References on the Administration of Antipsychotics Using ALZET® Osmotic Pumps

1. Chlorpromazine

P2717: P. N. M. Konings*, et al.* Chronic haloperidol and chlorpromazine treatment alters in vitro B-endorphin metabolism in rat brain. Eur. J. Pharmacol 1990;191(115-128
ALZET Comments: Haloperidol; Chlorpromazine; Saline, sterile; SC; Rat; 2001; 2ML1; 8 days; controls received mp w/ vehicle.

P1348: T. N. Myschuk*, et al.* Long term (1 week) tranquilization of mice using Alzet(R) mini-osmotic pumps. Can. Lab Anim. Sci. News 1987;20(1):18-20
ALZET Comments: Chlorpromazine HCl; IP; SC; mice; 2002; 7, 10 days; complications with sc delivery; no stress/stress.

P1137: T. P. Davis*, et al.* Neuroleptic drug treatment alters in vitro central neurotensin metabolism. Psychoneuroendocrinology 1987;12(4):253-260
ALZET Comments: Chlorpromazine; Haloperidol; SC; Rat; 2001; 2ML1; 8 days; controls received sham op; concomitant infusion of agents; comparison of agents effects; functionality of mp verified by gravimetric analyses.

P0908: P. Frey. Changes in cholecystokinin content in rat brain after subchronic treatment with neuroleptics. Ann. N. Y. Acad. Sci 1985;448(601-603
ALZET Comments: Flupenthixol, cis-; Flupenthixol, trans-; Amitriptyline; Amphetamine; Atropine; Chlorpromazine; Clozapine; Fluphenazine; Haloperidol; Morphine; Prazosin; SC; Rat; 2 weeks; mp model not stated; comparison of sc injections vs. mp infusion; antihypertensive.

P0447: T. P. Davis*, et al.* Centrally acting drugs alter in vitro B-endorphin processing in the rat. Eur. J. Pharmacol 1984;100(249-251
ALZET Comments: Chlorpromazine; haloperidol; phenobarbital; promethazine; SC; Rat; 2001; 8 days; Comparison of agents effects.

2. Clozapine

Q8454: E. A. Dulka*, et al.* Chemogenetic Suppression of GnRH Neurons during Pubertal Development Can Alter Adult GnRH Neuron Firing Rate and Reproductive Parameters in Female Mice. eNeuro 2020;7(3):
Agents: Clozapine-N-oxide **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Dose (0.3 mg/kg); 2.75% DMSO used; Controls received mp w/ vehicle; animal info (Transgenic mice (C57Bl6/J), 2 weeks old); Clozapine-N-oxide aka CNO; dependence;

Q7611: A. Obeidat*, et al.* Nociceptive neuroplasticity of the murine knee joint precedes severe structural joint damage in a surgical model of OA. Osteoarthritis and Cartilage 2019;27(**Agents:** Clozapine N-oxide **Vehicle:** Vehicle; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 6 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (10 weeks old, Male); behavioral testing (Pressure Application Measurement, Up-Down staircase Test); Clozapine N-Oxide aka CNO; enzyme inhibitor (Nociceptor inhibtor); dependence;

Q7989: D. Esen-Sehir*, et al.* Establishing an effective dose for chronic intracerebroventricular administration of clozapine in mice. Acta Neuropsychiatr 2019;31(6):305-315
Agents: Clozapine **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricles); **Species:** Mice; **Pump:** 2006; **Duration:** 3 weeks;
ALZET Comments: Dose (0,12.5,25, or 50 ug/day); Controls received mp w/ vehicle; animal info (C57BL/6J); ALZET brain infusion kit 3 used; Brain coordinates (AP −0.5 mm, ML ± 1.4mmand DV 3mm from the skull surface); neurodegenerative ();

Q7925: N. D. Jayaraj*, et al.* Reducing CXCR4-mediated nociceptor hyperexcitability reverses painful diabetic neuropathy. J Clin Invest 2018;128(6):2205-2225
Agents: Clozapine-N-Oxide **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 4 weeks;
ALZET Comments: Dose (10 mg/kg/day); Controls received mp w/ vehicle; Clozapine-N-oxide aka CNO; diabetes;

Q5793: F. Donato*, et al.* Stellate cells drive maturation of the entorhinal-hippocampal circuit. Science 2017;355(6330):
Agents: Clozapine-N-oxide **Vehicle:** Saline; **Route:** SC; **Species:** Mice (neonate); **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (11-14 days); clozapine-N-oxide (CNO) Therapeutic indication (learning and memory); Dose (1 mg/kg);

3. Fluphenazine

P0908: P. Frey. Changes in cholecystokinin content in rat brain after subchronic treatment with neuroleptics. Ann. N. Y. Acad. Sci 1985;448(601-603
ALZET Comments: Flupenthixol, cis-; Flupenthixol, trans-; Amitriptyline; Amphetamine; Atropine; Chlorpromazine; Clozapine; Fluphenazine; Haloperidol; Morphine; Prazosin; SC; Rat; 2 weeks; mp model not stated; comparison of sc injections vs. mp infusion; antihypertensive.

4. Haloperidol

Q8240: T. A. Lanz*, et al.* Postmortem transcriptional profiling reveals widespread increase in inflammation in schizophrenia: a comparison of prefrontal cortex, striatum, and hippocampus among matched tetrads of controls with subjects diagnosed with schizophrenia, bipolar or major depressive disorder. Transl Psychiatry 2019;9(1):151
Agents: Haloperidol or Risperidone **Vehicle:** Acetic Acid; **Route:** CSF/CNS; **Species:** Rat; **Pump:** Not stated; **Duration:** 21 days;
ALZET Comments: Dose (haloperidol-0.25 mg/kg/day or risperidone-5 mg/kg/day); 1% Acetic Acid used; Controls received mp w/ vehicle; animal info (2 months old, Sprague Dawley, Male); neurodegenerative (Psychiatric Disorder);

Q7882: T. C. Uzuneser*, et al.* Schizophrenia dimension-specific antipsychotic drug action and failure in amphetamine-sensitized psychotic-like rats. European Neuropsychopharmacology 2018;28(12):1382-1393
Agents: haloperidol **Vehicle:** water, distilled, ascorbic acid and cyclodextrin buffered; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;
ALZET Comments: Dose (0.05, 0.5 mg/kg/day); distilled water containing 0.3% ascorbic acid / 10% cyclodextrin used; Controls received mp w/ vehicle; animal info (male, Sprague-Dawley, 330-380 g); behavioral testing (AMPH-induced locomotion, within-session habituation, acoustic startle response, novel object recognition); HAL is an antipsychotic drug that targets the postsynaptic D2 receptors; schizophrenia induced by amphetamine-sensitization-induced psychosis model;

Q7829: T. Hashimoto*, et al.* Lack of dopamine supersensitivity in rats after chronic administration of blonanserin: Comparison with haloperidol. European Journal of Pharmacology 2018;830(26-32
Agents: Haloperidol; PG-01037 dihydrochloride **Vehicle:** Acetic Acid, glacial; NaOH; Tween 80 Buffered; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;
ALZET Comments: Dose ((haloperidol 0.75 mg/kg/day), PG-01037 (0.6 mg/kg/day)); 2% glacial acetic acid/H2O solution (pH 3.6 w/ NaOH) with 0.5% Tween 80 used; Controls received mp w/ vehicle; animal info (7 weeks, male, Wistar); post op. care (antibiotic treatment; identity not stated); behavioral testing (Quinpirole-induced hyperlocomotion); comparison of oral administration of haloperidol vs mp; PG-01037 is a selective dopamine D3 antagonist; minipumps were removed 14 days after implantation. "In this study, we were unable to use an osmotic pump for continuous administration of blonanserin due to poor solubility in the vehicle used for haloperidol." p.31;

Q7821: D. Groos*, et al.* Chronic antipsychotic treatment targets GIRK current suppression, loss of long-term synaptic depression and behavioural sensitization in a mouse model of amphetamine psychosis. J Psychopharmacol 2018;269881118812235

Agents: haloperidol; olanzapine **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: "Dose ((Hal 0.5 mg/kg/d), (Ola 10 mg/kg/d)); Controls received mp w/ vehicle; animal info (6-12 weeks, male, C57BL/6 or homo- and heterozygous C57Bl6-D2eGFP); behavioral testing (TruScan open field); Resultant plasma level ((Hal 5.85 ± 0.27 ng/mL), (Ola 45.93 ± 5.72 ng/mL)); haloperidol (Hal) and olanzapine (Ola) are antipsychotic drugs; "Furthermore, in animal studies, APDs were often administered with regimens that fail to achieve the high D2R occupancy (>70%) required to yield therapeutic benefits (Farde et al., 1988; Kapur and Mamo, 2003; Kapur et al., 2003). To overcome such limitations, we delivered haloperidol or olanzapine via implanted osmotic mini-pumps, which offers a reliable method to obtain clinically meaningful levels of D2R blockade (Amato et al., 2011; Amato et al., 2018; Samaha et al., 2007, 2008)." pg.75 ; Vehicle control used but identity not stated. Brain concentration of agents include ((Hal 3.42 ± 0.42 ng/g), (Ola 26.32 ±
1.78 ng/g)); Therapeutic indication (chronic Hal- and Ola-treatments were able to at least partially reverse the AMPH-induced psychotic state by reversing the effects of amphetamines on reducing surface expression of GIRK channels);
"

Q7103: A. Calevro*, et al.* Effects of chronic antipsychotic drug exposure on the expression of Translocator Protein and inflammatory markers in rat adipose tissue. Psychoneuroendocrinology 2018;95(28-33
Agents: Haloperidol, olanzapine **Vehicle:** Cyclodextrin, 2-Hydroxypropyl-B-; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 8 weeks;
ALZET Comments: Dose (Haloperidol- 2mg/ kg/ day, Olanzapine-10 mg/kg/ day); Controls received mp w/ vehicle; animal info (10-week old, male, Sprague-Dawley, 240–250 g); pumps replaced every 4 weeks; long-term study; dependence;

5. Olanzapine

Q7450: J. Cunningham*, et al.* F160. Samidorphan, an Opioid Receptor Antagonist, Mitigates Olanzapine-Induced Metabolic Dysfunction in Female Rats. Biological Psychiatry 2019;85(10):
Agents: Olanzapine, Samidorphan **Vehicle:** Not stated; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 2 days;
ALZET Comments: animal info (Female,); Olanzapine aka OLZ, Samidorphan aka SAM; dependence;

Q7821: D. Groos*, et al.* Chronic antipsychotic treatment targets GIRK current suppression, loss of long-term synaptic depression and behavioural sensitization in a mouse model of amphetamine psychosis. J Psychopharmacol 2018;269881118812235
Agents: haloperidol; olanzapine **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;
ALZET Comments: "Dose ((Hal 0.5 mg/kg/d), (Ola 10 mg/kg/d)); Controls received mp w/ vehicle; animal info (6-12 weeks, male, C57BL/6 or homo- and heterozygous C57Bl6-D2eGFP); behavioral testing (TruScan open field); Resultant plasma level ((Hal 5.85 ± 0.27 ng/mL), (Ola 45.93 ± 5.72 ng/mL)); haloperidol (Hal) and olanzapine (Ola) are antipsychotic drugs; "Furthermore, in animal studies, APDs were often administered with regimens that fail to achieve the high D2R occupancy (>70%) required to yield therapeutic benefits (Farde et al., 1988; Kapur and Mamo, 2003; Kapur et al., 2003). To overcome such limitations, we delivered haloperidol or olanzapine via implanted osmotic mini-pumps, which offers a reliable method to obtain clinically meaningful levels of D2R blockade (Amato et al., 2011; Amato et al., 2018; Samaha et al., 2007, 2008)." pg.75 ; Vehicle control used but identity not stated. Brain concentration of agents include ((Hal 3.42 ± 0.42 ng/g), (Ola 26.32 ±
1.78 ng/g)); Therapeutic indication (chronic Hal- and Ola-treatments were able to at least partially reverse the AMPH-induced psychotic state by reversing the effects of amphetamines on reducing surface expression of GIRK channels);
"

Q7793: E. Courty*, et al.* Antenatal antipsychotic exposure induces multigenerational and gender-specific programming of adiposity and glucose tolerance in adult mouse offspring. Diabetes & Metabolism 2018;44(3):281-291
Agents: Olanzapine **Vehicle:** DMSO; Ethanol; Propylene Glycol; **Route:** SC; **Species:** Mice; **Pump:** 1002; **Duration:** 2 weeks;
ALZET Comments: Dose (4 mg/kg/day); Controls received mp w/ vehicle; animal info (Female, Pregnant); Olanzapine aka OLZ; dependence; 42.5% DMSO, 42.5% propylene glycol and 15% ethanol used;

Q7103: A. Calevro*, et al.* Effects of chronic antipsychotic drug exposure on the expression of Translocator Protein and inflammatory markers in rat adipose tissue. Psychoneuroendocrinology 2018;95(28-33
Agents: Haloperidol, olanzapine **Vehicle:** Cyclodextrin, 2-Hydroxypropyl-B-; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 8 weeks;
ALZET Comments: Dose (Haloperidol- 2mg/ kg/ day, Olanzapine-10 mg/kg/ day); Controls received mp w/ vehicle; animal info (10-week old, male, Sprague-Dawley, 240–250 g); pumps replaced every 4 weeks; long-term study; dependence;

Q5988: A. Stefanidis*, et al.* Prevention of the adverse effects of olanzapine on lipid metabolism with the antiepileptic zonisamide. Neuropharmacology 2017;123(55-66
Agents: Olanzapine **Vehicle:** Lactic acid; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley , female); half-life (2.5 hours) ; Therapeutic indication (Antipsychotic drugs); Dose (6 mg/kg/day);

6. Quetiapine

Q6104: K. Chikama*, et al.* Chronic atypical antipsychotics, but not haloperidol, increase neurogenesis in the hippocampus of adult mouse. Brain Res 2017;1676(77-82
ALZET Comments: Haloperidol; quetiapine; aripiprazole; clozapine; olanzapine; risperidone; IP; Mice; 1004; 21 days; Dose (haloperidol 1 mg/kg/d, quetiapine 20 mg/kg/d, aripiprazole 3 mg/kg/d, clozapine 20 mg/kg/d, olanzapine 2 mg/kg/d, risperidone 0.5 mg/kg/d); Controls received mp w/ vehicle; “It is known that osmotic pumps serve some preferable aspect such as to reduce stress to the animals, minimize unwanted experimental variables, and hold the drug concentration constant” pg. 80;.

Q5063: N. Ito*, et al.* Contribution of protein binding, lipid partitioning, and asymmetrical transport to drug transfer into milk in mouse versus human. Pharm Res 2013;30(9):2410-22
ALZET Comments: acetaminophen, cephalothin sodium salt, clindamycin hydrochloride, disopyramide phosphate salt, labetalol hydrochloride, nitrofurantoin +-propranolol hydrochloride, terbutaline hemisulfate salt, verapamil hydrochloride, Acyclovir, alprazolam, atenolol, anhydrous caffeine, cefotaxime sodium salt, cephapirin sodium salt, diltiazem hydrochloride, metronidazole, nitrazepam, prednisolone, 6-propyl-2-thiouracil, trazadone hydrochloride, chloramphenicol, cimetidine, theophylline, fluconazole, metoprolol, mirtazapine, praziquantel, quetiapine fumarate, triprolidine hydrochloride, metformin, moclobemide.; DMSO; water; IP; mice; 1003D; animal info: lactating mice, postnatal age of 14 days; functionality of mp verified by measurement of drug concentration in milk and plasma; mp were used to infuse study lactational drug transfer.

P5912: F. I. Tarazi*, et al.* Long-term effects of olanzapine, risperidone, and quetiapine on ionotropic glutamate receptor types: Implications for antipsychotic drug treatment. Journal of Pharmacology and Experimental Therapeutics 2003;306(3):1145-1151
ALZET Comments: Olanzapine; risperidone; quetiapine fumerate; SC; Rat; 28 days; Functionality of mp verified by residual volume; antipsychotic drugs.

P6169: S. Kapur*, et al.* Antipsychotic Dosing in Preclinical Models is Often Unrepresentative of the Clinical Condition: A Suggested Solution Based on in Vivo Occupancy. Journal of Pharmacology and Experimental Therapeutics 2003;305(2):625-631
ALZET Comments: Haloperidol; olanzapine; risperidone; quetiapine; clozapine; Water; acetic acid, glacial; SC; Rat; 2ML2; 7 days; Plasma levels taken; dose-response (p. 629); comparison of daily injections vs. chronic mp; half-life (p. 626) 2-4 hours; haloperidol and risperidone were dissolved in distilled water; olanzapine, quetiapine and clozapine were dissolved in 1% to 2% acetic acid; great dose information; "we propose that only administration by pump (or administration more than four times a day[injections]) can provide clinical-like occupancies for haloperidol, olanzapine, and risperidone." p. 630.

P5866: F. I. Tarazi*, et al.* Long-term effects of newer antipsychotic drugs on neuronal nitric oxide synthase in rat brain. NITRIC OXIDE-BIOLOGY AND CHEMISTRY 2002;7(4):297-300

ALZET Comments: Olanzapine; risperidone; quetiapine fumerate; SC; Rat; 28 days; Controls received mp w/ vehicle; antipsychotic agents.

7. Remoxipride

P2736: J. Georgieva*, et al.* Neurochemical effects of prolonged treatment with remoxipride as assessed by intracerebral microdialysis in freely moving rats. Prog. Neuro-Psychopharmacol. Biol. Psychiat 1994;18(1187-1201
ALZET Comments: Remoxipride HCl; Sodium chloride; SC; Rat; 2002; 14 days; controls received sodium chloride; functionality of mp verified by checking blood levels of drug and determining residual drug amount; comparison of sc injections vs mp; remoxipride is an antipsychotic drug.

P2204: H. Ericson*, et al.* Subchronic treatment of rats with remoxipride fails to modify sigma binding sites in the brain. Eur. J. Pharmacol. - Mol. Pharmacol. Sect 1992;226(157-161
ALZET Comments: Remoxipride HCl; Haloperidol; Water; Acetic acid; SC; Rat; 3,14 days; controls received sham operations.

8. Risperidone

Q8240: T. A. Lanz*, et al.* Postmortem transcriptional profiling reveals widespread increase in inflammation in schizophrenia: a comparison of prefrontal cortex, striatum, and hippocampus among matched tetrads of controls with subjects diagnosed with schizophrenia, bipolar or major depressive disorder. Transl Psychiatry 2019;9(1):151
Agents: Haloperidol or Risperidone **Vehicle:** Acetic Acid; **Route:** CSF/CNS; **Species:** Rat; **Pump:** Not stated; **Duration:** 21 days;
ALZET Comments: Dose (haloperidol-0.25 mg/kg/day or risperidone-5 mg/kg/day); 1% Acetic Acid used; Controls received mp w/ vehicle; animal info (2 months old, Sprague Dawley, Male); neurodegenerative (Psychiatric Disorder);

Q8159: N. Amada*, et al.* Brexpiprazole has a low risk of dopamine D2 receptor sensitization and inhibits rebound phenomena related to D2 and serotonin 5-HT2A receptors in rats. Neuropsychopharmacol Rep 2019;39(4):279-288
Agents: Risperidone **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 22 days;
ALZET Comments: Dose (1.5 mg/kg/d); animal info (male Wistar rats, 7 weeks old); neurodegenerative (schizophrenia thought to be caused by dopamine D2 receptor sensitization);

Q6104: K. Chikama*, et al.* Chronic atypical antipsychotics, but not haloperidol, increase neurogenesis in the hippocampus of adult mouse. Brain Research 2017;1676(77-82
Agents: Haloperidol; quetiapine; aripiprazole; clozapine; olanzapine; risperidone **Vehicle:** Not Stated; **Route:** IP; **Species:** Mice; **Pump:** 1004; **Duration:** 21 days;
ALZET Comments: Dose (haloperidol 1 mg/kg/d, quetiapine 20 mg/kg/d, aripiprazole 3 mg/kg/d, clozapine 20 mg/kg/d, olanzapine 2 mg/kg/d, risperidone 0.5 mg/kg/d); Controls received mp w/ vehicle; “It is known that osmotic pumps serve some preferable aspect such as to reduce stress to the animals, minimize unwanted experimental variables, and hold the drug concentration constant” pg. 80;

Q5070: B. L. Teng*, et al.* Reversal of social deficits by subchronic oxytocin in two autism mouse models. Neuropharmacology 2016;105(61-71
Agents: Risperidone **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1002; 1007D; **Duration:** 21 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (C58/J); pumps replaced every 14 days; behavioral testing (chamber choice task; acoustic startle test; marble burying assay); “This pump replacement allowed dosage to be adjusted for increased body weight during the chronic risperidone treatment.“ pg 62-63; Dose (2 mg/kg/day); used clozapine slow-release pellets because of drug solubility for osmotic minipumps (pg.62);

Q1929: E. C. Muly*, et al.* Relationship between Dose, Drug Levels, and D2 Receptor Occupancy for the Atypical Antipsychotics Risperidone and Paliperidone. Journal of Pharmacology and Experimental Therapeutics 2012;341(1):81-89

Agents: Risperidone; paliperidone **Vehicle:** Not Stated; **Route:** Intragastric; **Species:** Monkey (macaca mulata); **Pump:** Not Stated; **Duration:** 2 weeks;
ALZET Comments: Animal info (male, Rhesus, 4.2-6.3 years old); pumps replaced; 2-week pump replaced with 4-week pump containing saline for a washout period. 4-week pump was then replaced with 2-week pump to continue dosing

9. Spiperone

P1288: T. S. Shippenberg*, et al.* Motivational effects of opioids; influence of D-1 versus D-2 receptors antagonists. Eur. J. Pharmacol 1988;151(233-242
ALZET Comments: Spiperone; SCH-23390; DMSO; Water; SC; Rat; 2001; 2ML1; 7 days; functionality of mp verified after delivery; dopamine antagonist.

10. Sulpiride

P2115: L.-W. Zhou*, et al.* Triazolam blocks the initial rotational effects of quinpirole but permits the later developing reduction of dopamine D2-mediated rotational behavior and dopamine D2 receptors. Eur. J. Pharmacol 1992;218(219-227
ALZET Comments: Quinpirole HCl; Sulpiride; Triazolam; Ascorbic acid; DMSO; SC; mice; 2001; 6 days; Quinpirole is a dopamine agonist; antidepressant; stability verified in vitro for 7 days.

P1444: H. Ueda. Time course study of changes in the activity of rats during intraventricular infusion of 6-hydroxydopamine, haloperidol and sulpiride: a study of the relationship between an origin of the negative symptoms in schizophrenia and catecholamines. J. Iwate Med. Assoc 1988;40(3):385-398
ALZET Comments: Dopamine, 6-hydroxy-; Haloperidol; Sulpiride; CSF/CNS; Rat; 8 days; Japanese, English abstract.

P0630: B. Costall*, et al.* The continuity of dopamine receptor antagonism can dictate the long-term behavioural consequences of a mesolimibic infusion of dopamine. Neuropharmacology 1985;2(3):193-197
ALZET Comments: Dopamine HCl; Sulpiride; Nitrogen; Sodium metabisulfite; CSF/CNS (nucleus accumbens); IP; Rat; 13 days; mp model not stated; comparison of SULP ip injec vs. mp infusion; 2 mp/rat - bilateral infusion; mp primed overnight; vehicles listed used w/DOP; concomitant SULP admin. ip.

11. Trifluoperazine

P0144: G. G. Dougherty Jr*, et al.* Amphetamine behavioral toxicity: rotational behavior after chronic intrastriatal infusion. Biol. Psychiatry 1981;16(5):479-488
ALZET Comments: Trifluoperazine; Amphetamine sulfate, d-; Saline; CSF/CNS (corpus striatum); Rat; 7 days; caudate putamen.