**References on the Administration of Ganciclovir
Using ALZET® Osmotic Pumps**

Q6925: S. Kalin*, et al.* CNS myeloid cells critically regulate heat hyperalgesia. J Clin Invest 2018;128(7):2774-2786
Agents: Ganciclovir **Vehicle: Route:** CSF/CNS (lateral ventricle); **Species:** Mice (transgenic); **Pump:** 2002; **Duration:** 4 weeks;
ALZET Comments: animal info (150- to 200-dayold adult male hemizygous CD11b-HSVTK (TK) mice (4) or their transgene-negative littermates); ALZET brain infusion kit used;.

Q7124: M. Cusimano*, et al.* Selective killing of spinal cord neural stem cells impairs locomotor recovery in a mouse model of spinal cord injury. J Neuroinflammation 2018;15(1):58
Agents: Ganciclovir **Vehicle:** Water; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 28 days;
ALZET Comments: Dose (100 mg/kg/day); animal info (NestinTK); pumps replaced every 2 weeks; neurodegenerative (Spinal Chord); .

Q5714: W. Xu*, et al.* Myelin Basic Protein Regulates Primitive and Definitive Neural Stem Cell Proliferation from the Adult Spinal Cord. Stem Cells 2017;35(2):485-496
Agents: Ganciclovir **Vehicle: Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 5 days;
ALZET Comments: animal info (GFAP-TK); spinal cord injury;.

Q5885: R. L. Reeve*, et al.* Quiescent Oct4(+) Neural Stem Cells (NSCs) Repopulate Ablated Glial Fibrillary Acidic Protein(+) NSCs in the Adult Mouse Brain. Stem Cells 2017;35(9):2071-2082
Agents: Ara-C; ganciclovir **Vehicle: Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; **Duration:** 3 days; 7 days; 14 days;
ALZET Comments: animal info (Oct4 CKO;tk);.

Q5822: M. Nakano*, et al.* NG2 glial cells regulate neuroimmunological responses to maintain neuronal function and survival. Sci Rep 2017;7(42041
Agents: Ganciclovir **Vehicle: Route:** CSF/CNS (left lateral ventricle); **Species:** Rat; **Pump:** SMP-300, iPRECIO; **Duration: ALZET Comments:** Controls animals were sham operated or infused with vehicle; animal info (NG2-HSVtk, 12-35 weeks old); ALZET brain infusion kit 1 used; immunology; Therapeutic indication (Neuroimmunology, neuroinflammation, neural development); Dose (0.01, 0.1, 0.5, 1.0, and 10 mg/ml);.

Q6356: J. Mircetic*, et al.* Development of a genetic sensor that eliminates p53 deficient cells. Nat Commun 2017;8(1):1463
Agents: Ganciclovir **Vehicle:** Water; **Route:** SC; **Species:** Mice (nude); **Pump:** 2002; **Duration:** 14 days;
ALZET Comments: Dose (20 mg/kg/day); Controls received mp w/ vehicle; animal info (12 week old NMRI (nu/nu) mice);.

Q5709: H. Williams*, et al.* Suppression of neointima formation by targeting beta-catenin/TCF pathway. Biosci Rep 2016;36(6):
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice; **Pump:** 2002; 2004; **Duration:** 21 days;
ALZET Comments: Controls received mp w/ PBS; animal info (C57BL6J); Dose (25 mg/kg/day);.

Q4845: A. G. Kotini*, et al.* Escape Mutations, Ganciclovir Resistance, and Teratoma Formation in Human iPSCs Expressing an HSVtk Suicide Gene. MOLECULAR THERAPY 2016;5(**Agents:** Ganciclovir **Vehicle:** PBS; **Route:** SC; **Species:** Mice (NSG); **Pump:** 1007D; **Duration:** 2 weeks;
ALZET Comments: animal info (female, NSG, 8 weeks old); pumps replaced every week; cancer (teratoma); Dose (5 mg/kg/day);.

Q5285: N. H. Varvel*, et al.* Replacement of brain-resident myeloid cells does not alter cerebral amyloid-beta deposition in mouse models of Alzheimer's disease. J Exp Med 2015;212(11):1803-9
Agents: Valganciclovir **Vehicle:** PBS; **Route:** CSF/CNS (ventricle); **Species:** mice; **Pump:** 2004; **Duration:** 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (Female hemizygous TK mice crossed w/ male hemizygous APPPS1 or hemizygous APP23); ALZET brain infusion kit 3 used; good methods (pg. 11807); post op. care (paracetamol, i.p. 5 mg/kg daily; acetaminophen i.p. 5 mg/kg daily); brain tissue distribution; Dental cement used; Cannula placement verified

via staining; anesthetized using ketamine and xylazine; Brain coordinates; from bregma: +0.1 mm anteroposterior, 1.0 mm lateral, and 2.5 mm dorsoventral; Dose (50 mg/ml);.

Q4258: D. O. Seo*, et al.* Adult Hippocampal Neurogenesis Modulates Fear Learning through Associative and Nonassociative Mechanisms. JOURNAL OF NEUROSCIENCE 2015;35(11330-11345
Agents: Ganciclovir **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1002; **Duration:** 2 weeks;
ALZET Comments: Control animals received mp w/ vehicle; animal info (8 wks old, DCX-TK transgenic, wt); ALZET brain infusion kit 3 used.

Q4578: U. Schneider*, et al.* Microglia inflict delayed brain injury after subarachnoid hemorrhage. ACTA NEUROPATHOLOGICA 2015;130(215-231
Agents: Ganciclovir **Vehicle: Route:** CSF/CNS; **Species:** Mice; **Pump: Duration:** 9 days;
ALZET Comments: Animal info (CD11b-HSVTK, 14-14 weeks old, 22-25g); ALZET brain infusion kit used; immunology; noted 230 ul reservoir;.

Q4290: K. Rolon-Reyes*, et al.* Microglia Activate Migration of Glioma Cells through a Pyk2 Intracellular Pathway. PLoS One 2015;10(U2306-U2323
Agents: Ganciclovir **Vehicle: Route:** CSF/CNS (intratumoral); **Species:** Mice (transgenic); **Pump:** 2004; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ saline, normal; animal info (male, CD11b-HSVTK trangenic); ALZET brain infusion kit used; cancer (glioma GL261);.

Q5254: S. Prokop*, et al.* Impact of peripheral myeloid cells on amyloid-beta pathology in Alzheimer's disease-like mice. J Exp Med 2015;212(11):1811-8
Agents: Ganciclovir **Vehicle:** CSF, artificial; **Route:** CSF/CNS (lateral ventricles); **Species:** mice; **Pump:** 2001; **Duration:** 10 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (APPPS1 transgenic mice); brain infusion cannula used; neurodegenerative (Alzheimer's); Dose (2.5 mg/ml); Therapeutic indication (Alzheimer's Disease);.

Q4509: K. J. Dixon*, et al.* Endogenous Neural Stem/Progenitor Cells Stabilize the Cortical Microenvironment after Traumatic Brain Injury. JOURNAL OF NEUROTRAUMA 2015;32(753-764
Agents: Ganciclovir sodium **Vehicle: Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (CD1 nestin TK, adult); pumps replaced every 2 weeks; behavioral testing (motor function/rotarod test); traumatic brain injury;.

Q4373: K. O. Cho*, et al.* Aberrant hippocampal neurogenesis contributes to epilepsy and associated cognitive decline. Nature Communications 2015;6(U1-U13
Agents: Ganciclovir **Vehicle:** Water, distilled; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (C57BL6 or Nestin-TH, 6 weeks old); behavioral testing (epilepsy behavior, open field, memory); pumps removed after 4 weeks; epilepsy;.

Q4340: M. L. Bustos*, et al.* Depletion of Bone Marrow CCSP-Expressing Cells Delays Airway Regeneration. MOLECULAR THERAPY 2015;23(561-569
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice; **Pump: Duration:** 15 days;
ALZET Comments: Animal info (CCtk or WT);.

Q3378: A. A. Swan*, et al.* Characterization of the Role of Adult Neurogenesis in Touch-Screen Discrimination Learning. Hippocampus 2014;24(1581-1591
Agents: Ganciclovir **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 4 weeks;
ALZET Comments: Animal info (GFAP TK tg, wt); "prevent necrosis at the drug infusion site, the pumps were gently rotated within the subcutaneous space every other day." pg 1582.

Q3618: N. Sachewsky*, et al.* Primitive Neural Stem Cells in the Adult Mammalian Brain Give Rise to GFAP-Expressing Neural Stem Cells. STEM CELL REPORTS 2014;2(810-824
Agents: Ganciclovir; Ara-C **Vehicle:** PBS; saline; **Route:** CSF/CNS; **Species:** Mice (transgenic); **Pump:** 1007D; **Duration:** 21 days; 7 days;
ALZET Comments: Animal info (GFAP-TK); ischemia (cerebral); 2% AraC; 200uM GCV;.

Q3811: R. E. Bennett*, et al.* Acute Reduction of Microglia Does Not Alter Axonal Injury in a Mouse Model of Repetitive Concussive Traumatic Brain Injury. Journal of Neurotrauma 2014;31(1647-1663
Agents: Valganciclovir **Vehicle:** Saline, sterile; **Route: Species:** Mice; **Pump:** 1002; 2004; **Duration: ALZET Comments:** Controls received mp w/ vehicle; animal info (CD11b-TK +/-,6-8 weeks); post op. care (antibacterial ointment; heating pad); cyanoacrylate adhesive; Cannula placement verified via histological analysis; used Plastics One Cannula; pumps primed at 37C for 36-48 hours; pumps removed after 7 days and reimplanted after two closed-skull injuries; traumatic brain injury;.

Q3143: C. R. Sun*, et al.* Conditional Ablation of Neuroprogenitor Cells in Adult Mice Impedes Recovery of Poststroke Cognitive Function and Reduces Synaptic Connectivity in the Perforant Pathway. Journal of Neuroscience 2013;33(44):17314-17325
Agents: Ganciclovir **Vehicle:** Saline; **Route: Species:** Mice (transgenic); **Pump:** 2002; **Duration:** 4 weeks; 8 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, 6 weeks old); pumps replaced every 2 weeks; ischemia (stroke); behavioral testing (Barnes maze test, ladder test, cat walk test);.

Q3079: J. O. Groves*, et al.* Ablating Adult Neurogenesis in the Rat Has No Effect on Spatial Processing: Evidence from a Novel Pharmacogenetic Model. PLoS Genetics 2013;9(9):U87-U102
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Rat (transgenic); **Pump:** 2ML4; **Duration:** 8 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, GFAP-TK, 8 weeks old); pumps replaced every 4 weeks; dose-response (p11); behavioral testing (Morris water maze, spatial working memory, food neophobia, anxiety tests, radial maze, open field); long-term study; ganciclovir aka DHPG;.

Q3490: S. A. Grathwohl*, et al.* Replacement of osmotic minipumps to extend the intracerebral infusion time of compounds into the mouse brain. Biotechniques 2013;55(2):75-78
Agents: Valganciclovir **Vehicle:** PBS; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2004; **Duration:** 2 weeks; 4 weeks;;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, hemizygous CD11b-HSVTK); ALZET brain infusion kit 3 used; post op. care (Paracetamol IP 5 mg/kg/day up to 3 days); Pumps primed in 37C PBS;.

Q3057: M. L. Bustos*, et al.* Bone Marrow Cells Expressing Clara Cell Secretory Protein Increase Epithelial Repair After Ablation of Pulmonary Clara Cells. MOLECULAR THERAPY 2013;21(6):1251-1258
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice; **Pump: Duration:** 5 days; 10 days;
ALZET Comments: Animal info (CCtk, four month old, 24g); pumps used to induce symptoms.

Q2151: X. M. Wang*, et al.* Conditional Depletion of Neurogenesis Inhibits Long-Term Recovery after Experimental Stroke in Mice. PLoS One 2012;7(6):U384-U391
Agents: Ganciclovir **Vehicle:** PBS; **Route: Species:** Mice (transgenic); **Pump:** 1003D; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (HSV-TK Tg, CD1); incorrectly listed Model 1003D as 0.25 ul/hr; MCAO; ischemia (cerebral).

Q2437: F. Sun*, et al.* Ablation of Neurogenesis Attenuates Recovery of Motor Function after Focal Cerebral Ischemia in Middle-Aged Mice. PLoS One 2012;7(10):U92-U99
Agents: Ganciclovir **Vehicle:** PBS; **Route: Species:** Mice; **Pump: Duration:** 14 days;
ALZET Comments: Control animals received mp w/ vehicle; animal info (DCX-TK+, DCX-TL-, 12 mo old, male); infusion rate of 0.25 ul/hr).

Q5668: M. V. Sofroniew. Transgenic techniques for cell ablation or molecular deletion to investigate functions of astrocytes and other GFAP-expressing cell types. Methods Mol Biol 2012;814(531-44

Agents: Ganciclovir **Vehicle:** Saline; **Route:** SC; **Species:** Mice (transgenic); **Pump: Duration:** 7, 21, 42 days;
ALZET Comments: animal info (mGFAP-TK mice, 30 grams); comparison of daily injections vs mp; Dose (10 mg/kg/day);.

Q2625: Y. Niibori*, et al.* Suppression of adult neurogenesis impairs population coding of similar contexts in hippocampal CA3 region. Nature Communications 2012;3(;):U271-U277
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration: ALZET Comments:** Animal info (TK+, wt, 8 wks old).

Q5387: S. M. Lehmann*, et al.* An unconventional role for miRNA: let-7 activates Toll-like receptor 7 and causes neurodegeneration. Nat Neurosci 2012;15(6):827-35
Agents: Ganciclovir **Vehicle:** CSF, artificial; **Route:** CSF/CNS (ventricles); **Species:** Mice; **Pump:** 2001; **Duration:** 10 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (C57Bl/6J-CD11b-HSVTK mice); functionality of mp verified by brain samples; brain infusion kit used; neurodegenerative (Alzheimer's Disease); Ablation of microglia done through administration of Ganciclovir; Dose (2 mg/mL);.

Q2403: J. Chen*, et al.* A restricted cell population propagates glioblastoma growth after chemotherapy. Nature 2012;488(7412):522-U121
Agents: Ganciclovir **Vehicle: Route: Species:** Mice; **Pump:** 2002; 2004; **Duration:** 10 weeks;
ALZET Comments: Control animals received mp w/ PBS; animal info (Mut7, 8-10 wks old); pumps replaced every 4 weeks; long-term study; cancer (glioblastoma).

Q2315: E. Butti*, et al.* Subventricular zone neural progenitors protect striatal neurons from glutamatergic excitotoxicity. Brain 2012;135(;):3320-3335
Agents: Ganciclovir; ara-C; HU210 **Vehicle:** Water, distilled; PBS; DMSO; Tween; URB597; **Route:** SC; CSF/CNS; CSF/CNS (striatum); **Species:** Mice; **Pump:** 2002; 1007D; **Duration:** 7, 28 days;
ALZET Comments: Animal info (NestinfloxGFPfloxTK); pumps replaced after 14 days; brain infusion kit 3 used; incorrectly listed Model 1007; enzyme inhibitor (fatty acid amid hydrolase); HU210 is a cannabinoid receptor agonist.

Q2952: N. S. Burghardt*, et al.* Adult-born hippocampal neurons promote cognitive flexibility in mice. Hippocampus 2012;22(9):1795-1808
Agents: Ganciclovir **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump: Duration:** 56 days;
ALZET Comments: Controls received mp w/ ganciclovir; animal info (male, 129Sv/Ev, 23-27wks old; GFAP-TK transgenic); multiple pumps used (2); behavioral testing (p.1796).

Q1910: M. E. Bernard*, et al.* Repopulation of the Irradiation Damaged Lung with Bone Marrow-derived Cells. In Vivo 2012;26(1):9-18
Agents: Ganciclovir **Vehicle:** Saline, normal; **Route:** SC; **Species:** Mice (transgenic); **Pump: Duration:** 24 hours;
ALZET Comments: Controls received mp w/ vehicle; animal info (FVB/NHsd, HSV-TK-CCSP transgenic littermates, 6-10 wks old).

Q0783: H. Y. Zhai*, et al.* Microglia/Macrophages Promote Glioma Progression. Glia 2011;59(3):472-485
Agents: Ganciclovir; macrophage/microglia inhibitory factor; tuftsin **Vehicle: Route:** CSF/CNS (intratumoral); **Species:** Mice; **Pump: Duration:** 14, 28 days;
ALZET Comments: Negative controls received mp w/ saline; animal info (12-16 wks old, male, CD11b-HSVTK +/-, 25-30 g, C57BL/6); cancer (glioma); Plastics One guide cannula used; macrophage/microglia inhibitory factor also known as MIF/TKP is a tripeptide; tuftsin also known as threonine-lysine-proline-arginin or TKPR.

Q1416: J. Yong*, et al.* Multimodality Imaging of beta-Cells in Mouse Models of Type 1 and 2 Diabetes. Diabetes 2011;60(5):1383-1392
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice; **Pump: Duration:** 14 days;
ALZET Comments: Animal info (C57BL/6 MIP-TF, 8 wks old).

Q0942: J. Wright*, et al.* Age-Related Changes in the Oligodendrocyte Progenitor Pool Influence Brain Remodeling after Injury. Developmental Neuroscience 2011;32(5-6):499-509
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 2 weeks;
ALZET Comments: Controls received mp w/ distilled water; animal info (P14, 2 wks old).

Q1400: J. P. Wisor*, et al.* Cerebral microglia mediate sleep/wake and neuroinflammatory effects of methamphetamine. BRAIN BEHAVIOR AND IMMUNITY 2011;25(4):767-776
Agents: Ganciclovir **Vehicle:** HCl; saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2004; **Duration:** 30 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (CD11b-TKmt-30, tg); incorrectly listed Model 2004 rate as 2.5 ul/hr.

Q1952: L. Wei*, et al.* Affiliative Behavior Requires Juvenile, But Not Adult Neurogenesis. Journal of Neuroscience 2011;31(40):14335-14345
Agents: Ganciclovir **Vehicle:** PBS, sterile; **Route:** SC; CSF/CNS; **Species:** Mice (transgenic); **Pump:** 2004; 1004; **Duration:**
ALZET Comments: Animal info (TK-GFP); brain infusion kit 3 used; "the skull was dried with acetone" pg 14336.

Q1697: L. Van Landeghem*, et al.* Enteric glia promote intestinal mucosal healing via activation of focal adhesion kinase and release of proEGF. American Journal of Physiology-Gastrointestinal and Liver Physiology 2011;300(6):G976-G987
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice; **Pump: Duration:** 7 days;
ALZET Comments: Animal info (GFAP-HSVtk Tg, 22 wks old).

Q1112: H. Han*, et al.* Synergistic effects of galectin-1 and reactive astrocytes on functional recovery after contusive spinal cord injury. Archives of Orthopaedic and Trauma Surgery 2011;131(6):829-839
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Rat; **Pump:** 1007D; **Duration: ALZET Comments:** Animal info (16-18 wks old).

Q0695: C. A. Blaiss*, et al.* Temporally Specified Genetic Ablation of Neurogenesis Impairs Cognitive Recovery after Traumatic Brain Injury. Journal of Neuroscience 2011;31(13):4906-4916
Agents: Ganciclovir **Vehicle:** Water, deionized; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks; 30 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (6 wks old, male, wild-type, nestin-HSV-tk); wound clips used; behavioral testing (Morris water maze, fear conditioning).

Q2223: K. Arnold*, et al.* Sox2(+) Adult Stem and Progenitor Cells Are Important for Tissue Regeneration and Survival of Mice. Cell Stem Cell 2011;9(4):317-329
Agents: Ganciclovir **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump: Duration:** 1, 2 weeks;
ALZET Comments: Animal info (Sox2-TK, wt, 3, 10-wks old); 7 or 14 day pumps used.

Q0507: M. M. Mirrione*, et al.* Microglial ablation and lipopolysaccharide preconditioning affects pilocarpine-induced seizures in mice. NEUROBIOLOGY OF DISEASE 2010;39(1):85-97
Agents: Ganciclovir **Vehicle:** Saline; PBS; **Route:** CSF/CNS (hippocampus); **Species:** Mice; **Pump:** 1002; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ vehicle; post op. care (buprenorphine HCl); animal info (CD1 1b-, HSVTk +/-, wt, male, female, adult, 20-25 g); Plastics One guide cannula used.

P9957: K. L. Jin*, et al.* Transgenic ablation of doublecortin-expressing cells suppresses adult neurogenesis and worsens stroke outcome in mice. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2010;107(17):7993-7998
Agents: Ganciclovir **Vehicle: Route:** CSF/CNS; **Species:** Mice (transgenic); **Pump:** 1002; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ saline; animal info (DCX-Tk); incorrectly stated 1003D pumps used.

Q0771: G. J. Huang*, et al.* A Genetic and Functional Relationship between T Cells and Cellular Proliferation in the Adult Hippocampus. PLOS BIOLOGY 2010;8(12):U107-U116
Agents: Ganciclovir **Vehicle: Route:** CSF/CNS; **Species:** Mice; **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Animal info (GFAP-tk, nestin-tk); ALZET brain infusion kit 3 used.

P9471: A. C. Zemke*, et al.* Molecular Staging of Epithelial Maturation Using Secretory Cell-Specific Genes as Markers. American Journal of Respiratory Cell and Molecular Biology 2009;40(3):340-348
Agents: Ganciclovir **Vehicle:** Saline; **Route: Species:** Mice (transgenic); **Pump:** 2002; **Duration:** 6, 9 days;
ALZET Comments: Controls received no treatment; animal info (male, CCSP-HSVtK, 8-10 wks old); airway injury model.

P9511: R. Uchibori*, et al.* Retroviral vector-producing mesenchymal stem cells for targeted suicide cancer gene therapy. JOURNAL OF GENE MEDICINE 2009;11(5):373-381
Agents: Ganciclovir **Vehicle: Route:** IP; **Species:** Mice (nude); **Pump: Duration:** 28 days;
ALZET Comments: Controls received mp w/ PBS; animal info (6 wks old, male, Balb/c, nu/nu); gene therapy.

P9836: R. M. Teisanu*, et al.* Prospective Isolation of Bronchiolar Stem Cells Based Upon Immunophenotypic and Autofluorescence Characteristics. Stem Cells 2009;27(3):612-622
Agents: Ganciclovir **Vehicle:** PBS; **Route: Species:** Mice (transgenic); **Pump:** 2001D; **Duration:** 24 hours;
ALZET Comments: Animal info (2-6 months old, CCSP-HSV+k).

P9446: J. C. Snyder*, et al.* Reparative Capacity of Airway Epithelium Impacts Deposition and Remodeling of Extracellular Matrix. American Journal of Respiratory Cell and Molecular Biology 2009;40(6):633-642
Agents: Ganciclovir **Vehicle:** Saline, pyrogen free; **Route: Species:** Mice (transgenic); **Pump:** 2002; **Duration:** 3, 6, 9, 10 days;
ALZET Comments: Controls received no treatment; animal info (adult, FVB/N CCtK); airway injury model.

P9804: B. H. Singer*, et al.* Conditional Ablation and Recovery of Forebrain Neurogenesis in the Mouse. Journal of Comparative Neurology 2009;514(6):567-582
Agents: Ganciclovir **Vehicle:** Saline; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; no stress (572); ALZET brain infusion kit 3 used; animal info (8-12 wks old, Nestin tk^{+}. wt); "we did not observe any differences in the overt behavior of wild-type or nestin-tk^{+} mice, and there was no mortality following GCV administration." pg 572.

Q0815: R. D. Madison*, et al.* SCHWANN CELL INFLUENCE ON MOTOR NEURON REGENERATION ACCURACY. Neuroscience 2009;163(1):213-221
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ saline; animal info (TK, male, female, 20-22 g); incorrectly listed Model 1007 used.

P9704: S. Kaneko*, et al.* IL-7 and IL-15 allow the generation of suicide gene-modified alloreactive self-renewing central memory human T lymphocytes. Blood 2009;113(5):1006-1015
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice (NOD/SCID); **Pump: Duration:** 7 days;
ALZET Comments: Controls received mp w/PBS; animal info (6-8 wks old, female, NOD/Scid); "ALZET pumps...were implanted subcutaneously to ensure drug release at a constant rate" pg 1008.

P9232: T. S. Yu*, et al.* Traumatic Brain Injury-Induced Hippocampal Neurogenesis Requires Activation of Early Nestin-Expressing Progenitors. Journal of Neuroscience 2008;28(48):12901-12912
Agents: Ganciclovir **Vehicle:** Water, deionized; **Route:** SC; **Species:** Mice (transgenic); **Pump:** 2002; **Duration:** 4, 5 weeks;
ALZET Comments: Controls received mp w/ vehicle; pumps replaced every 2 weeks; animal info (C57BL/6, 6 wks old, dHSV-TK, wt, brain injury (CC1)).

P9379: G. Gowing*, et al.* Ablation of Proliferating Microglia Does Not Affect Motor Neuron Degeneration in Amyotrophic Lateral Sclerosis Caused by Mutant Superoxide Dismutase. Journal of Neuroscience 2008;28(41):10234-10244
Agents: Ganciclovir **Vehicle: Route:** CSF/CNS (intrathecal); **Species:** Mice (transgenic); **Pump:** 2004; **Duration:** 30 days;
ALZET Comments: Controls received mp w/ saline; animal info (CD11b-Tkmt-30-SOD1G93A Tg, 85 days old); neurodegenerative (ALS); IP injection of ganciclovir given 24 hours before and during mp implantation surgery; behavioral

testing (hindlimb reflex); "chronic and systemic injection of the nucleoside analog ganciclovir is lethal for CD11b-Tkmut30 transgenic mice, and ganciclovir is not highly diffusable within CNS tissue... To overcome this constraint, we proceeded with direct delivery of ganciclovir to the spinal cord via an osmotic pump connected to a cannula located in the intrathecal space." (p. 10240).

P8782: S. Giraud*, et al.* Transient depletion of dividing T lymphocytes in mice induces the emergence of regulatory T cells and dominant tolerance to islet allografts. AMERICAN JOURNAL OF TRANSPLANTATION 2008;8(5):942-953
Agents: Ganciclovir **Vehicle:** Water, pyrogen-free; **Route:** SC; **Species:** Mice; mice (transgenic); **Pump:** 2001; 2002; **Duration:** 7, 14 days;
ALZET Comments: STZ-induced diabetes, animal info (FVB EpCD4TK, FVB/N, B6 islet allograft, skin allograft).

P8323: M. A. Shibata*, et al.* Electrogene therapy using endostatin, with or without suicide gene therapy, suppresses murine mammary tumor growth and metastasis. Cancer Gene Therapy 2007;14(3):268-278
Agents: Ganciclovir **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 8 weeks;
ALZET Comments: Controls received mp w/ agent and empty control vector; pumps replaced every 14 days; no stress (see pg. 271); cancer (mammary adenocarcinoma); animal info (BALB/C, female, 20-24 grams).

P8243: M. D. Saxe*, et al.* Paradoxical Influence of hippocampal neurogenesis on working memory. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2007;104(11):4642-4646
Agents: Ganciclovir **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice (transgenic); **Pump:** 2004; **Duration:** 8 weeks;
ALZET Comments: Controls received mp w/ agent but did not contain GFAP-Tk Tg; pumps replaced after 4 weeks, with 2 weeks in between implantations; no stress (see pg. 4643); animal info (male, C57BL/6-BALB/C, 12-20 weeks old); "Because this system has previously been shown to cause gastrointestinal toxicity at high doses (16), we delivered a constant low dose of GCV for several weeks via SC osmotic minipumps...This modification achieved a nearly complete reduction in hippocampal neurogenesis...but resulted in no effects on activity, body weight, food consumption, or (GI) pathology." (p. 4643).

P8865: M. Kobayashi*, et al.* Tissue-targeted in vivo gene transfer coupled with histone deacetylase inhibitor depsipeptide (FK228) enhances adenoviral infection in rat renal cancer allograft model systems. UROLOGY 2007;70(6):1230-1236
Agents: Ganciclovir **Vehicle: Route:** IP; **Species:** Rat; **Pump: Duration:** 7 days;
ALZET Comments: Gene therapy; animal info (male, ACI, 6-8 wks old).

P8110: Y. Iwasaki*, et al.* Gene therapy of liver tumors with human liver-specific nanoparticles. Cancer Gene Therapy 2007;14(1):74-81
Agents: Ganciclovir **Vehicle:** Water, sterile; **Route:** SC; **Species:** Rat (nude); **Pump: Duration:** 12 days;
ALZET Comments: Controls received mp w/ agent and plasmid w/out gene therapy gene; no stress (see p.78); cancer (liver); gene therapy; animal info (male, F344/N, nu/nu, 5 wks old, 180g., NuE hepatic tumors); GCV acts as pro-drug for HSV-tk expression plasmid gene therapy.

P7923: A. R. Simard*, et al.* Bone marrow-derived microglia play a critical role in restricting senile plaque formation in Alzheimer's disease. Neuron 2006;49(4):489-502
Agents: Ganciclovir **Vehicle:** Saline; HCL; **Route:** CSF/CNS; **Species:** Mice (transgenic); **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Controls received mp w/ vehicle; ALZET brain infusion kit 3 used; neurodegenerative (Alzheimer's disease); animal info (15-24 weeks old).

P8337: M. D. Saxe*, et al.* Ablation of hippocampal neurogenesis impairs contextual fear conditioning and synaptic plasticity in the dentate gyrus. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2006;103(46):17501-17506
Agents: Ganciclovir **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice (transgenic); **Pump: Duration:** 6 weeks;
ALZET Comments: Animal info (male, C57BL/6, BALB/C, 12-20 weeks old).

P8074: D. J. Myer*, et al.* Essential protective roles of reactive astrocytes in traumatic brain injury. Brain 2006;129(;):2761-2772
Agents: Ganciclovir **Vehicle:** Saline, sterile physiological; **Route:** SC; **Species:** Mice (transgenic); mice; **Pump: Duration:** 7 days;
ALZET Comments: Animal info (C57BL/, wt or GFAP-TK Tg, contusion injury by controlled cortical impact); traumatic brain injury.

P7936: A. Bondanza*, et al.* Suicide gene therapy of graft-versus-host disease induced by central memory human T lymphocytes. Blood 2006;107(5):1828-1836
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Mice (NOD/SCID); **Pump:** 2001; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ saline; animal info (female, NOD/SCID, 6-8 weeks old, GvHD); gene therapy.

P7655: M. Ito*, et al.* Stem cells in the hair follicle bulge contribute to wound repair but not to homeostasis of the epidermis. Nature Medicine 2005;11(12):1351-1354
Agents: Ganciclovir **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice (SCID); **Pump:** 2002; **Duration:** 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; comparison of SC injections vs. mp; animal info (Krt 1-15-HSV-TK transgenic skin grafted onto CB17I cr-scid/scid).

P6992: D. Wolfe*, et al.* Safety and biodistribution studies of an HSV multigene vector following intracranial delivery to non-human primates. Gene Therapy 2004;11(23):1675-1684
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** Monkey (Rhesus); **Pump:** 2ML1; 2ML2; **Duration:** 4,5,34,35 days;
ALZET Comments: Pumps replaced after 2 weeks; no stress (see pg. 1677); cancer (glioblastoma); toxicology; MRI; multiple pumps per animal (2); gene therapy.

P6886: S. D. Reynolds*, et al.* Airway injury in lung disease pathophysiology: selective depletion of airway stem and progenitor cell pools potentiates lung inflammation and alveolar dysfunction. AMERICAN JOURNAL OF PHYSIOLOGY-LUNG CELLULAR AND MOLECULAR PHYSIOLOGY 2004;287(6):L1256-L1265
Agents: Ganciclovir **Vehicle:** Saline; **Route: Species:** Mice (transgenic); **Pump: Duration:** 6-14 days;
ALZET Comments: Controls received mp w/ vehicle; comparison of acute GCV vs. mp; no stress (see pg. L1262); "No evidence of infection at the pump insertion site, pneumonia or sepsis was noted in mice in either exposure protocol, at any time point." (p. L1262).

P6734: K. U. Hong*, et al.* Basal cells are a multipotent progenitor capable of renewing the bronchial epithelium. American Journal of Pathology 2004;164(2):577-588
Agents: Ganciclovir; uridine, bromodeoxy- **Vehicle:** Saline; **Route:** SC; **Species:** Mice (transgenic); **Pump:** 2002; **Duration:** 8 days, 24 hours;
ALZET Comments: Controls received mp w/ BrdU; 2002 pump used for 8 days of BrdU infusion; GCV infused for 24 hours.

P6504: J. R. Faulkner*, et al.* Reactive astrocytes protect tissue and preserve function after spinal cord injury. Journal of Neuroscience 2004;24(9):2143-2155
Agents: Ganciclovir **Vehicle:** Saline, sterile physiological; **Route:** SC; **Species:** Mice (transgenic); **Pump: Duration:** 7 days;
ALZET Comments: Controls received mp w/ vehicle.

P6238: C. M. Morshead*, et al.* The ablation of glial fibrillary acidic protein-positive cells from the adult central nervous system results in the loss of forebrain neural stem cells but not retinal stem cells. European Journal of Neuroscience 2003;18(1):76-84
Agents: Ganciclovir **Vehicle:** Saline, physiological; **Route:** CSF/CNS; **Species:** Mice (transgenic); **Pump:** 1007D; **Duration:** 3 days;
ALZET Comments: Controls received mp w/ vehicle.

P5657: M. Herraiz*, et al.* Liver failure caused by herpes simplex virus thymidine kinase plus ganciclovir therapy is associated with mitochondrial dysfunction and mito chondrial DNA depletion. Human Gene Therapy 2003;14(5):463-472

Agents: Ganciclovir **Vehicle:** Saline; **Route:** IP; **Species:** Rat; **Pump:** 2ML2; **Duration:** 3,7,10 days;
ALZET Comments: Controls received mp w/ saline; gene therapy.

P5596: F. Doetsch*, et al.* EGF converts transit-amplifying neurogenic precursors in the adult brain into multipotent stem cells. Neuron 2002;36(6):1021-1034
Agents: Epidermal growth factor; Ganciclovir **Vehicle:** Saline; BSA; PBS; **Route:** CSF/CNS; **Species:** Mice; **Pump:** 1007D; 1002; **Duration:** 7 hours; 6 days;
ALZET Comments: Controls received mp w/ vehicle; Gene therapy; peptides; EGF was diluted in BSA-containing saline and infused for 7 hours, or 6 days in 1007D pumps; Ganciclovir was diluted in PBS and infused for 6 days via 1002 pumps.

Q6848: J. Liu*, et al.* Selective T-cell subset ablation demonstrates a role for T1 and T2 cells in ongoing acute graft-versus-host disease: a model system for the reversal of disease. Blood 2001;98(12):3367-3375
Agents: Ganciclovir **Vehicle:** PBS; **Route:** SC; **Species:** Mice (transgenic); **Pump:** 2004; **Duration:** 28 days;
ALZET Comments: Dose (3.75 mg/d); Controls received mp w/ vehicle; animal info (Six- to 8-week-old AKR and B10.BR male mice);.

P4512: V. Thomas-Vaslin*, et al.* Prolonged allograft survival through conditional and specific ablation of alloreactive T cells expressing a suicide gene. Transplantation 2000;69(10):2154-2161
Agents: Ganciclovir **Vehicle:** Water;; **Route:** SC;; **Species:** mice (transgenic);; **Pump:** 2001; 2002;; **Duration:** 7, 14 days;;
ALZET Comments: funtionality of mp verified by ganciclovir plasma levels by liquid chromatography; immunology; transplantation;.

P5767: S. D. Reynolds*, et al.* Conditional clara cell ablation reveals a self-renewing progenitor function of pulmonary neuroendocrine cells. Am J Physiol Lung Cell Mol Physiol 2000;278(6):L1256-L1263
Agents: Ganciclovir **Vehicle:** Saline; **Route: Species:** Mice (transgenic); **Pump: Duration:** 6,12 days;
ALZET Comments: Controls received mp w/ vehicle; gene therapy.

P4580: T. G. Bush*, et al.* Leukocyte infiltration, neuronal degeneration, and neurite outgrowth after ablation of scar-forming, reactive astrocytes in adult transgenic mice. Neuron 1999;23(297-308
Agents: Ganciclovir; memantine **Vehicle:** Saline, sterile physiological; **Route:** SC; **Species:** Mice (transgenic); **Pump: Duration:** 7, 14 days;
ALZET Comments: gene therapy; ganciclovir infused for 7 days; memantin infused for 14 days.

Q5560: B. Lambrecht. Dendritic cells are required for the development of chronic eosinophilic airway inflammation in response to inhaled antigen in sensitized mice. Journal of Immunology 1998;160(8):4090-4097
Agents: Ganciclovir **Vehicle:** PBS; **Route:** SC; **Species:** Mice (transgenic); **Pump:** 2001; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ vehicle (PBS); Immunology (Eosinophilic Airway Inflammation); Therapeutic indication (Asthma); Dose (50 mg/kg/day).

P4579: T. G. Bush*, et al.* Fulminant jejuno-ileitis following ablation of enteric glia in adult transgenic mice. Cell 1998;93(189-201
Agents: Ganciclovir; **Vehicle:** Saline, sterile physiological; **Route:** SC;; **Species:** mice (transgenic); **Pump:** 2004; 2001; 2002; 1007D; **Duration:** 7, 14, 28 days;
ALZET Comments: controls received no treatment; gene therapy.

P4467: J. L. Cohen*, et al.* Prevention of graft-versus-host disease in mice using a suicide gene expressed in T lymphocytes. Blood 1997;89(12):4636-4645
Agents: Ganciclovir; **Vehicle:** PBS;; **Route:** SC;; **Species:** mice;; **Pump:** 2001;; **Duration:** 7 days;;
ALZET Comments: controls received mp w/vehicle; functionality of mp verified by plasma levels; comparison of IP injections vs. mp; immunology; Gene therapy.

P3921: S. Benedetti*, et al.* Limited efficacy of the hsv-tk/gcv system for gene therapy of malignant gliomas and perspectives for the combined transduction of the interleukin-4 gene. Human Gene Therapy 1997;8(1345-1353
Agents: Ganciclovir **Vehicle:** Water; **Route: Species:** Rat; mice (nude); **Pump:** 2002; 2ML2; **Duration:** 2 weeks;
ALZET Comments: comparison of IP injections vs. mp; cancer; gene therapy.

P3574: M. Franken*, et al.* Epstein-barr virus-driven gene therapy for EBV-related lymphomas. Nature Medicine 1996;2(12):1379-1382
Agents: Ganciclovir **Vehicle: Route: Species:** mice (SCID); **Pump: Duration:** 7 days;
ALZET Comments: controls received p w/ saline; comparison of ip injections vs. mp; cancer; gene therapy.

P3047: H. Wallace*, et al.* Consequences of thyroid hormone deficiency induced by the specific ablation of thyroid follicle cells in adult transgenic mice. J. Endocrinol 1994;143(107-120
Agents: Ganciclovir **Vehicle: Route: Species:** mice; **Pump:** 2002; **Duration:** 14 days;
ALZET Comments: controls received mp with PBS; comparison of ip injections vs. mp.

P2284: P. T. Golumbek*, et al.* Herpes simplex-1 virus thymidine kinase gene is unable to completely eliminate live, nonimmunogenic tumor cell vaccines. J. Immunother 1992;12(224-230
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** mice; **Pump:** 2002; **Duration:** 2-4 weeks;
ALZET Comments: controls received mp w/vehicle; pumps replaced; immunology; Gene therapy.

P2129: H. Wallace*, et al.* Specific ablation of thyroid follicle cells in adult transgenic mice. Endocrinology 1991;129(6):3217-3226
Agents: Ganciclovir **Vehicle: Route:** SC; **Species:** mice; **Pump:** 2002; **Duration:** 14 days;
ALZET Comments: controls received mp with saline; also called DHPG.