocalization, food intake, or neuroanatomical damage were observed in preliminary study." (see pg. 10); behavioral testing (morris water maze); tissue perfusion (dorsal third ventricle); "Our study using this approach of pump-mediated siRNA infusion is efficient in downregulation of NLRP1 mRNA (by about 60%) and protein (by about 50%) levels in APP/PS1 brain. And the treatment with control siRNA did not alter cerebral NLRP1 mRNA and protein levels compared with No siRNA-treated APP/PS1 mice, excluding an effect of pump-mediated infusion on NLRP1 expression levels." pg 8;



Q3627: A. Sehgal, *et al.* Tissue-specific gene silencing monitored in circulating RNA. RNA-A PUBLICATION OF THE RNA SOCIETY 2014;20(2):143-149

ALZET Comments: RNA, small interfering; PBS; CSF/CNS (striatum); Rat; 7 days; Animal info (male, Sprague Dawley); neurodegenerative (Parkinson's disease); tissue perfusion (striatum); gene therapy; used Plastics One 30g cannula; primed overnight in 37C saline;

Q3784: X. F. Meng, *et al.* Inhibition of the NLRP3 inflammasome provides neuroprotection in rats following amygdala kindling-induced status epilepticus. Journal of Neuroinflammation 2014;11(U1-U12)

ALZET Comments: RNA, small interfering; CSF/CNS (third ventricle); Rat; 2006; 6 weeks; Control animals received mp w/ aCSF; animal info (adult, male, Sprague Dawley, 260-300 g); long-term study;

Q3551: K. P. Loh, *et al.* TRPM4 inhibition promotes angiogenesis after ischemic stroke. PFLUGERS ARCHIV-EUROPEAN JOURNAL OF PHYSIOLOGY 2014;466(3):563-576

ALZET Comments: RNA, small interfering TRPM inhibiting; IV (jugular); Rat; 24 hours; Controls received mp w/ vehicle; animal info (male, Wistar, 300g); ischemia (cerebral); behavioral testing (rotarod apparatus); gene therapy; cardiovascular; TRPM4 aka transient receptor potential melastatin 4;

Q3521: T. Jiang, *et al.* Triggering receptor expressed on myeloid cells 2 knockdown exacerbates aging-related neuroinflammation and cognitive deficiency in senescence-accelerated mouse prone 8 mice. NEUROBIOLOGY OF AGING 2014;35(1243-1251)

ALZET Comments: RNA, small interfering TREM2; CSF, artificial; CSF/CNS (dorsal third ventricle); Mice; 1004; 4 weeks; Controls received mp w/ vehicle or control siRNA; animal info (SAMP8, 6 months old); functionality of mp verified by decrease TREM2 protein levels pg. 1246; ALZET brain infusion kit used; neurodegenerative (Alzheimers); no stress (see pg. 1244); behavioral testing (Morris water maze); tissue perfusion (third ventricle); immunology;

Q4928: A. Ewe, *et al.* Storage stability of optimal liposome-polyethylenimine complexes (lipopolyplexes) for DNA or siRNA delivery. Acta Biomater 2014;10(6):2663-73

ALZET Comments: DNA, RNA, small interfering; Lipopolyplexes, (PEI F25-LMW, DPPC); SC; CSF/CNS; IP; 6+ weeks; cancer (mamma carcinoma, prostate carcinoma, colon carcinoma); PEI F25-LMW aka Polyethylenimine F-25 Low molecular weight; DPPC aka dipalmitoyl-phosphatidyl-choline;

Q3181: T. L. Briones, *et al.* Chronic neuroinflammation and cognitive impairment following transient global cerebral ischemia: role of fractalkine/CX3CR1 signaling. Journal of Neuroinflammation 2014;11(1):U1-U13

ALZET Comments: RNA, small interfering CX3CR1; RNA, scrambled; Transfection medium; CSF/CNS; Rat; 1002; 28 days; Animal info (male, Wistar, 350-375g); ALZET brain infusion kit 2 used; ischemia (cerebral); post op. care (heating pad); behavioral testing (Morris water maze); gene therapy; immunology; Cannula stabilized using dental cement. Pumps primed in sterile saline 37C overnight.

Q3405: I. Armando, *et al.* Dopamine D3 receptor inhibits the ubiquitin-specific peptidase 48 to promote NHE3 degradation. FASEB Journal 2014;28(1422-1434)

ALZET Comments: GR103691; RNA, small interfering; Transfection reagent (TransIT); SC; kidney (subcapsular space); Mice; 1007D; 4 days; 7 days; Controls received mp w/ vehicle or nonsilencing "mock siRNA"; animal info (male, C57BL6J, adult); tissue perfusion (subcapsular space; kidney); gene therapy; antihypertensive; GR103691 is a D3R antagonist; used PE tubing #0007701; pump sutured to abdominal wall; surgical glue applied at puncture site to hold catheter tubing in place and to prevent leakage;

Q4773: A. S. b. Alexander Ewe a, Sabine Barnert c, Rolf Schubert c, Achim Temmed, Udo Bakowsky e,, *et al.* Storage stability of optimal liposome–polyethylenimine complexes (lipopolyplexes) for DNA or siRNA delivery. Acta Biomateriala 2014;10):2663-2673



ALZET Comments: DNA, RNA, small interfering; Lipopolyplexes, (PEI F25-LMW, DPPC); SC; 6+ weeks; cancer (mamma carcinoma, prostate carcinoma, colon carcinoma); PEI F25-LMW aka Polyethylenimine F-25 Low molecular weight; DPPC aka dipalmitoyl-phosphatidyl-choline.

Q2471: V. M. Villar, *et al.* Sorting Nexin 1 Loss Results in D(5) Dopamine Receptor Dysfunction in Human Renal Proximal Tubule Cells and Hypertension in Mice. *Journal of Biological Chemistry* 2013;288(1):152-163

ALZET Comments: RNA, small interfering; Kidney; Mice; 7 days; Control animals received mp w/ vehicle or non-silencing mock siRNA; animal info (C57BL/6, BALB/c, nephrectomized, adult, male); Snx-1 specific siRNA; infusion rate of 0.5 ul/hr; tissue perfusion (kidney); PE catheter used.

Q2961: V. A. M. Villar, *et al.* Novel role of sorting nexin 5 in renal D(1) dopamine receptor trafficking and function: implications for hypertension. *FASEB Journal* 2013;27(5):1808-1819

ALZET Comments: Ringer's solution, lactated; RNA, small interfering, Snx-5, non-silencing; SC; Rat; 5, 7 days; Controls received mp w/vehicle or (non-silencing mock siRNA); animal info (spontaneously hypertensive rats (SHR)); antihypertensive; mp used to infuse sorting nexin 5 (SNX5). It decreases sodium excretion, and elevates systolic blood pressure. SNX5 regulated D1 receptor, which has an important therapeutic implication in the management of essential hypertension;

Q2676: F. Tao, *et al.* Role of Neuregulin-1/ErbB Signaling in Stem Cell Therapy for Spinal Cord Injury-Induced Chronic Neuropathic Pain. *Stem Cells* 2013;31(1):83-91

ALZET Comments: RNA, small interfering; CSF/CNS (intrathecal); Rat; 2004; 28 days; Control animals received mp w/ non target RNA; animal info (Long Evans, female, 250 g); NRG1 siRNA; spinal cord injury.

Q3326: J. Song, *et al.* Apoptosis signal-regulating kinase 1 (ASK1) is linked to neural stem cell differentiation after ischemic brain injury. *EXPERIMENTAL AND MOLECULAR MEDICINE* 2013;45(1):U28-U34

ALZET Comments: RNA, Apoptosis signaling kinase 1-small interfering; Transfection medium, siPORT NeoFX; CSF/CNS; Mice; 3 days; Controls received mp w/ vehicle and scrambled siRNA (negative control) or siRNA against glyceraldehyde 3-phosphate dehydrogenase (positive control); animal info (male, C57BL6, 8-12 weeks old); ischemia (transient focal cerebral); immunology;

R0314: S. Raghunathan, *et al.* Therapeutic implications of small interfering RNA in cardiovascular diseases. *FUNDAMENTAL & CLINICAL PHARMACOLOGY* 2013;27(1):1-20

ALZET Comments: RNA, small interfering; SC; TACE siRNA; "SHRs were infused with previously validated TACE siRNA through subcutaneously implanted ALZET osmotic minipumps in the back of the animals. This resulted in systemic knockdown of TACE expression and decreased the cross-sectional width of cardiomyocytes by 38% which successfully stopped the advance of cardiac hypertrophy evidenced by M-mode echocardiography and gross pathology studies." pg 12.

Q3169: G. Pignataro, *et al.* nNOS and p-ERK involvement in the neuroprotection exerted by remote postconditioning in rats subjected to transient middle cerebral artery occlusion. *NEUROBIOLOGY OF DISEASE* 2013;54(1):105-114

ALZET Comments: RNA, small interfering, nNOS blocking; CSF/CNS; Rat; 48 hours; Controls received sham surgery, no ischemia and control siRNA (non nNOS blocking); animal info (male, Sprague Dawley, 250-300g); ischemia (cardiac; femoral artery);

Q6737: N. Niimi, *et al.* Therapeutic gene silencing with siRNA for IL-23 but not for IL-17 suppresses the development of experimental autoimmune encephalomyelitis in rats. *J Neuroimmunol* 2013;254(1-2):39-45

ALZET Comments: RNA, small interfering; Saline; SC; IP; Rat; 2002; 2004; 2 weeks; 4 weeks; Dose (30 µg/day); Controls received mp w/ vehicle; animal info (Lewis (LEW) rats, 8-12 weeks of age);

Q3582: N. Niimi, *et al.* Minocycline suppresses experimental autoimmune encephalomyelitis by increasing tissue inhibitors of metalloproteinases. *NEUROPATHOLOGY* 2013;33(6):612-620

ALZET Comments: RNA, small interfering; IP; Rat; 2002; 2004; 2 weeks; 4 weeks; Animal info (Lewis, 8-12 weeks old, experimental autoimmune encephalomyelitis); neurodegenerative (multiple sclerosis); gene therapy; immunology;



Q3254: O. T. W. Ng, *et al.* Small Interfering RNA Specific for N-Methyl-D-Aspartate Receptor 2B Offers Neuroprotection to Dopamine Neurons through Activation of MAP Kinase. *NEURO SIGNALS* 2013;21(1-2):42-54

ALZET Comments: RNA, small interfering; Saline, SilentFect; CSF/CNS (striatum); Rat; 2001; 1 week; Animal info (male, Sprague Dawley, 200-250g); ALZET brain infusion kit 2 used; comparison of single injection vs mp "In summary, single injection of siRNA into PD models showed no significant effect in ameliorating the motor syndrome and protection in TH-positive neurons. However, continuous infusion of NR2B-specific siRNA can effectively ameliorate the motor symptoms, attenuate the dopaminergic cell loss in the striatum and SN regions, and promote the ERK1/2 signaling pathway in parkinsonian models." pg53; neurodegenerative (Parkinson's disease); "Moreover, by using the osmotic minipump connecting with canals, this method can be easily transplanted into patients, and allow the siRNA to be infused to the target site directly at a steady and slow rate. The direct delivery has the advantages of reducing any undesired systemic side effects and lowering the dose requirement for efficacy" pg 53 ; Primed at 37C saline overnight.

Q2638: D. Kesanakurti, *et al.* Role of MMP-2 in the regulation of IL-6/Stat3 survival signaling via interaction with alpha5beta1 integrin in glioma. *ONCOGENE* 2013;32(3):327-340

ALZET Comments: Plasmid, scrambled vector; RNA, small interfering; Mice (nude); 2004; Animal info (nu/nu, 4-6 wks old, athymic); MMP-2 siRNA.

Q3335: K. J. Cho, *et al.* Apoptosis signal-regulating kinase-1 aggravates ROS-mediated striatal degeneration in 3-nitropropionic acid-infused mice. *Biochemical and Biophysical Research Communications* 2013;441(2):280-285

ALZET Comments: RNA, small interfering, ASK1; Nitropropanoic acid, 3-; Saline; CSF/CNS (striatum); SC; Mice (transgenic); 1007D; 7 days; Controls received mp w/ vehicle; animal info (male, SOD1-tg); functionality of mp verified by Western blotting; Multiple pumps per animal (2); neurodegenerative (apoptotic striatal degeneration); behavioral testing (rotarod test); tissue perfusion (striatum); 3-NP delivered SC, ASK1-siRNA delivered CSF/CNS.

Q2025: Y. R. Zhang, *et al.* Deficient Dopamine D₂ Receptor Function Causes Renal Inflammation Independently of High Blood Pressure. *PLoS One* 2012;7(6):U180-U190

ALZET Comments: Apocynin; RNA, small interfering, Drd2; SC; IA (intrarenal); Mice; 1007D; 7 days; Controls received mp w/ vehicle; animal info (adult, male, D2 receptor deficient, uniphrectomy); enzyme inhibitor (NADPH oxidase); "Surgical glue was applied at the puncture site to hold the tubing in place and prevent extra-renal leakage. The osmotic pump was sutured to the abdominal wall to prevent excessive movement of the pump for the duration of the study." pg e38745; incorrectly listed ALZET Catheter 0007701 as PE tubing (polyurethane).

Q2731: D. B. Yu, *et al.* Single-Stranded RNAs Use RNAi to Potently and Allele-Selectively Inhibit Mutant Huntingtin Expression. *Cell* 2012;150(5):895-908

ALZET Comments: RNA, small interfering, single stranded; PBS, sterile; CSF/CNS; Mice; 2002; 2004; 28 days; Control animals received mp w/ vehicle; animal info (HdhQ150); cyanoacrylate adhesive used; neurodegenerative (Huntington's disease).

Q2832: Y. Yang, *et al.* Paraonase 2 decreases renal reactive oxygen species production, lowers blood pressure, and mediates dopamine D(2) receptor-induced inhibition of NADPH oxidase. *Free Radical Biology and Medicine* 2012;53(3):437-446

ALZET Comments: RNA, small interfering, D2R; RNA, small interfering, PON2; Kidney (renal capsule); Mice; 1007D; 7 days; Control animals received mp w/ nonsilencing control RNA; animal info (D2R deficient, 6-8 mo old, uniphrectomy); PE tubing used (item #0007701); "The body of the minipump was placed in the area previously occupied by the kidney that was removed; stabilization was achieved by suturing (4-0 ethilon) the minipump to the lateral abdominal musculature close to it."; tissue perfusion (renal capsule).

Q2072: C. Reufsteck, *et al.* Silencing of skeletal metastasis-associated genes impairs migration of breast cancer cells and reduces osteolytic bone lesions. *CLINICAL & EXPERIMENTAL METASTASIS* 2012;29(5):441-456

ALZET Comments: RNA, small interfering, bone sialoprotein; RNA, small, interfering, osteopontin; SC; Rat (nude); 4 weeks; Controls received mp w/ nonsense control siRNA; animal info (male, nu/nu, 6-8 wks old); pumps replaced after 2 weeks; cancer.



- Q2696:** Y. Matsumoto, *et al.* Characterization of fibrosis-promoting factors and siRNA-mediated therapies in C-protein-induced experimental autoimmune myocarditis. *Cellular Immunology* 2012;279(1):70-77
ALZET Comments: RNA, small interfering, MMP-2; RNA, small interfering, MMP-9; IP; Rat; 2004; 4 weeks; Animal info (male, female, 8-12 wks old, Lewis).
- Q2167:** B. A. Dyck, *et al.* Behavioral effects of non-viral mediated RNA interference of synapsin II in the medial prefrontal cortex of the rat. *SCHIZOPHRENIA RESEARCH* 2012;137(1-3):32-38
ALZET Comments: RNA, small interfering; Water, sterile; CSF/CNS (medial prefrontal cortex); Rat; 2002; 2 weeks; Controls received mp w/ artificial CSF; animal info (Sprague Dawley, male, 250-300 g); bilateral infusion using vinyl tubing and two Plastics One cannulae; schematic of pump plus cannula (fig 5); cocktail of 4 synapsin II siRNAs.
- Q1903:** S. Cuevas, *et al.* Role of Renal DJ-1 in the Pathogenesis of Hypertension Associated With Increased Reactive Oxygen Species Production. *Hypertension* 2012;59(2):446-452
ALZET Comments: RNA, small interfering, DJ-1; In vivo transfection agent; Kidney; Mice; 1007D; 7 days; Controls received mp w/ non-silencing RNA; animal info (F1 hybrid; wt, 6-8 mo old, uninephrectomized, adult, male, C57BL/6J); ALZET polyethylene tubing set used (0007701); tissue perfusion (kidney); "The osmotic pump was sutured to the abdominal wall to prevent excessive movement of the pump" pg 447.
- Q1388:** Y. Wang, *et al.* Monocarboxylate Transporter 2 and Stroke Severity in a Rodent Model of Sleep Apnea. *Journal of Neuroscience* 2011;31(28):10241-10248
ALZET Comments: RNA, small interfering; oligonucleotide, scrambled; cinnamate, cyano-4 hydroxy,; chloromercuribenzene sulfonate, p-; Rat; 1002; 5 days; 72 hours; Controls received mp w/ scrambled nucleotide, vehicle; animal info (MCAO, male, Sprague Dawley, 200-225 g); ALZET brain infusion kit used; antisense (MCT2); compounds also known as 4-CN and pCMBS.
- Q1069:** D. varez-Fischer, *et al.* Engrailed protects mouse midbrain dopaminergic neurons against mitochondrial complex I insults. *Nature Neuroscience* 2011;14(10):1260-U182
ALZET Comments: Engrailed-1; engrailed-2; RNA, small interfering Ndufs1; Colominic acid; saline; CSF/CNS (substantia nigra); Mice; 1002; 1003D; 3, 14 days; Controls received mp w/ vehicle and control siRNA; animal info (C57BL/6, 8-9 wks old, male); neurodegenerative (Parkinson's disease).
- Q1645:** J. Odenbach, *et al.* MMP-2 Mediates Angiotensin II-Induced Hypertension Under the Transcriptional Control of MMP-7 and TACE. *Hypertension* 2011;57(1):123-U342
ALZET Comments: Angiotensin II; RNA, small interfering, luciferase; SC; Mice; Rat; 11, 14 days; Controls received mp w/ PBS; animal info (male, C57BL/6; Sprague Dawley); blood pressure measured via tail cuff.
- Q1640:** A. K. Nalla, *et al.* Suppression of uPA and uPAR blocks radiation-induced MCP-1 mediated recruitment of endothelial cells in meningioma. *Cellular Signalling* 2011;23(8):1299-1310
ALZET Comments: Plasmid, scrambled vector; plasmid, bi-cistronic, RNA, small interfering; Mice (nude); 2001; Animal info (4-6 wks old).
- Q1163:** J. E. Kim, *et al.* The P2X7 receptor-pannexin-1 complex decreases muscarinic acetylcholine receptor-mediated seizure susceptibility in mice. *Journal of Clinical Investigation* 2011;121(5):2037-2047
ALZET Comments: BzATP; ATP, oxidized; A-438079; A-740003; RNA, small interfering, Panx1, mouse; DMSO; saline; CSF/CNS; Mice; 1002; 1003D; 1007D; 1 week; 3 days; Controls received mp w/ saline or control siRNA; animal info (P2X7-/-, wt, male, 60-90 days old); ALZET brain infusion kit 3 used; polyurethane catheters used.
- Q1467:** H. W. Kim, *et al.* Apoptosis signal-regulating kinase 1 (Ask1) targeted small interfering RNA on ischemic neuronal cell death. *Brain Research* 2011;1412(;):73-78
ALZET Comments: RNA, small interfering, Ask1; CSF/CNS; Mice; 3 days; Controls received mp w/ scramble siRNA; animal info (male, C57BL/6J, 25-30 g, 3 mo old); ischemia.



Q1161: D. Kesanakurti, *et al.* Suppression of MMP-2 Attenuates TNF-alpha Induced NF-kappa B Activation and Leads to JNK Mediated Cell Death in Glioma. PLoS One 2011;6(5):U239-U252

ALZET Comments: RNA, small interfering, MMP-2; CSF/CNS (intratumorally); Mice (nude); 2004; Animal info (athymic, female, nu/nu, 4-6 wks old); cancer (glioma); tissue perfusion (intratumorally); MMP2 siRNA.

Q0341: C. Verpelli, *et al.* Anti-Angiogenic Therapy Induces Integrin-Linked Kinase 1 Up-Regulation in a Mouse Model of Glioblastoma. PLoS One 2010;5(10):U70-U81

ALZET Comments: PF4-DLR; RNA, small interfering; PBS; SC; CSF/CNS (intrathecal); Mice (nude); 2004; 10, 20 days; Controls received mp w/ vehicle; animal info (6 wks old, nude); peptides; ILK1-siRNA.

Q0795: A. K. Nalla, *et al.* Suppression of uPAR Retards Radiation-Induced Invasion and Migration Mediated by Integrin beta-1/FAK Signaling in Medulloblastoma. PLoS One 2010;5(9):U240-U255

ALZET Comments: RNA, small interfering, uPAR; Mice (nude); 2001; 1 week; siRNA is within a plasmid vector (pU vector).

Q0357: A. L. McCormack, *et al.* alpha-Synuclein Suppression by Targeted Small Interfering RNA in the Primate Substantia Nigra. PLoS One 2010;5(8):U312-U319

ALZET Comments: RNA, small interfering; PBS; CSF/CNS (substantia nigra); Monkey (squirrel monkey); 2004; 4 weeks; Controls received mp w/ control siRNA; animal info (feral, adult); alpha synuclein siRNA.

Q1194: M. B. Laursen, *et al.* Utilization of unlocked nucleic acid (UNA) to enhance siRNA performance in vitro and in vivo. Molecular BioSystems 2010;6(5):862-870

ALZET Comments: RNA, small interfering, unlocked nucleic acid modified; SC; Mice (nude); Animal info (NMRI, nu/nu, 8-10 wks old).

Q0606: T. Kato, *et al.* Efficient delivery of liposome-mediated MGMT-siRNA reinforces the cytotoxicity of temozolomide in GBM-initiating cells. Gene Therapy 2010;17(11):1363-1371

ALZET Comments: RNA, small interfering; Mice (NOD/SCID); 1007D; 1 week; Animal info (6 wks old, female NOD-SCID); MGMT-siRNA/LipoTrust complex; O6-methylguanine- DNA methyltransferase; incorrectly stated 1003D pump; cancer.

Q1609: J. G. Cui, *et al.* Agrin Downregulation Induced by Nerve Injury Contributes to Neuropathic Pain. Journal of Neuroscience 2010;30(45):15286-15297

ALZET Comments: RNA, small interfering, agrin; CSF/CNS (intrathecal); Rat; 2ML2; 4 hours; Animal info (Sprague Dawley, male, 250-280 g); PE10 catheter used.

Q0426: K. J. Cho, *et al.* Decisive role of apurinic/aprimidinic endonuclease/Ref-1 in initiation of cell death. MOLECULAR AND CELLULAR NEUROSCIENCE 2010;45(3):267-276

ALZET Comments: Antibody, anti-APE/Ref-1, rabbit; RNA, small interfering; Saline; CSF/CNS (hippocampus); Mice; 1003D; 3 days; Controls received mp w/ vehicle; animal info (3 months old, male, ICR, 35-40 g); siRNA against APE/Ref-1.

Q0609: Q. M. Chen, *et al.* Lipophilic siRNAs mediate efficient gene silencing in oligodendrocytes with direct CNS delivery. JOURNAL OF CONTROLLED RELEASE 2010;144(2):227-232

ALZET Comments: RNA, small interfering; cholesterol-conjugate siRNA; PBS; CSF/CNS (corpus callosum); Rat; 2ML1; 7 days; Controls received mp w/ vehicle; gene therapy; animal info (Male Sprague-Dawley); tissue perfusion (parenchyma); Agents are CNPase siRNA, Cholesterol-CNPas siRNA, Cholesterol-Luciferase siRNA.

Q5555: Stealth RNAi™ siRNA brain infusion. Biotechniques Protocol Guide 2010;43

ALZET Comments: RNA, small interfering; Saline; CSF/CNS (lateral ventricle); Mouse; 1007D, 1002; 2 weeks; Controls received mp w/ vehicle (Stealth RNAi™ siRNA Negative Control, BLOCK-iT™ Alexa Fluor® 555 Red Fluorescent Control); ALZET brain infusion kit used; Dose (4.25 mg/mL).

P9654: J. S. Wu, *et al.* Ligand-Activated Peroxisome Proliferator-Activated Receptor-gamma; Protects Against Ischemic Cerebral Infarction and Neuronal Apoptosis by 14-3-3 ϵ Upregulation. Circulation 2009;119(8):1124-1134



ALZET Comments: Peroxisome proliferator-activated receptor, gamma; RNA, small interfering; DMSO; CSF/CNS; Rat; 1007D; 72 hours; Controls received mp w/vehicle; ALZET brain infusion kit 2 used; cyanoacrylate adhesive; schemia; 14-3-3 epsilon siRNA.

Q0213: X. Wang, *et al.* Tumor Necrosis Factor- α -Converting Enzyme Is a Key Regulator of Agonist-Induced Cardiac Hypertrophy and Fibrosis. *Hypertension* 2009;54(3):575-582

ALZET Comments: RNA, small interfering; angiotensin II; SC; Rat; mice; 12, 14 days; Controls received mp w/ PBS; animal info (SHR, C57BL/6J male); TACE, Luc siRNA.

Q0517: X. Wang, *et al.* Matrix Metalloproteinase-7 and ADAM-12 (a Disintegrin and Metalloproteinase-12) Define a Signaling Axis in Agonist-Induced Hypertension and Cardiac Hypertrophy. *Circulation* 2009;119(18):2480-U112

ALZET Comments: Oligonucleotide, antisense; oligonucleotide, scrambled; RNA, small interfering; angiotensin II; PBS; SC; Mice; Rat; 14 days; Controls received mp w/ vehicle; animal info (MMP-7^{-/-}, wt, 12 wks old; SHR, WKY, Sprague Dawley, 250-350 g); peptides; antisense (MMP-7); multiple pumps per animal (2); blood pressure measured indirectly using a computerized tail cuff plethysmography system.

P9656: M. Snapyan, *et al.* Vasculature Guides Migrating Neuronal Precursors in the Adult Mammalian Forebrain via Brain-Derived Neurotrophic Factor Signaling. *Journal of Neuroscience* 2009;29(13):4172-4188

ALZET Comments: Brain-derived neurotrophic factor; immunoglobulin-G-Fe; RNA, small interfering; TrkB-Fr; NaCl; IA (carotid); CSF/CNS (rostral migratory, system); Mice; 1007D; 7 days; Controls received mp w/control siRNA; animal info (2-3 mo old C57BL/J6); brain tissue distribution; ALZET mouse jugular catheter used; heparin added to BDNF.

Q0383: W. Querbes, *et al.* Direct CNS Delivery of siRNA Mediates Robust Silencing in Oligodendrocytes. *OLIGONUCLEOTIDES* 2009;19(1):23-29

ALZET Comments: RNA, small interfering; CSF/CNS (sorsus callosum); Rat; 2ML1; 2ML2; 3-7 days; Controls received mp w/PBS; animal info (male, Sprague Dawley); Plastics One cannula used.

P9944: A. Agrawal, *et al.* Functional Delivery of siRNA in Mice Using Dendriworms. *ACS Nano* 2009;3(9):2495-2504

ALZET Comments: RNA, small interfering; epidermal growth factor receptor; dendriworm, dye-labeled; RNA, small interfering, GFP, dendriworm, dye-labeled; CSF/CNS (intratumoral); Mice; 3, 7 days; Tissue perfusion (tumor); cancer (glioblastoma); incorrectly stated pump model 2007; Plastics One cannula used; animal info (Swiss Webster).

P9222: M. Watabe, *et al.* A dominant role of GTRAP3-18 in neuronal glutathione synthesis. *Journal of Neuroscience* 2008;28(38):9404-9413

ALZET Comments: RNA, small interfering; cyclodextrin, methyl-B-; CSF, artificial; CSF/CNS; Mice; 1 week; 5 days; 48 hours; Controls received mp w/ vehicle or nonsilencing RNA; animal info (male, C57BL/6, 8 wks old); neurodegenerative (Parkinson's, Alzheimer's); siRNA of GTRAP 3-18 (glutamate transport associated protein) and EAAC1 (excitatory amino acid carrier 1); aCSF recipe.

P8852: H. Y. Wang, *et al.* Therapeutic gene silencing delivered by a chemically modified small interfering RNA against mutant SOD1 slows amyotrophic lateral sclerosis progression. *Journal of Biological Chemistry* 2008;283(23):15845-15852

ALZET Comments: RNA, small interfering, modified; RNA, small interfering; PBS; CSF/CNS (intrathecal, subarachnoid space); Mice (transgenic); 1007D; 2004; 7, 28 days; 72 hours; Controls received mp w/ vehicle; functionality of mp verified by residual volume; dose-response (Fig. 3); no stress (see pg. 15846, 15849); stability verified by 28 days in vivo (see Fig. 2); half-life (p. 15846) "short"; gene therapy; brain tissue distribution; animal info (SOD1G93A Tg); neurodegenerative (ALS); mp + catheter positioning confirmed; Target (SOD1); "when infused at disease onset at the therapeutic dose for 4 weeks, this siRNA slows disease progression without detectable adverse effects." The catheter was implanted between the L5 and L6 vertebra and connected to a primed Alzet osmotic pump with the PE50 tube. The catheter was stitched to the surface muscle, and the Alzet osmotic pumps were placed under the skin on the back of the mouse.

P9150: S. Sugiyama, *et al.* Experience-dependent transfer of Otx2 homeoprotein into the visual cortex activates postnatal plasticity. *Cell* 2008;134(3):508-520



ALZET Comments: Otx2, protein; antibody, inhibitory otx2; RNA, small interfering, penetratin coupled; CSF/CNS (visual cortex); Mice (transgenic); 1007D; 7 days; Controls received mp w/ vehicle; animal info (Otx2 KO); Otx2 is a homeoprotein.

P9377: K. Miyoshi, *et al.* Interleukin-18-Mediated Microglia/Astrocyte Interaction in the Spinal Cord Enhances Neuropathic Pain Processing after Nerve Injury. *Journal of Neuroscience* 2008;28(48):12775-12787

ALZET Comments: Immunoglobulin G, goat; antibody, anti-interleukin-18; antibody, anti-leukin-18 receptor; interleukin-18 binding protein; RNA, small interfering; PBS; CSF/CNS (intrathecal); Rat; mice; 1003D; 2001; 3, 7 days; Controls received mp w/ vehicle or IgG or negative siRNA; peptides; animal info (male, Sprague Dawley, 200-250 g.; male, C57BL/6 wt, IL-18 -/-, 25-30 g.); siRNA targets TLR4 (toll-like receptor 4) or negative siRNA; behavioral testing (mechanical hypersensitivity, tactile allodynia).

P9665: J. Lewis, *et al.* In vivo silencing of alpha-synuclein using naked siRNA. *Molecular Neurodegeneration* 2008;3(;):U1-U10

ALZET Comments: RNA; small interfering; Luciferase; CSF/CNS (hippocampus); Mice; 1002; 15 days; Controls received mp w/PBS; ALZET brain infusion kit 3 used; cyanoacrylate adhesive; animal info (2 mo old, C57 BL/6 female).

P9320: A. De Toni, *et al.* Regulation of survival in adult hippocampal and glioblastoma stem cell lineages by the homeodomain-only protein HOP. *Neural Development* 2008;3(;):U2-U13

ALZET Comments: Epidermal growth factor; fibroblast growth factor, basic; RNA, small interfering; Saline, physiological; CSF/CNS; CSF/CNS (dentate gyrus); Rat; 1003D; 3 days; Controls received mp w/ control siRNA; cancer (glioblastoma); peptides; animal info (Swiss, HOP -/-, wt, adult); HOP or control siRNA was coupled to the cell permeant peptide, penetratin.

P8704: P. Tummalapalli, *et al.* RNAi-mediated abrogation of cathepsin B and MMP-9 gene expression in a malignant meningioma cell line leads to decreased tumor growth, invasion and angiogenesis. *INTERNATIONAL JOURNAL OF ONCOLOGY* 2007;31(5):1039-1050

ALZET Comments: RNA, small interfering; Mice (nude); 3-4 weeks; Controls received no treatment; cancer (meningioma); animal info (athymic, nude); siRNA plasmid vectors targeting cathepsin B and matrix metalloproteinase MMP9.

P8622: Y. Senechal, *et al.* Amyloid precursor protein knockdown by siRNA impairs spontaneous alternation in adult mice. *Journal of Neurochemistry* 2007;102(6):1928-1940

ALZET Comments: RNA, small interfering; RNAi buffer, isotonic; CSF/CNS (dorsal third ventricle); Mice; 1002; 2 weeks; Controls received mp w/ vehicle or control siRNA; no stress (see pg. 1934); animal info (male, C57BL/6JICO, 10-12 weeks old, 23-26 g); neurodegenerative (Alzheimer's disease); siRNA targets: amyloid precursor protein (APP), GFP, APP-mismatch, or non targeting control.

P8305: O. R. Mook, *et al.* Evaluation of locked nucleic acid-modified small interfering RNA in vitro and in vivo. *MOLECULAR CANCER THERAPEUTICS* 2007;6(3):833-843

ALZET Comments: RNA, small interfering; RNA, small interfering, LNA-modified; Radio-isotopes, 3H-; SC; Mice (nude); 1007D; 7 days; 48 hours; Controls received mp w/ mismatch siRNA or saline; comparison of IV injections vs. mp; stability verified by incubation in mouse serum; half-life (p. 837) increased in LNA-modified; unmodified completely degraded in <5 hours; cancer (pancreatic); animal info (NMRI nu/nu, 8-10 weeks old); siRNA against RNA polymerase II, enhanced GFP, or mismatch.

P8481: F. Locatelli, *et al.* Fas small interfering RNA reduces motoneuron death in amyotrophic lateral sclerosis mice. *Annals of Neurology* 2007;62(1):81-92

ALZET Comments: RNA, small interfering; CSF/CNS (intrathecal); Mice (transgenic); 2004; 4 weeks; Neurodegenerative (Amyotrophic Lateral Sclerosis); siRNA was used to silence the Fas receptor; animal info (C57BL/6, 90 days old); "Our study demonstrated that Fas silencing is able to interfere with motoneuron degeneration...providing new insights into the ALS pathogenesis and suggesting new possible strategies of molecular therapy...of ALS." p.91.

R0234: M. A. Behlke. Progress towards in vivo use of siRNAs. *MOLECULAR THERAPY* 2006;13(4):644-670



ALZET Comments: RNA, small interfering; CSF/CNS (dorsal third ventricle); Mice; 2 weeks; Half-life (p. 649-650), 0.03-6.5 hrs in mice; brain tissue distribution; ALZET mentioned on pg. 659, ref. 206.

P7393: D. R. Thakker, *et al.* siRNA-mediated knockdown of the serotonin transporter in the adult mouse brain. *Molecular Psychiatry* 2005;10(8):782-789

ALZET Comments: RNA, small interfering; citalopram; RNA, mm; RNAi buffer, isotonic; CSF/CNS (dorsal third); Mice; 1002; 2 weeks; Controls received mp w/ vehicle; gene therapy; downregulation of SERT; animal info (male, BALB/C, 19-29 g); "maximally effective RNAi response requires 2 weeks of siRNA infusion." P. 783; behavioral study.

P7248: S. S. Lakka, *et al.* Specific interference of urokinase-type plasminogen activator receptor and matrix metalloproteinase-9 gene expression induced by double-stranded RNA results in decreased invasion, tumor growth, and angiogenesis in gliomas. *Journal of Biological Chemistry* 2005;280(23):21882-21892

ALZET Comments: RNA, small interfering; RNA, small interfering, uPAR; RNA, small interfering, MMP-9; CSF/CNS; Mice (nude); 1002; 2 weeks; Controls received mp w/ PBS or empty vector; cancer (glioblastoma); siRNA is within a plasmid vector (pUM vector); antiangiogenesis; gene therapy.

P6769: D. R. Thakker, *et al.* Neurochemical and behavioral consequences of widespread gene knockdown in the adult mouse brain by using nonviral RNA interference. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA* 2004;101(49):17270-17275

ALZET Comments: RNA, small interfering; GBR 12909; RNAi buffer; CSF/CNS (dorsal third ventricle); Mice; 1007D; 1002; 1,2 weeks; Controls received mp w/ vehicle; antisense (EGFP, DAT, scrambled sequence); Plastics One cannula used; "Results highlight the temporal effects of siRNA, requiring a constant minipump-mediated infusion in the dorsal third ventricle for a stable and bilateral knockdown of gene expression in the brain." (p. 17275); gene therapy.

P6618: S. S. Lakka, *et al.* Inhibition of cathepsin B and MMP-9 gene expression in glioblastoma cell line via RNA interference reduces tumor cell invasion, tumor growth and angiogenesis. *ONCOGENE* 2004;23(27):4681-4689

ALZET Comments: RNA, small interfering; human cytomegalovirus promoter; Empty vector; CSF/CNS; Mice; 2004; 5 weeks; Cancer (glioblastoma); siRNA against mmp-9 and cathepsin; antiangiogenesis; gene therapy.

P6720: C. S. Gondi, *et al.* RNAi-mediated inhibition of cathepsin B and uPAR leads to decreased cell invasion, angiogenesis and tumor growth in gliomas. *ONCOGENE* 2004;23(8486-8496

ALZET Comments: RNA, small interfering; Virus, EV/SV vector; PBS; CSF/CNS (intratumoral); Mice (nude); Controls received mp w/ vehicle; tissue perfusion (tumor); cancer (glioma); gene therapy; antiangiogenesis; siRNA (cathepsin B); pump model not stated (0.25 ul/hr); "...local intracranial delivery of pcu using mini-osmotic pumps effectively inhibited human malignant glioma growth."

P5995: G. Dorn, *et al.* siRNA relieves chronic neuropathic pain. *NUCLEIC ACIDS RESEARCH* 2004;32(5):1-6

ALZET Comments: RNA, small interfering; oligonucleotide, antisense; Saline; CSF/CNS (intrathecal); Rat; 6-7 days; Controls received mp w/ missense siRNA; no stress (see pg. 4); antisense (P2X₃); gene therapy; siRNA (P2X₃); pain research.

P5821: R. Isacson, *et al.* Lack of efficacy of 'naked' small interfering RNA applied directly to rat brain. *Acta Physiol Scand* 2003;179(2):173-177

ALZET Comments: RNA, small interfering; Water, RNase-free; CSF/CNS (caudate putamen); Rat; 1003D; 3 days; Controls received mp w/ vehicle; siRNA (dopamine D₁ receptors); ALZET brain infusion kit used.