



References on the Administration of Gamma-Aminobutyric Acid Using ALZET® Osmotic Pumps

Q0603: J. M. Gallego, *et al.* Continuous bilateral infusion of GABA in the dorsomedian nucleus of the thalamus elevates the generalized seizure threshold in amygdala-kindled rats. SEIZURE-EUROPEAN JOURNAL OF EPILEPSY 2009;18(7):537-540

ALZET Comments: Aminobutyric acid, gamma; Saline; CSF/CNS (dorsomedian nuclei of the thalamus); Rat; 2001; 7 days; Controls received mp w/ vehicle; animal info (adult, male, Wistar); functionality of mp verified by residual volume; multiple pumps per animal (2); bilateral infusion.

P8692: V. Navarro, *et al.* Loss of phase synchrony in an animal model of partial status epilepticus. Neuroscience 2007;148(1):304-313

ALZET Comments: Aminobutyric acid, gamma; Krebs's solution; CSF/CNS (left somatomotor cortex); Rat; 2001; 5 days; Controls received mp w/ vehicle; animal info (male, Wistar, 170-190g); epilepsy.

P7735: C. Silva-Barrat, *et al.* Exaggeration of epileptic-like patterns by nicotine receptor activation during the GABA withdrawal syndrome. Brain Research 2005;1042(2):133-143

ALZET Comments: Aminobutyric acid, gamma; CSF/CNS (somatomotor cortex); Rat; 2001; 5 days; Controls received mp w/ saline or no treatment; dependence; animal info (male, wistar).

P6975: R. Ding, *et al.* Cleft palate by picrotoxin or 3-MP and palatal shelf elevation in GABA-deficient mice.

NEUROTOXICOLOGY AND TERATOLOGY 2004;26(4):587-592

ALZET Comments: Picrotoxin; aminobutyric acid, Y; mercaptopropionic acid, 3-; SC; Mice (pregnant); 1003D; 3 days; Controls received mp w/ saline; comparison of SC injections vs. mp; no stress (see pg. 589); teratology; SC injections induced seizures, during mp infusion mice behaved normally.

P6456: J. A. Barcia, *et al.* Continuous intra-amygdalar infusion of GABA in the amygdala kindling model of epilepsy in rat. Epilepsy Research 2004;58(1):19-26

ALZET Comments: Aminobutyric acid, Y-; mannitol; Saline; CSF/CNS (amygdala); Rat; 2001; 7 days; Controls received mp w/mannitol; functionality of mp verified by cutting open & visual inspection; dose-response (table 1); no stress (see pg. 25).

P4853: L. Yang, *et al.* Audiogenic seizure susceptibility is induced by termination of continuous infusion of gamma-aminobutyric acid or an N-methyl-D-aspartic acid antagonist into the inferior colliculus. Experimental Neurology 2001;171(147-152)

ALZET Comments: Aminobutyric acid, Y-; AP7; Saline; CSF/CNS (inferior colliculus); Rat; 1002; 7 days; controls received mp w/ vehicle; AP7 is an NMDA receptor antagonist; seizures; bilateral cannula used; 1 week recovery period from surgery; cannula placement verified at end of experiment by histology; bilateral infusion;

P3309: A. Shuaib, *et al.* Gamma-vinyl GABA prevents hippocampal and substantia nigra reticulata damage in repetitive transient forebrain ischemia. Brain Research 1992;590(13-17)

ALZET Comments: GABA, gamma-vinyl-; Aminobutyric acid, Y-; CSF/CNS (third ventricle); gerbil; 5 days; Ischemia (cerebral).

P2959: G. Ballough, *et al.* Cytophotometric analysis of magnocellular azure B-RNA and Feulgen-DNA following chronic GABA infusion into the nucleus basalis of rats. Life Sci 1992;50(18):1299-1310

ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (nucleus basalis magnocellularis); Rat; 2001; 24 hours; controls received mp with saline and/or were sham operated; protective cranial cap placed over cannula provided mechanical support and protection; animals allowed 1 week recovery before pump implantation; non-infused hemisphere of each animal served as control for the infused hemisphere.

P2152: S. Brailowsky, *et al.* Effects of a Ginkgo biloba extract on two models of cortical hemiplegia in rats. Restor. Neurol. Neurosci 1991;3(267-274)

ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (motor cortex); Rat; 2001; 7 days; GABA withdrawal syndrome induced by infusion interruption achieved by disconnecting catheter leading to brain cannula after 24 hours.



- P1465:** S. Brailowsky, *et al.* Effects of localized, chronic GABA infusions into different cortical areas of the photosensitive baboon, *Papio papio*. *Electroencephalogr. Clin. Neurophysiol* 1989;72(147-156)
ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS; Monkey (baboon); 2ML1; 7 days; functionality of mp verified by removing and opening; pumps replaced once w/ saline-filled mp.
- P1297:** B. E. Will, *et al.* Unilateral infusion of GABA and saline into the nucleus basalis of rats: 1. effects on motor function and brain morphology. *Behav. Brain Research* 1988;27(123-129)
ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (nucleus basalis); Rat; 2001; 4, 10 days; pumps exchanged with control pumps containing saline; comparison of icv injections vs. mp infusion; pump replaced at 4 days.
- P1397:** G. La Salle, *et al.* Local asymptomatic status epilepticus induced by withdrawal of GABA infusion into limbic structures. *Exp. Neurol* 1988;101(411-417)
ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (amygdala); Rat; 2001; 6 days; mp connected to cannula; mp malfunction (pump disconnected after 6 days).
- P1314:** S. Brailowsky, *et al.* The GABA-withdrawal syndrome: a new model of focal epileptogenesis. *Brain Research* 1988;442(175-179)
ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (cortex); Rat; 2001; 3, 5, 7, 14 days and 3, 6, 12, 24 hours; pump replaced once at 7 days; long-term study.
- R0083:** S. Brailowsky. Therapeutic approaches in subjects with brain lesions. In 'Pharmacological Approaches to the Treatment of Brain and Spinal Cord Injury,' D. G. Stein and B. A. Sabel (eds.), Plenum Press, New York and London 1988;Ch. 1):1-21
ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (motor cortex); Rat; 2001; 7 days; m.p. infusion is a model for hemiplegia.
- P1152:** H. Fukuda, *et al.* Anticonvulsant effect of intracortical, chronic infusion of GABA in kindled rats: focal seizures upon withdrawal. *Exp. Neurol* 1987;98(120-129)
ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (amygdala); Rat; 2001; 7 days; controls received mp w/ saline; mp connected to bilateral cannulae; functionality of mp verified.
- P1023:** S. Brailowsky, *et al.* Epileptogenic γ -aminobutyric acid-withdrawal syndrome after chronic, intracortical infusion in baboons. *Neurosci. Lett* 1987;74(75-80)
ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (frontal cortex); Monkey (baboon); 2ML1; no duration posted; controls received mp w/vehicle; mp connected to intracerebral cannula; agent filled mp replaced after 7 days with saline filled mp; tissue perfusion (frontal cortex).
- P1220:** S. Brailowsky, *et al.* Recovery from GABA-mediated hemiplegia in young and aged rats: effects of Catecholaminergic manipulations. *Neurobiol. Aging* 1987;8(441-447)
ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (cortex); Rat; 2001; 7 days; controls received mp w/ saline; mp connected to cannula in cortex.
- P0886:** W. Loscher. Development of tolerance to the anticonvulsant effect of GABA-mimetic drugs in genetically epilepsy-prone gerbils. *Pharmacol. Biochem. Behav* 1986;24(1007-1013)
ALZET Comments: Aminobutyric acid, Y-acetylenic Y-; Aminooxyacetic acid; Diazepam; THIP; Valproic acid; Saline; SC; Rat; 2ML2; 2 weeks; controls received mp w/saline; diazepam too unstable to be used in mp; epilepsy; functionality of mp verified after 14 day exper. period - all 50 mps worked accurately; stability of VPA, THIP, GAG and AOAA.
- P0877:** S. Brailowsky, *et al.* Phenytoin increases the severity of cortical hemiplegia in rats. *Brain Research* 1986;376(71-77)



ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (somatomotor region); Rat; 2001; 7 days; controls rec'd mp w/saline; mp connected to cannula in somatomotor region; mps may have become detached from cannula during study (see p.73).

P0787: S. Brailowsky, *et al.* g-Aminobutyric acid-induced potentiation of cortical hemiplegia. Brain Research 1986;362(2):322-330

ALZET Comments: Aminobutyric acid, Y-; Saline; CSF/CNS (somatomotor region); Rat; 2001; 7 days; controls received mp w/saline; mp connected to cannula in somatomotor area; functionality of mp verified by completeness of delivery.

P0666: P. M. Beart, *et al.* Subchronic administration of GABAergic agonists elevates (3H)GABA binding and produces tolerance in striatal dopamine catabolism. Brain Research 1985;335(1):169-173

ALZET Comments: Aminobutyric acid, Y-acetylenic Y-; Aminobutyric acid, Y-vinyl Y-; Kojic amine; Aminooxyacetic acid; Baclofen; THIP; Water; SC; Rat; 2001; 2002; 7-14 days; comparison of injec vs. mp infusion; comparison of agents effects; THIP is 4,5,6,7-tetrahydroisoxazolol (5,4-c) pyridin-3-ol; Kojic amine is 2-amino-methyl-5-hydroxy-4H-pyran-4-one.

P0439: B. Costall, *et al.* Locomotor hyperactivity caused by dopamine infusion into the nucleus accumbens of rat brain: specificity of action. Psychopharmacology 1984;82(174-180)

ALZET Comments: Acetylcholine HCl; Aminobutyric acid, Y-; Serotonin bimaleinate; Dopamine HCl; Norepinephrine bitartrate; Nitrogen; Sodium metabisulfite; CSF/CNS (nucleus accumbens); Rat; 2002; 13 days; Cholinergic agent; comparison of agents effects; no stress p. 175; stability of substances remaining in pump after 13 days was verified.

P0289: R. M. Mangano, *et al.* Chronic infusion of endogenous excitatory amino acids into rat striatum and hippocampus. Brain Res. Bull 1983;10(47-51)

ALZET Comments: Aminobutyric acid, Y-; Aspartic acid, dl-threo-B-hydroxy; Aspartic acid, l-; Cysteine sulfinic acid; Glutamic acid, l-; Radio-isotopes; 3H tracer; Acetate; Saline; CSF/CNS (corpus striatum); CSF/CNS (hippocampus); Rat; 2002; 2 weeks; comparison of injec. vs. mp infusion; amino acids infused separately & simultaneously.