

References on the Use of Cyanoacrylate Adhesive When Administering Agents
With ALZET[®] Osmotic Pumps

P9059 Yang DS, Kumar A, Stavrides P, Peterson J, Peterhoff CM, Pawlik M et al. Neuronal apoptosis and autophagy cross talk in aging PS/APP mice, a model of Alzheimer's disease. *Am J Pathol* 2008; 173(3):665-681. >>> Leupeptin; HEPES, buffer; CSF/CNS; Mice (transgenic); 2004; 2 weeks; Enzyme inhibitor (cysteine protease); cyanoacrylate adhesive; animal info (6 months old, PS/APP, or wt); neurodegenerative (Alzheimer's Disease); pumps primed in sterile saline at 37 degree Celsius for 48 hours.

P8794 Louis SA, Rietze RL, Deleyrolle L, Wagey RE, Thomas TE, Eaves AC et al. Enumeration of neural stem and progenitor cells in the neural colony-forming cell assay. *Stem Cells* 2008; 26(4):988-996. >>> Epidermal growth factor; ara-c; Saline; CSF/CNS; Mice; 1007D; 7 days; Controls received mp w/ vehicle; cyanoacrylate adhesive; animal info (adult, C57BL/6).

P8753 Koch L, Wunderlich FT, Seibler J, Konner AC, Hampel B, Irlenbusch S et al. Central insulin action regulates peripheral glucose and fat metabolism in mice. *J Clin Invest* 2008; 118(6):2132-2147. >>> Leptin; insulin; SC; CSF/CNS; Mice; 1002; 2001; 7 days; Controls received mp w/ vehicle; functionality of mp verified by serum leptin levels; ALZET brain infusion kit 3 used; peptides; cyanoacrylate adhesive; animal info (C57BL/6, wt, IR-d-wb, 10-14 wks old); cannula position confirmed post mortem with methylene blue.

P8751 Ghia JE, Blennerhassett P, Collins SM. Impaired parasympathetic function increases susceptibility to inflammatory bowel disease in a mouse model of depression. *J Clin Invest* 2008; 118(6):2209-2218. >>> Reserpine; Acetic acid; CSF/CNS; Mice; 14 days; Controls received mp w/ vehicle; dose-response (Fig. 1); comparison of IP injection vs. mp; no stress (see pg. 2210); antihypertensive; cyanoacrylate adhesive; animal info (male, female, C57BL/6, op/op, wt, 7-9 wks old, colitis, vagotomy); animal model of depression; plastics one cannula used; PE-60 used.

P8658 Rai KS, Hattiangady B, Shetty AK. Enhanced production and dendritic growth of new dentate granule cells in the middle-aged hippocampus following intracerebroventricular FGF-2 infusions. *Eur J Neurosci* 2007; 26(7):1765-1779. >>> Fibroblast growth factor-2; CSF, artificial; CSF/CNS; Rat; 2002; 14 days; Controls received mp w/ vehicle; functionality of mp verified by residual volume; good methods (p. 1766-1767); ALZET brain infusion kit used; cyanoacrylate adhesive; post op. care (tetracycline); animal info (male, F344, 12 months).

P8640 Meitzen J, Moore IT, Lent K, Brenowitz EA, Perkel DJ. Steroid hormones act transsynaptically within the Forebrain to regulate neuronal phenotype and song stereotypy. *J Neurosci* 2007; 27(44):12045-12057. >>> Dihydrotestosterone; ICI-182,780; estradiol, 17B-; flutamide; DMSO; PEG 300; propanediol, 1, 2-; SC; CSF/CNS (HVC); CSF/CNS (robust nucleus arcopallium); Bird (sparrow); 1007D; 1002; 14, 21 days; Controls received mp w/ vehicle; pumps replaced after 14 days; cyanoacrylate adhesive; animal info (male, Gambel's white crowned, adult); HVC is the proper name for the telencephalic song nucleus; mp placed in custom built backpack strapped to bird's back w/harness made from surgical dressing, and a microcentrifuge tube; "pilot experiments showed that this arrangement kept the pump at its proper operating temperature (37°C), and that the pump retained saline throughout the entire release period." (p. 12047); ICI-182,780 is also known as faslodex.

P8420 Jang S, Lee JH, Choi KR, Kim D, Yoo HS, Oh S. Cytochemical alterations in the rat retina by LPS administration. *Neurochemical Research* 2007; 32(1):1-10. >>> Endotoxin, LPS; sphingosine-1-phosphate; CSF/CNS; Rat; 2ML1; 7 days; Controls received mp w/ saline; cyanoacrylate adhesive; animal info (male, Sprague-Dawley, 260-280g).

P8263 Nishimura M, Takahashi H, Yoshimura M. Upregulation of the brain renin-angiotensin system in rats with chronic renal failure. *ACTA PHYSIOLOGICA* 2007; 189(4):369-377. >>> Candesartan; CSF, artificial; IV (jugular); CSF/CNS; Rat; 2001; 6 days; Controls received mp w/ vehicle; replacement therapy (subtotal nephrectomy, dorsal rhizotomy); antihypertensive; cyanoacrylate adhesive; animal info (male, SHR/Izumo, 8 wks old, 300-350g.); ATI receptor antagonist.

P8242 Hahm JO, Langdon RB, Sur M. Disruption of retinogeniculate afferent segregation by antagonists to NMDA receptors. *Nature* 1991; 351(6327):568-570. >>> MK-801; phosphonovaleric acid, D-2 amino-5-; phosphonovaleric acid, L-2 amino-5-; Saline; CSF/CNS; SC; Ferret; 2001; 1 week; Controls received mp w/ vehicle or inactive isomer; dose-response (fig. 1); cyanoacrylate adhesive used; animal info (2-3 weeks old).

P8134 Figueroa JD, Benton RL, Velazquez I, Torrado AI, Ortiz CM, Hernandez CM et al. Inhibition of EphA7 up-regulation after spinal cord injury reduces apoptosis and promotes locomotor recovery. *J Neurosci Res* 2006; 84(7):1438-1451. >>> Oligonucleotide, missense; oligonucleotide, antisense; oligonucleotide, FITC antisense; CSF/CNS (intrathecal); Rat; 2002; 1, 2, 3, 4 weeks; Controls received mp w/ missense oligonucleotide; antisense (EphA7); brain tissue distribution; cyanoacrylate adhesive; animal info (female, Sprague-Dawley, 200-275g., SCI contusion); mp primed overnight in 37 celsius.

P7948 Porritt MJ, Batchelor PE, Howells DW. Inhibiting BDNF expression by antisense oligonucleotide infusion causes loss of nigral dopaminergic neurons. *Exp Neurol* 2005; 192(1):226-234. >>> Oligonucleotide, sense; oligonucleotide, reverse; oligonucleotide, antisense; oligonucleotide, antisense g-33p; PBS; CSF/CNS (substantia nigra pars compacta); Rat; 2004; 3,10,28 days; Controls received mp w/ vehicle; no stress (see pg. 228); antisense (BDNF); brain tissue distribution; cyanoacrylate adhesive; neurodegenerative (Parkinson's disease); animal info (male, Sprague-Dawley, 210-280 grams, 6-7 weeks old); unprotected oligos, rather than phosphothioate modified oligos, were used to minimize non-specific inflammatory response neurotoxicity; "infusing antisense, sense, or reverse oligonucleotides...did not affect the daily life of the animals. All were able to feed, drink, and move freely around their enclosure." (p. 228).

P7662 Li L, Rema V, Ebner FF. Chronic suppression of activity in barrel field cortex downregulates sensory responses in contralateral barrel field cortex. *J Neurophysiol* 2005; 94(5):3342-3356. >>> Muscimol; Saline, sterile; CSF/CNS (barrel field cortex); CSF/CNS (visual cortex); Rat; 2001; 7 days; Controls received mp w/ vehicle or agent delivered to visual cortex; comparison of acute ICV injection vs. mp; brain tissue distribution; cyanoacrylate adhesive; post op. care (neuropracin); animal info (male, Long-Evans 250-350 g, 2-3 mo old).

P7618 Park JH, Gimbel DA, GrandPre T, Lee JK, Kim JE, Li WW et al. Alzheimer precursor protein interaction with the Nogo-66 receptor reduces amyloid-beta plaque deposition. *J Neurosci* 2006; 26(5):1386-1395. >>> Nogo-66 receptor (310) ecto-Fc; immunoglobulin G, rat; PBS;

CSF/CNS; Mice (transgenic); 2004; 56 days; Controls received mp w/ rat IgG; long-term study; pumps replaced after 28 days; Alzet Brain Infusion Kit 2 used; brain tissue distribution; cyanoacrylate adhesive; neurodegenerative (Alzheimer's disease) animal info (C57BL/6J, APP^{swe}/PSEN or WT, 6-8 months old).

P7544 Daniels DJ, Lenard NR, Etienne CL, Law PY, Roerig SC, Portoghese PS. Opioid-induced tolerance and dependence in mice is modulated by the distance between pharmacophores in a bivalent ligand series. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2005; 102(52):19208-19213. >>> Morphine; DN-20; MDAN-16; MDAN-17; MDAN-18; MDAN-19; MDAN-20; MDAN21; MA19; Saline, sterile; CSF/CNS; Mice; 1003D; 3 days; Controls received mp w/ vehicle; tolerance; dependence; cyanoacrylate adhesive; animal info (male, ICR, 25-30 g); mp primed in 37 C saline overnight; MDAN is mu-delta-agonist-antagonist series to opioid receptors of bivalent ligands that contain different length spacers (16-21 atoms) and pharmacophores derived from naltrindole; MA is mu-agonist monovalent control; DN is delta antagonist monovalent control.

P7478 Banerjee SB, Rajendran R, Dias BG, Ladiwala U, Tole S, Vaidya VA. Recruitment of the Sonic hedgehog signalling cascade in electroconvulsive seizure-mediated regulation of adult rat hippocampal neurogenesis. Eur J Neurosci 2005; 22(7):1570-1580. >>> Cyclopamine; PBS, sterile; cyclodextrin, 2 - hydroxypropyl, beta; CSF/CNS; Rat; 2001; 5 days; Controls received mp w/ vehicle; no stress (see pg. 1573); Alzet brain infusion kit used; cyanoacrylate adhesive; animal info (male, Sprague-Dawley, 200 - 250 g); mp primed overnight in 37C saline; cannula placement confirmed with cresyl violet; sonic hedgehog signalling inhibitor.

P7465 Lenard NR, Roerig SC. Development of antinociceptive tolerance and physical dependence following morphine i.c.v. infusion in mice. Eur J Pharmacol 2005; 527(1-3):71-76. >>> Morphine sulfate; Saline, sterile; CSF/CNS; Mice; 1003D; 3 days; Controls received mp w/ vehicle; comparison of sc pellets vs. mp; no stress (see pg. 73); tolerance; dependence; cyanoacrylate adhesive; post op. care (antibacterial ointment); animal info (male, 28-45 g); mp primed in sterile saline 37C overnight.

P7434 Kawakami K, Kioi M, Liu Q, Kawakami M, Puri RK. Evidence that IL-13R alpha-2 chain in human glioma cells is responsible for the antitumor activity mediated by receptor-directed cytotoxin therapy. J Immunother 2005; 28(3):193-202. >>> Interleukin-13-PE38; interleukin-13Ra2, pME18S-; CSF/CNS (intratumoral); Mice (nude); 1003D; 1007D; 7 days; Controls received mp w/ vehicle or antisense IL-13Ra2 plasmid vector; pumps replaced after 3 days; cancer (glioblastoma); cyanoacrylate adhesive; convection enhanced delivery; IL-13Ra2 cDNA encoding plasmid vector; "the upregulated IL-13 Ra2 chain was successfully targeted with a continuous infusion of IL-13 cytotoxin." (p. 199).

P7245 Mashiko S, Ishihara A, Gomori A, Moriya R, Ito M, Iwaasa H et al. Antiobesity effect of a melanin-concentrating hormone 1 receptor antagonist in diet-induced obese mice. Endocrinology 2005; 146(7):3080-3086. >>> Melanin-concentrating hormone 1 receptor antagonist; Propylene glycol; CSF, artificial; CSF/CNS; CSF/CNS (third ventricle); Mice; 1007D; 2002; 2004; 3, 8 weeks; Controls received mp w/ vehicle; long-term study; pumps replaced after 1 or 4 weeks of vehicle; ALZET brain infusion kit used; peptides; cyanoacrylate adhesive; post op. care (cefamedin); DEXA; cannula placement confirmed by Evans blue dye injection; animal info

(C57BL/6); pumps used in lateral ventricle for one group of animals, and third ventricle for others. Third ventricle group used Plastics One cannulae.

P7229 Gao L, Wang W, Li YL, Schultz HD, Liu DM, Cornish KG et al. Sympathoexcitation by central ANG II: Roles for AT₁ receptor upregulation and NAD(P)H oxidase in RVLM. *American Journal of Physiology-Heart and Circulatory Physiology* 2005; 288(5):H2271-H2279. >>> Angiotensin II; losartan; Saline, isotonic; CSF/CNS; Rabbit; 2001; 7 days; Controls received mp w/ vehicle; cardiovascular; peptides; cyanoacrylate adhesive; cannula position verified by Evans blue dye.

P7212 Radecki DT, Brown LM, Martinez J, Teyler TJ. BDNF protects against stress-induced impairments in spatial learning and memory and LTP. *Hippocampus* 2005; 15(2):246-253. >>> Brain-derived neurotrophic factor, recomb. human; CSF/CNS (hippocampus); Rat; 2002; 14 days; Controls received mp w/ vehicle, or PBS or no treatment; functionality of mp verified by residual volume; no stress (see pg. 248); brain tissue distribution; peptides; cyanoacrylate adhesive; "Direct hippocampal infusion was used in our studies to maximize the targeting of BDNF within the hippocampus." (p. 251) Memory study.

P7137 Baker SA, Baker KA, Hagg T. D3 dopamine receptors do not regulate neurogenesis in the subventricular zone of adult mice. *NEUROBIOLOGY OF DISEASE* 2005; 18(3):523-527. >>> DPAT, 7-hydroxy-U-99194A maleate; Saline; CSF/CNS; CSF/CNS (neostriatum); Rat; mice; 1002; 14 days; Controls received mp w/ vehicle; dose-response; comparison of IP injections vs. mp; stability verified by BrdU labeling; cyanoacrylate adhesive used.

P7117 Luebke AE, Foster PK, Muller CD, Peel AL. Cochlear function and transgene expression in the guinea pig cochlea, using adenovirus and adeno-associated virus-directed gene transfer. *Hum Gene Ther* 2001; 12:773-781. >>> Adenovirus vector; virus, adeno-associated; Perilymph, artificial; Ear (scala tympani); Guinea-pig; 2001; 7 days; Controls received mp w/ vehicle, and no treatment to contralateral ear; no stress (see pg. 778); good methods; gene therapy; cyanoacrylate adhesive; tissue perfusion (scala tympani).

P7078 Kim EY, Shin KM, Jang S, Oh SW. Changes of [³H]muscimol, [³H]flunitrazepam and [³H]MK-801 binding in rat brain by prolonged ventricular infusion of 7-nitroindazole. *Neurochemical Research* 2004; 29(12):2221-2229. >>> Nitroindazole, 7-; CSF/CNS; Rat; 2ML1; 7 days; Controls received mp w/ saline; enzyme inhibitor (nitric oxide synthase); cyanoacrylate adhesive.

P6923 Kawakami K, Kawakami M, Kioi M, Husain SR, Puri RK. Distribution kinetics of targeted cytotoxin in glioma by bolus or convection-enhanced delivery in a murine model. *J Neurosurg* 2004; 101(6):1004-1011. >>> Interleukin-13, PE38; Albumin, human serum; PBS; CSF/CNS; Mice (nude); 1007D; 7 days; Comparison of CNS injections vs. mp; cancer (glioma); ALZET brain infusion kit; cyanoacrylate adhesive.

P6887 Porter JP, Potratz KR. Effect of intracerebroventricular angiotensin II on body weight and food intake in adult rats. *American Journal of Physiology-Regulatory Integrative and Comparative Physiology* 2004; 287(2):R422-R428. >>> Angiotensin II; CSF/CNS; Rat; 2002; 2,5,11 days; Controls received mp w/ sterile saline; ALZET brain infusion kit 2 used; peptides; cyanoacrylate

adhesive; ICV infusion of ANG II was delayed 2 days after surgery by prefilling the catheter between the mp and the cannula with saline instead of ANG II.

P6872 Dolev I, Michaelson DM. A nontransgenic mouse model shows inducible amyloid-beta (A β) peptide deposition and elucidates the role of apolipoprotein E in the amyloid cascade. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2004; 101(38):13909-13914. >>> Thiorphan; CSF, artificial; ascorbic acid; CSF/CNS; Mice; mice (transgenic); 2004; 1 month; 2,4 weeks; Controls received mp w/ vehicle; enzyme inhibitor (neprilysin); ALZET brain infusion kit used; cyanoacrylate adhesive (Loctite 454); post op. care (oxytetracycline); neurodegenerative disease (Alzheimer's).

P6822 Lee JK, Kim JE, Sivula M, Strittmatter SM. Nogo receptor antagonism promotes stroke recovery by enhancing axonal plasticity. J Neurosci 2004; 24(27):6209-6217. >>> Antibody, NgR (310) Ecto-Fc; Immunoglobulin G, rat; PBS; CSF/CNS; Rat; 2ML4; 9 weeks; Controls received mp w/ rat IgG; long-term study; pumps replaced after 28 days; good methods (p. 6210); ALZET brain infusion kit 2 used; peptides; cyanoacrylate adhesive; ischemia (cerebral); Nogo-Nogo receptor (NgR); NgR (310) Ecto-Fc is an IgG fusion protein with a soluble ectodomain fragment of NgG; behavioral study.

P6786 Stein TD, Anders NJ, DeCarli C, Chan SL, Mattson MP, Johnson JA. Neutralization of transthyretin reverses the neuroprotective effects of secreted amyloid precursor protein (APP) in APP_{sw} mice resulting in tau phosphorylation and loss of hippocampal neurons: Support for the amyloid hypothesis. J Neurosci 2004; 24(35):7707-7717. >>> Antibody, anti-transthyretin; immunoglobulin G, goat; CSF, artificial; CSF/CNS (hippocampus); Mice (transgenic); mice; 2002; Controls received mp w/ goat IgG; ALZET Brain Infusion Kit used; brain tissue distribution; cyanoacrylate adhesive; neurodegenerative disease (Alzheimer's).

P6775 Gawlick U, Kranz DM, Schepkin VD, Roy EJ. A conjugate of a tumor-targeting ligand and a T cell costimulatory antibody to treat brain tumors. Bioconjug Chem 2004; 15(5):1137-1145. >>> Antibody, anti-CD28 Fab/Folate; gadolinium; PBS; CSF/CNS (intratumoral); Mice (transgenic); 1002; 14 days; Controls received mp w/ vehicle; functionality of mp verified by MRI w/ gadolinium infusion; comparison of IV, SC, ICV injections vs. mp; cancer (brain, choroid plexus); brain tissue distribution; MRI; cyanoacrylate adhesive; "The strongest effect on tumor growth assessed of anti-CD28 fab/Folate." (p. 1143). Plastics One cannula used.

P6743 Jang S, Ryu JH, Kim DH, Oh SW. Changes of [³H]MK-801, [³H]muscimol and [³H]flunitrazepam binding in rat brain by the prolonged ventricular infusion of transformed ginsenosides. Neurochemical Research 2004; 29(12):2257-2266. >>> Ginsenoside Rg3; Ginsenoside Rg2; compound K; Saline; CSF/CNS; Rat; 2ML1; 7 days; Controls received mp w/ vehicle; cyanoacrylate adhesive.

P6634 Croll SD, Ransohoff RM, Cai N, Zhang Q, Martin FJ, Wei T et al. VEGF-mediated inflammation precedes angiogenesis in adult brain. Exp Neurol 2004; 187(2):388-402. >>> Vascular endothelial growth factor 164, mouse; Flt-Fc; angiopoietin I, human; angiopoietin II, human; PBS; CSF/CNS (frontoparietal cortex); Rat; 2002; 1,2,3,4,5,7 days; Controls received mp w/ vehicle or hFc; dose-response (fig. 1); brain tissue distribution; peptides; cyanoacrylate adhesive (Loctite 495).

P6604 Marino MJ, Awad-Granko H, Ciombor KJ, Conn PJ. Haloperidol-induced alteration in the physiological actions of group I mGlu in the subthalamic nucleus and the substantia nigra pars reticulata. *Neuropharmacology* 2002; 43(2):147-159. >>> Haloperidol; Lactic acid; NaOH; saline; SC; Rat (neonate); 2001; 16 hours; Cyanoacrylate adhesive applied over sutures; animal info (15-18 days old, 20-37 grams).

P6549 Thompson NM, Gill DAS, Davies R, Loveridge N, Houston PA, Robinson ICAF et al. Ghrelin and des-octanoyl ghrelin promote adipogenesis directly in vivo by a mechanism independent of the type 1a growth hormone secretagogue receptor. *Endocrinology* 2004; 145(1):234-242. >>> Ghrelin, rat; ghrelin, des-octanoyl rat; L-163,255; Saline, sterile; BSA; heparin; Bone (tibial bone marrow); Rat; 2001; 7 days; Controls received mp w/ vehicle; no stress (see pg.236); peptides; cyanoacrylate adhesive; L-163,255 is a spiropiperidine GHS-R1a agonist; 5 U/ml of heparin.

P6495 Raposinho PD, Pedrazzini T, White RB, Palmiter RD, Aubert ML. Chronic neuropeptide Y infusion into the lateral ventricle induces sustained feeding and obesity in mice lacking either Npy1r or Npy5r expression. *Endocrinology* 2004; 145(1):304-310. >>> Neuropeptide Y, porcine; Phosphate buffer; sodium chloride; ascorbic acid; BSA; CSF/CNS; Mice; 2001; 7 days; Controls received mp w/ vehicle; stress/adverse reaction: (see pg.305) initial weight loss from surgery/anesthesia; ALZET brain infusion kit 2 used; peptides; cyanoacrylate adhesive (Loctite 454).

P6373 Souweidane MM, Occhiogrosso G, Mark EB, Edgar MA. Interstitial infusion of IL13-PE38QQR in the rat brain stem. *J Neurooncol* 2004; 67(3):287-293. >>> Interleukin-13,PE38QQR; Saline; serum albumin; CSF/CNS (brain stem); Rat; 2001D; 24 hours; Tissue perfusion (brain stem); stability verified (7 days at 37 degrees Celsius); good methods p. 288; cancer; cyanoacrylate adhesive; pump incorrectly labeled as a 2001; IL13-PE38QQR is a tumor specific, chimeric cytotoxin; 30 g Plastics One Cannula used; vinyl catheter tubing from DURECT used.

P6333 Li G, Frenz DA, Brahmblatt S, Feghali JG, Ruben RJ, Berggren D et al. Round Window Membrane Delivery of L-Methionine Provides Protection from Cisplatin Ototoxicity Without Compromising Chemotherapeutic Efficacy. *Neurotoxicology* 2000; 22:163-176. >>> Methionine, L-; PBS, sterile; Ear (round window membrane); Rat; 2002; 12 days; Controls received no treatment; comparison of IP injections vs. mp; cancer (breast); cyanoacrylate adhesive; tissue perfusion (round window membrane).

P6286 Pignataro G, Tortiglione A, Scorziello A, Giaccio L, Secondo A, Severino B et al. Evidence for a protective role played by the Na⁺/Ca²⁺ exchanger in cerebral ischemia induced by middle cerebral artery occlusion in male rats. *Neuropharmacology* 2004; 46(3):439-448. >>> Glu-xip; Xip; CB-DMB; KB-R7943; FeCl₃; Saline; DMSO; water; CSF/CNS; Rat; 1003D; 24 hours; Controls received mp w/ vehicle; dose-response (p. 444); peptides; ischemia (cerebral); cannula secured by cyanoacrylate adhesive & dental cement; KB-R7943 dissolved in 10% DMSO in water; all other agents dissolved in saline; agents are NCX (Na/Ca) inhibitors.

P6232 Hohmann JG, Krasnow SM, Teklemichael DN, Clifton DK, Wynick D, Steiner RA. Neuroendocrine profiles in galanin-overexpressing and knockout mice. *Neuroendocrinology*

2003; 77(6):354-366. >>> Galanin; CSF, artificial; CSF/CNS; Mice; 1007D; 6 days; Controls received mp w/ vehicle; functionality of mp verified by residual volume in pump; comparison of ICV injections vs. mp; ALZET brain infusion kit used; peptides; cyanoacrylate adhesive.

P6159 Ekborn A, Laurell G, Ehrsson H, Miller J. Intracochlear administration of thiourea protects against cisplatin-induced outer hair cell loss in the guinea pig. *Hear Res* 2003; 181(1-2):109-115. >>> Thiourea; Perilymph, artificial; water, sterile; Ear (cochlea); Guinea-pig; 2002; 14 days; good methods p. 111; microtip catheter was held in place using cyanoacrylate glue at the bulla defect, which was then sealed with dental cement; cites a detailed cannulation method; tissue perfusion (cochlea).

P5996 Emsley JG, Hagg T. Alpha6beta1 integrin directs migration of neuronal precursors in adult mouse forebrain. *Exp Neurol* 2003; 183(2):273-285. >>> Laminin polypeptide; Acetic acid; rat serum albumin; gentamicin; CSF/CNS (neostriatum); Mice; 1002; 14 days; Controls received mp w/ vehicle; peptides; cannula affixed to the skull with cyanoacrylate adhesive (loctite 454); 3.0 mm long cannula; laminin is an A6B1 integrin ligand; schematic diagram of cannula placement (fig. 3; p. 278).

P5651 Nah SY, Oh S. Modulation of G protein alpha-subunit mRNA levels in discrete rat brain regions by cerebroventricular infusion of ginsenoside Rc and Rg1. *Neurochemical Research* 2003; 28(5):691-697. >>> Ginsenoside Rc; Ginsenoside Rg1; Saline; CSF/CNS; Rat; 2ML1; 7 days; Controls received mp w/ vehicle; Ginsenoside also known as ginseng saponin; dental cement used to cement cannula on skull; incision closed w/ cyanoacrylate glue; one week recovery period before pump implantation.

P4747 Kernie SG, Liebl DJ, Parada LF. BDNF regulates eating behavior and locomotor activity in mice. *The European Molecular Biology Organization Journal* 2000; 19(6):1290-1300. >>> Brain-derived neurotrophic factor; Nerve growth factor; NT-4/5; PBS; CSF/CNS (third ventricle); mice; 1002; 14 days; Controls received mp w/ vehicle; functionality of mp verified by residual volume after sacrifice; peptides; ALZET brain infusion kit used; brain cannula secured to skull by cyanoacrylate adhesive (Loctite 454); cannula patency verified by methylene blue injection after sacrifice; recomb. human BDNF used; all neurotrophins infused via same pump.

P4272 Chen KS, Nishimura MC, Armanini MP, Crowley C, Spencer SD, Phillips HS. Disruption of a single allele of the nerve growth factor gene results in atrophy of basal forebrain cholinergic neurons and memory deficits. *J Neurosci* 1997; 17(19):7288-7296. >>> Nerve growth factor; CSF, artificial; serum, mouse; CSF/CNS; Mice; 1007D; 4 weeks; Controls received mp w/ vehicle; pumps replaced after 2 weeks; peptides; ALZET brain infusion kit used; cannula secured to skull using cyanoacrylate adhesive; model 1007D pump was half coated w/ wax to reduce flow rate; human recomb. NGF used; ngf +/- mice used.

P3797 Ullman MD, Ventura RF, Draski LJ, Deitrich RA, Baker RC. Effect of exogenous GM1 on ethanol sensitivity in selectively bred mouse lines. *Alcohol Clin Exp Res* 1997; 21(4):661-665. >>> GM1; Saline; ³H tracer; CSF/CNS; mice; 1003D; 72 hours; controls received mp w/saline; ALZET brain infusion kit used; cannula secured to skull using cyanoacrylate adhesive; brain tissue distribution.

P3300 Lake-Bakaar G, Lyubsky S. Dose-dependent effect of continuous subcutaneous verapamil infusion on experimental acute pancreatitis in mice. *Dig Dis Sci* 1995; 40(11):2349-2355. >>> Verapamil; Saline; SC; mice; 1007D; 96 hours; controls received mp w/saline; immunology; surgical incision closed w/cyanoacrylate.