Recent References (2015-Present) on the Administration of Antidepressants Using ALZET® Osmotic Pumps

### Amitriptyline


**Agents**: Amitriptyline  
**Vehicle**: Saline;  
**Route**: SC;  
**Species**: Rat;  
**Pump**: Not Stated;  
**Duration**: 14 days;  
**ALZET Comments**: Dose (12 mg/kg/day); Controls received mp w/ vehicle; animal info (Sprague-Dawley rats weighing 175–200 g); Resultant plasma level (brain AMIT levels reached 1350 ± 210 μg/g (corresponding to 4.87 ± 0.76 μM), a value about 25 fold higher than that in serum: 55.3 ± 5.4 ng/ml (corresponding to 199.35 ± 19.47 nM));

### Bupropion


**Agents**: Bupropion hydrochloride, naltrexone hydrochloride  
**Vehicle**: Saline;  
**Route**: SC;  
**Species**: Rat;  
**Pump**: 2ML2;  
**Duration**: 12 days;  
**ALZET Comments**: Dose (40 mg/kg/day BUP, 4 mg/kg/day NTX); Controls received sham surgery; animal info (Adult male Sprague-Dawley rats weighing 200-250 g); behavioral testing (locomotion tests); Drugs administered together or in separate pumps; Contrave® is an adjunct pharmacotherapy for obesity that contains bupropion and naltrexone;  

**Q3871**: M. El Mansari, et al. Restoration of Serotonin Neuronal Firing Following Long-Term Administration of Bupropion but Not Paroxetine in Olfactory Bullectomized Rats. INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY 2015;18(U87-U94

**Agents**: Bupropion; paroxetine  
**Vehicle**: Water; ethanol;  
**Route**: SC;  
**Species**: Rat;  
**Duration**: 2 days; 14 days; 28 days;  
**ALZET Comments**: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 300-500g, olfactory bulbectomized); 50% ethanol used; behavioral testing (open field);

### Citalopram


**Agents**: Citalopram hydrobromide  
**Vehicle**: Saline;  
**Route**: SC;  
**Species**: Mice;  
**Pump**: Not Stated;  
**Duration**: 7 days; 14 days;  
**ALZET Comments**: Dose (10 mg/kg/day); animal info (Eight‐week‐old, young adult male mice); ischemia (intestinal);


**Agents**: Citalopram hydrobromide  
**Vehicle**: Not stated;  
**Route**: SC;  
**Species**: Mice (knockout);  
**Pump**: 2002;  
**Duration**: 6 days;  
**ALZET Comments**: Controls receive mp w/ vehicle; animals C57BL/6J; 18-23 grams, 7-10wk); Citalopram (10, 100 mg/kg/day);


**Agents**: Citalopram hydrobromide  
**Vehicle**: Not stated;  
**Route**: SC;  
**Species**: Mice;  
**Pump**: Not Stated;  
**Duration**: 7 days;  
**ALZET Comments**: Dose (10 mg/kg/d); animal info (8-10ewk old male mice); dependence;
Agents: Citalopram Vehicle: Saline; Route: Not Stated; Species: Mice; Pump: 1002; Duration: 4 weeks, 6 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (6-9 weeks) cardiovascular; Therapeutic indication (MI, Myocardial Infarction); Dose (9.6 mg/kg/day);

Agents: Citalopram HBr Vehicle: Saline; Route: SC; Species: Rat; Pump: 2ML4; Duration: 21 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague-Dawley, GD); functionality of mp verified by residual volume; post op. care (ibuprofen 15 mg/kg in drinking water for 7 days); post op. care (ibuprofen 15 mg/kg in drinking water for 7 days); teratology; Therapeutic indication (post partum stress); Dose (10 mg/kg/day);

Q4628: A. K. D. Visser, et al. Serotonin-2C antagonism augments the effect of citalopram on serotonin and dopamine levels in the ventral tegmental area and nucleus accumbens. NEUROCHEMISTRY INTERNATIONAL 2015;81(10-15
Agents: Citalopram HBr Vehicle: Water, Ultra Pure; Route: SC; Species: Rat; Pump: Not Stated; Duration: 2 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Wistar, 10 weeks old, 332+/−14g);

Clomipramine
Agents: methadone; escitalopram; venlafaxine; desipramine; clomipramine Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 2002; Duration: 14 days;
ALZET Comments: Dose: methadone (0.5 mg/kg) venlafaxine (2.5 mg/kg); escitalopram (20mg/kg); desipramine (1mg/kg); clomipramine (0.5 mg/kg); animal info (Male ICR mice, 25-35g); dependence

Agents: Carbamazepine, baclofen, clomipramine Vehicle: DMSO, PEG, Ethyl Alcohol, Acetone; Route: SC; Species: Rat; Pump: 2ML1; Duration: Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (7 weeks old); dimethyl sulfoxide, propylene glycol, ethyl alcohol, and acetone at a ratio of 42:42:15:1; post op. care (morphine 5 mg/day); behavioral testing (Facial grooming); Therapeutic indication (Trigeminal neuralgia, neuropathic pain);
Dose (30 mg/day carbamazepine (the first-line drug treatment for trigeminal neuralgia), 1.06 mg/day baclofen, 4.18 mg/day clomipramine, and 5 mg/day morphine);

Despramine
Q6946: C. Alba-Delgado, et al. The onset of treatment with the antidepressant desipramine is critical for the emotional consequences of neuropathic pain. Pain 2018;159(12):2606-2619
Agents: Desipramine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2ML2; Duration: 2 weeks;
ALZET Comments: Dose (10 mg/kg/day); Controls received mp w/ vehicle; animal info (45-55 day old male Sprague–Dawley rats weighing 200-250 g); Therapeutic indication (neuropathy);
**ALZET® Bibliography**

**Q6771:** S. Schreiber, *et al.* Interaction between methylphenidate, methadone and different antidepressant drugs on antinociception in mice, and possible clinical implications. World J Biol Psychiatry 2017;18(4):300-307
*Agents:* methadone; escitalopram; venlafaxine; desipramine; clomipramine *Route:* SC; *Species:* Mice; *Pump:* 2002; *Duration:* 14 days;
*ALZET Comments:* Dose: methadone (0.5 mg/kg) venlafaxine (2.5 mg/kg); escitalopram (20mg/kg); desipramine (1mg/kg); clomipramine (0.5 mg/kg); animal info (Male ICR mice, 25-35g); dependence

**Q9008:** A. P. Shah, *et al.* Role of TrkB in the anxiolytic-like and antidepressant-like effects of vagal nerve stimulation: Comparison with desipramine. Neuroscience 2016;322(273-86)
*Agents:* Desipramine HCl *Vehicle:* Distilled Water; *Route:* IP; *Species:* Rat; *Pump:* 2ML4; *Duration:* 24 days;
*ALZET Comments:* Dose (10 mg/kg/day); Controls received mp w/ vehicle; animal info (Adult male Sprague–Dawley rats, 250–400 g, 8 weeks old); behavioral testing (Novelty Suppressed Feeding Test; Forced Swim Test); Desipramine HCl aka DMI; dependence

**Q6094:** L. Deng, *et al.* Prophylactic treatment with the tricyclic antidepressant desipramine prevents development of paclitaxel-induced neuropathic pain through activation of endogenous analgesic systems. Pharmocol Res 2016;114(75-89)
*Agents:* Desipramine, nalfinoxine, AM251, AM630 *Vehicle:* Water, saline, PEG 400, DMSO; *Route:* SC; *Species:* Rat; *Pump:* 2ML4; *Duration:* 28 days;
*ALZET Comments:* Dose: Desipramine (10 mg/kg/d), Naloxone (12 mg/kg/d), AM251 (3 mg/kg/d), AM630 (3 mg/kg/day); Desipramine dissolved distilled water, naloxone dissolved in saline, AM251 and AM630 dissolved in 50% PEG400 and 50% DMSO; Controls received mp w/ vehicle; animal info (Sprague-Dawley rats weighing 275–350 g); Multiple pumps per animal (2 when given the treatment of 2 different agents), Desipramine,vehicle, all antagonists delivered in separate osmotic pumps;

**Q5315:** L. Bravo, *et al.* Effect of DSP4 and desipramine in the sensorial and affective component of neuropathic pain in rats. Prog Neuropsychopharmacol Biol Psychiatry 2016;70(57-67)
*Agents:* Desipramine *Vehicle:* Saline; *Route:* SC; *Species:* Rat; *Pump:* 2ML2; *Duration:* 2 weeks;
*ALZET Comments:* Controls received mp w/ vehicle; animal info (Adult male Harlan Sprague-Dawley rats, 200–250 g);

**Escitalopram**

**Q8863:** J. L. Jiang, *et al.* Triple reuptake inhibition of serotonin, norepinephrine, and dopamine increases the tonic activation of alpha2-adrenoceptors in the rat hippocampus and dopamine levels in the nucleus accumbens. Progress in Neuropsychopharmacology & Biological Psychiatry 2020;103(109987
*Agents:* Nomifensine; Escitalopram *Vehicle:* 2-Hydroxypropyl-beta-cyclodextrin; *Route:* SC; *Species:* Rat; *Pump:* Not Stated; *Duration:* 2 days; 14 days;
*ALZET Comments:* Dose (5 mg/kg/day Nomifensine; 10 mg/kg/day Escitalopram); 20% 2-Hydroxypropyl-beta-Cyclodextrin used; Controls received mp w/ vehicle; animal info (Adult male Sprague-Dawley rats weighing 250–350 g); Multiple pumps per animal (2 pumps); dependence

**Q8649:** M. El Mansari, *et al.* Long-term administration of cariprazine increases locus coeruleus noradrenergic neurons activity and serotonin1A receptor neurotransmission in the hippocampus. Journal of Psychopharmacology 2020;34(10):1143-1154
*Agents:* Escitalopram *Vehicle:* Not Stated; *Route:* SC; *Species:* Rat; *Pump:* 1003D; 2ML2; *Duration:* 2 days; 14 days;
*ALZET Comments:* Dose (5 and 10 mg/kg/day); Controls received mp w/ vehicle; animal info (Male Sprague-Dawley rats, 280-320 g)

**Q6998:** K. L. Smith, *et al.* Opioid system modulators buprenorphine and samidorphan alter behavior and extracellular neurotransmitter concentrations in the Wistar Kyoto rat. Neuropharmacology 2019;146(316-326
*Agents:* Escitalopram *Vehicle:* Not Stated; *Route:* SC; *Species:* Rat; *Pump:* 2ML4; *Duration:* 14 days;
*ALZET Comments:* Dose (10 mg/kg/day); animal info (Wistar Kyoto rat); behavioral testing (Forced swim test, Marble burying test); dependence;
Q6975: M. Ebrahimzadeh, et al. Synergistic effect of aripiprazole and escitalopram in increasing serotonin but not norepinephrine neurotransmission in the rat hippocampus. Neuropharmacology 2019;146(12-18)

**Agents:** Escitalopram **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 1003D, 2ML2; **Duration:** 2days, 14 days;

**ALZET Comments:** Dose (5 mg/kg/day); animal info (Male Sprague-Dawley rats, 280-320 gr);


**Agents:** Escitalopram-oxalate **Vehicle:** 0.3 N HCl; Distilled Water; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 21 days;

**ALZET Comments:** “Dose (10 mg/kg/day); Controls received mp w/ vehicle; animal info (Male Wistar Rats 250–280 g); no stress (see pg. 348 “All efforts were made to minimize pain, suffering and discomfort of the animals.”); Depression study; ”


**Agents:** methadone; escitalopram; venlafaxine; desipramine; clomipramine **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

**ALZET Comments:** Dose: methadone (0.5 mg/kg) venlafaxine (2.5 mg/kg); escitalopram (20mg/kg); desipramine (1mg/kg); clomipramine (0.5 mg/kg); animal info (Male ICR mice, 25-35g); dependence


**Agents:** Escitalopram **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 2 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (175-200 g); post op. care (an analgesic (Buprenorfine: 0.5 mg/kg p.o every 12 h) and a prophylactic antibiotic (Enofloxacina 7.5 mg/kg s.c.) given during 2-3 consecutive days after surgery); Therapeutic indication (medial prefrontal cortex, electrophysiology); Dose (10 mg/kg/day);


**Agents:** Fluoxetine hydrochloride; escitalopram hydrochloride **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 1007D; 1002; **Duration:** 2, 21, 28 days;

**ALZET Comments:** animal info (male, WT or 5-HT2A mutant, 10-14 weeks old, 25-35g); behavioral testing (tail suspension test; novelty surpassed feeding); fluoxetine dose (18 mg/kg, free base)


**Agents:** Vortioxetine; escitalopram **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 2 days; 14 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague Dalwey, adult, 250-300g); Dose (Vortioxetine 5 mg/kg/day; escitalopram 5 mg/kg/day);


**Agents:** Escitalopram oxalate **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** Not Stated;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (female, nulliparious Sprague Dalwey, 200-225g); behavioral testing (open field, social interaction, novel object recognition, elevated plus maze; teratology;
Fluoxetine


*Agents*: XAV939; Fluoxetine *Vehicle*: DMSO, PBS and Tween 20; *Route*: CSF/CNS (lateral ventricle); *Species*: Mice; *Pump*: 1004; *Duration*: 7 days;

*ALZET Comments*: Dose ((XAV939 1mM at 0.5 μL/h), (fluoxetine 18 mg/kg/day)); 3% DMSO, 0.2% Tween 20 in PBS (pH 7.4); Controls received mp w/ vehicle; animal info (10-12 weeks, male, C57); behavioral testing (open field, sucrose preference, novelty-suppressed feeding, forced swim test); therapeutic indication (inc amplification of adult neural progenitor cells and neuron production in hippocampus and ameliorated depression-like behaviors induced by chronic restraint stress);

**Q7074**: C. Li, et al. Chronic fluoxetine treatment accelerates kindling epileptogenesis in mice independently of 5-HT2A receptors. Epilepsia 2018;59(7):e114-e119

*Agents*: Fluoxetine hydrochloride *Vehicle*: DMSO; Saline; *Route*: SC; *Species*: Mice; *Pump*: Not Stated; *Duration*: Not Stated;

*ALZET Comments*: 50% DMSO used; Controls received mp w/ vehicle; animal info (Male mice aged 11-14 weeks);


*Agents*: Fluoxetine hydrochloride; escitalopram hydrochloride *Vehicle*: Saline; *Route*: SC; *Species*: Mice; *Pump*: 1007D; 1002; *Duration*: 2, 21, 28 days;

*ALZET Comments*: animal info (male, WT or 5-HT2A mutant, 10-14 weeks old, 25-35g); behavioral testing (tail suspension test; novelty surpassed feeding); behavioral testing (tail suspension test; novelty surpassed feeding); fluoxetine dose (18 mg/kg, free base)


*Agents*: Fluoxetine *Vehicle*: DMSO; *Route*: SC; *Species*: Mice (pregnant); *Pump*: 2004; *Duration*: Not Stated;

*ALZET Comments*: Controls received mp w/ vehicle (dimethyl sulfoxide 40%); animal info (CF-1 mice: 5-7 days of gestation); functionality of mp verified by Plasma fluoxetine concentration determined by HPLC with a diode array detector; 40% DMSO used; teratology; “Delivering fluoxetine by osmotic minipumps was less stressful for dams than were oral gavages or injections; this avoided maternal stress, which has consequences on fetal brain development. The plasma concentration of fluoxetine in dams was similar to the reported plasma level in patients under fluoxetine treatment” pg 372; Therapeutic indication (Hypercapnia; respiration); Dose (7 mg/kg/day);


*Agents*: Paroxetine; fluoxetine *Vehicle*: DMSO; water; *Route*: SC; *Species*: Mice; *Pump*: 1002; *Duration*: 4 weeks;

*ALZET Comments*: Controls received mp w/ vehicle; animal info (male, C57BL6, myocardial infarction); functionality of mp verified by serum levels; ischemia (cardiac); Dose: paroxetine or fluoxetine (5 mg/kg/d)

**Q4282**: I. Rayen, et al. Developmental exposure to SSRIs, in addition to maternal stress, has long-term sex-dependent effects on hippocampal plasticity. PSYCHOPHARMACOLOGY 2015;232(1231-1244

*Agents*: Fluoxetine *Vehicle*: Propylenediol; saline; *Route*: SC; *Species*: Rat; *Pump*: 2ML4; *Duration*: 4 weeks;

*ALZET Comments*: Controls received mp w/ vehicle; animal info (female, Sprague Dawley, adult, 250-300g); 50% propylenediol used; teratology; “These implants also reduced the effect of stress associated with repeated injections or oral gavage.” pg 1233;

**Q4327**: C. Betry, et al. Effect of the multimodal acting antidepressant vortioxetine on rat hippocampal plasticity and recognition memory. PROGRESS IN NEURO-PsyCHOPHARMACOLOGY & BIOLOGICAL PSYCHIATRY 2015;58(38-46

*Agents*: Vortioxetine; fluoxetine; SR57227 *Vehicle*: Cyclodextrin, 2-hydroxypropyl-b-; *Route*: SC; *Species*: Rat; *Duration*: 1 day; 3 days; 14 days;

*ALZET Comments*: Controls received mp w/ fluoxetine as positive control; animal info (male, Sprague Dawley, 260-320g); behavioral testing (object recognition testing);
Imipramine

Agents: Imipramine Vehicle: PBS; Route: SC; Species: Mice; Pump: Not Stated; Duration: 6 weeks, 10 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (C57BL/6, 6-8 weeks); The incision was closed with vetbond. Post-op treatment: buprenorphine (0.05-0.10 mg/kg SC; Therapeutic indication (Pulmonary disease, silicosis);

Lithium

Agents: Haloperidol; Lithium Chloride; Olanzapine Vehicle: Cyclodextrin, 2-Hydroxypropyl-B-; Route: SC; Species: Rat; Pump: 2ML4; Duration: 28 days;
ALZET Comments: Dose (0.5 mg/kg/day Haloperidol; 2 mmol/L/kg/day Lithium Chloride; 7.5 mg/kg/day Olanzapine); Controls received mp w/ vehicle; animal info (Male Sprague-Dawley rats, 220-270 g, 6-10 weeks old);

Agents: Lithium chloride Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2ML4; Duration: 4 days;
ALZET Comments: Dose (84.8 mg/kg/day); Controls received mp w/ vehicle; animal info (Female, Sprague Da);

Agents: Lithium Chloride Vehicle: Water; Route: SC; Species: Rat; Pump: 2001D; Duration: 1 day;
ALZET Comments: Dose (750 mM/day); Controls received mp w/ vehicle; animal info (Sprague–Dawley, 150-250 g);

Milnacipran

Agents: Paroxetine hydrochloride; Milnacipran hydrochloride; Mirtazapine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2ML4; Duration: 14 days;
ALZET Comments: Dose (Paroxetine: 10 mg/kg; milnacipran: 30 mg/kg; mirtazapine 10 mg/kg); Controls received mp w/ vehicle; animal info (Male adult Wistar rats weighing 180–200 g);

Mirtazapine

Agents: Pramipexole HCL; Mirtazapine Vehicle: Pramipexole HCL; Mirtazapine; Route: SC; Species: Rat; Pump: 2002, 2ML4; Duration: 12 - 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (250-300 g, male Sprague-Dawley rats); For mirtazapine, saline brought to 5.5-6.0 pH with 1 N NaOH; good methods (pg. 79); neurodegenerative (Parkinson’s disease); behavioral testing (forelimb step task); Dose (PPX 0.3 and 1.2 mg/kg/day; Mirtazapine 5 mg/kg/day);
Nomifensine
Q8863: J. L. Jiang, et al. Triple reuptake inhibition of serotonin, norepinephrine, and dopamine increases the tonic activation of alpha2-adrenergic receptors in the rat hippocampus and dopamine levels in the nucleus accumbens. Progress in Neuropsychopharmacology & Biological Psychiatry 2020;103(109987)
Agents: Nomifensine; Escitalopram Vehicel: 2-Hydroxypropyl-B-cyclodextrin; Route: SC; Species: Rat; Duration: 2, 14 days; ALZET Comments: Dose (5 mg/kg/day Nomifensine; 10 mg/kg/day Escitalopram); 20% 2-Hydroxypropyl-B-Cyclodextrin used; Controls received mp w/ vehicle; animal info (Adult male Sprague-Dawley rats weighing 250–350 g);

Paroxetine
Agents: Paroxetine hydrochloride; Milnacipran hydrochloride; Mirtazapine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2ML4; Duration: 14 days; ALZET Comments: Dose (Paroxetine: 10 mg/kg; milnacipran: 30 mg/kg; mirtazapine 10 mg/kg); Controls received mp w/ vehicle; animal info (Male adult Wistar rats weighing 180–200 g);

Agents: Paroxetine Vehicle: Not Stated; Route: SC; Species: Mice (transgenic); Pump: 2ML4; Duration: Not Stated; ALZET Comments: Controls received mp w/ saline; animal info (male, bp120 tg, adult, 8-9 weeks old);

Agents: Paroxetine, fluoxetine Vehicle: DMSO; water; Route: SC; Species: Mice; Pump: 2ML4; Duration: 4 weeks; ALZET Comments: Controls received mp w/ vehicle; animal info (male, C57BL6, myocardial infarction); functionality of mp verified by serum levels; ischemia (cardiac); Dose: paroxetine or fluoxetine (5 mg/kg/d)

Q3871: M. El Mansari, et al. Restoration of Serotonin Neuronal Firing Following Long-Term Administration of Bupropion but Not Paroxetine in Olfactory Bullectomized Rats. INTERNATIONAL JOURNAL OF NEUROPSYCHOPHARMACOLOGY 2015;18(U87-U94
Agents: Bupropion; paroxetine Vehicle: Water; ethanol; Route: SC; Species: Rat; Duration: 2 days; 14 days; 28 days; ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 300-500g, olfactory bulbectomized);

Phenelzine
Agents: Cyclosporine A, Phenelzine Vehicle: Saline; Cremophor; EtOH; Route: SC; Species: Rat; Pump: 2ML1; Duration: 3 days;
ALZET Comments: Dose (10 mg/kg/day); Controls received mp w/ vehicle; animal info (3 months old, Sprague Dawley); neurodegenerative (Traumatic Brain Injury); 50mg/mL in saline/650 mg Cremophor/32.9% ethanol/ mL;

Reboxetine
Agents: Reboxetine Vehicle: Saline; Route: SC; Species: Mice; Pump: 2004; Duration: 28 days; ALZET Comments: Dose (10 mg/kg/day); Controls received mp w/ vehicle; animal info (7 month old male WT and heterozygous 5xFAD mice); half-life (p. 2; 12.5 hr); neurodegenerative (Alzheimer’s);
Agents: Reboxetine Mesylate Vehicle: Saline; Route: SC; Species: Mice; Pump: 2004; Duration: 28 days;
ALZET Comments: Dose (10 mg/kg/day); Controls received mp w/ vehicle; animal info (CCL2KO); neurodegenerative (Alzheimer’s Disease);

Sertraline
Agents: Sertraline Vehicle: Ethanol; Route: SC; Species: Rat; Pump: 2001; Duration: 1 week;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 7-8 weeks old, 250-400g); 50% ethanol used; behavioral testing (open field); diabetes; Dose (7.5 mg/kg/day);

Venlafaxine
Agents: methadone; escitalopram; venlafaxine; desipramine; clomipramine Route: SC; Species: Mice; Pump: 2002; Duration: 14 days;
ALZET Comments: Dose: methadone (0.5 mg/kg) venlafaxine (2.5 mg/kg); escitalopram (20mg/kg); desipramine (1mg/kg); clomipramine (0.5 mg/kg); animal info (Male ICR mice, 25-35g); dependence