References on the Administration of Amphetamines Using ALZET® Osmotic Pumps


**Agents:** Amphetamine sulfate, d- **Vehicle:** Saline; **Route:** CSF/CNS (lateral ventricle); **Species:** Rat; **Pump:** 2001; **Duration:** 7 days;

**ALZET Comments:** Dose (); 0.9% Saline used; Controls received mp w/ vehicle; animal info (Male Sprague-Dawley rats, 300-350 g); behavioral testing (locomotion test); d-amphetamine sulfate aka AMPH; ALZET brain infusion kit 2 used; Brain coordinates (0.8 mm posterior, 1.4 mm lateral, 4.5 mm ventral from the bregma); cyanoacrylate adhesive;

Q7057: P. Petschner, et al. Gene expression analysis indicates reduced memory and cognitive functions in the hippocampus and increase in synaptic reorganization in the frontal cortex 3 weeks after MDMA administration in Dark Agouti rats. BMC Medicine 2018;19(1):S80

**Agents:** Methamphetamine, 3,4-methylenedioxy- **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** Not Stated;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (8-week old Dark Agouti rats weighing 152 +/- 3.58 g);


**Agents:** amphetamine **Vehicle:** saline, bacteriostatic; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 7, 13 days;

**ALZET Comments:** Dose (0.1 or 0.32 mg/kg/h); (2ML2 pump 0.5 μl/h); Controls received mp w/ vehicle; animal info (male, Sprague-Dawley, 300-350g); behavioral testing (operant chambers); comparison of IP injection vs mp; dependence;


**Agents:** Amphetamine **Vehicle:** DMSO; acetic acid; water; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 7 days;

**ALZET Comments:** Dose (0.3 or 3 mg/kg/day); animal info (Male Sprague-Dawley rats weighing 300-350 g); dependence


**Agents:** Methamphetamine, 3,4-methylenedioxy **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 10 days;

**ALZET Comments:** Dose (0.3 or 3 mg/kg/day); animal info (Male Sprague-Dawley rats);


**Agents:** Methamphetamine **Vehicle:** saline; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 2 weeks;

**ALZET Comments:** Dose (3.2 mg/kg/day); animal info (Adult male Sprague-Dawley rats (275-320 g)); Methamphetamine aka METH; dependence; Industry authored (InterveXion Therapeutics, LLC);


**Agents:** Methamphetamine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 10 days;

**ALZET Comments:** Animal info (male, Sprague Dawley, adult, 280-310g); functionality of mp verified by blood levels; dependence; cardiovascular;


**Agents:** Methamphetamine hydrochloride **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 7 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 275-300g); functionality of mp verified by elevations in ICSS; behavioral testing (ICSS); dependence; pumps removed after 7 days;

**Agents:** Amphetamine, D-; phenmetrazine  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2001;  
**Duration:** 14 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague-Dawley, 300-350g); pumps replaced every 7 days; behavioral testing (cocaine self-administration, food self-administration); dependence;


**Agents:** Amphetamine, D-;  
**Vehicle:** Saline; sterile;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2001;  
**Duration:** 7 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 12 week old, 350g); behavioral testing (cocaine self-administration); dependence; pumps removed on day 7; used amphetamine concentration of approx 73ug/ml.


**Agents:** Methamphetamine  
**Vehicle:** Not Stated;  
**Route:** IV (femoral);  
**Species:** Rat;  
**Pump:** 2001D;  
**Duration:** 24 hours;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Wistar, 350-500g); functionality of mp verified by plasma serum levels; dose-response (pg.33); behavioral testing (foot fault assessment, morris water maze); pumps implanted in ingualin crease; catheter preloaded with 50% dextrose/50% heparin; pumps removed after 61-65hours;


**Agents:** Methamphetamine Vehicle: Saline;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1002;  
**Duration:** 2 weeks;  
**ALZET Comments:** Animal info (Bmal1 -/-, ); behavioral testing (locomotor activity running wheels); dependence; delayed delivery; catheter filled with saline for 4 day recovery; used plastics one catheter;


**Agents:** Amphetamine Vehicle: Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML4;  
**Duration:** 14 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 311-406g); post op. care (Ketoprofen 5 mg/kg); behavioral testing (cocaine self-administration); dependence; pumps removed after 14 days;

Q5002: M. Iijima, et al. Effect of an mGlu2/3 receptor antagonist on depressive behavior induced by withdrawal from chronic treatment with methamphetamine. Behavioural Brain Research 2013;246(24-8

**Agents:** methamphetamine (MAP);  
**Vehicle:** saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML1;  
**Duration:** 5 days;  
**ALZET Comments:** Animal info: male, Sprague-Dawley, 5 wks old; tolerance studies; dependence; behavioral testing: forced swimming test, locomotor activity; mp used to infuse methamphetamine to induce a withdrawal-like effect in rats to study the effect of LY341495 (mGlu2/3 receptor antagonist) on withdrawal-induced depressive behavior; dose: 2.5, or 5 mg/kg/day


**Agents:** Methamphetamine Vehicle: Not Stated;  
**Route:** IV;  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** 24 hours;  
**ALZET Comments:** Controls received mp w/ saline; animal info. (male, wistar rats, 200-300 g); functionality of mp verified by MRI measurement of fractional anisotropy


**Agents:** Methamphetamine Vehicle: Not Stated;  
**Route:** IV (femoral);  
**Species:** Rat;  
**Pump:** 2001D;  
**Duration:** 24 hours;  
**ALZET Comments:** Control animals received mp w/ saline; animal info (Wistar, male, adult, 400 g); PE50 tubing used


**Agents:** Nicotine; Methamphetamine Vehicle: Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2001;  
**Duration:** 7 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 332-396 g)
**Agents:** Methamphetamine **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 7 days;
**ALZET Comments:** Dose (7 mg/kg/day); Controls received mp w/ vehicle; animal info (adult male Sprague-Dawley rats);
Methamphetamine aka METH; dependence;

**Agents:** Methamphetamine hydrochloride **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 7 days;
**ALZET Comments:** Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 275-300 g); functionality of mp verified via residual volume

**Agents:** Methamphetamine **Vehicle:** Saline, sterile; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 1 week;
**ALZET Comments:** Controls received mp w/ saline; animal info (ICR, 38-55 g); wound clips used; behavioral testing (tail suspension)

**Agents:** Amphetamine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 7 days;
**ALZET Comments:** Controls received mp w/ vehicle; animal info (maternally separated, Long Evans); behavioral testing (maternal behavior)

**Agents:** Amphetamine sulfate; Dopamine **Vehicle:** Propylene Glycol; **Route:** SC; CSF/CNS (nucleus accumbens); **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;
**ALZET Comments:** comparison of injections and sylistatic pellet vs mp; pulsed delivery; PE tubing contained drug and a dye in short sections interspersed with a substance immiscible with drug, to allow 12 hour infusions of drug and l2-hour infusions of the inert substance (perfluorodecalin) throughout a 14 day infusion period.; pumps primed in a physiological saline solution at 37°C for 4 hours.

**Agents:** Methamphetamine; amphetamine **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat (pregnant); **Pump:** 2ML2; **Duration:** 2 weeks;
**ALZET Comments:** Controls received mp w/ saline; animal info (female, Sprague-Dawley, 180-270 g); dose-response (fig 1); no stress (see pg.) There were no observable adverse health changes" pg 30; stress/adverse reaction (see pg. 30) "Two rats (in the 10- and 13.2-mg/kg/day groups) developed an abscess at the pump site, which appeared to be confined to the sc minipump implantation site." pg 30; "one animal chewed her skin at the pump site, exposing the osmotic pump" pg 30. "ClS corrected for the bioavailability or fraction of the drug absorbed (CIS/F) was calculated using the equation, CIS/F = infusion rate/CSS, where CSS is the steady-state drug concentration" pg 29

**Agents:** Desipramine; mirtazapine; chlorpheniramine; Paroxetine; scopolamine; amphetamine; escitalopram; chlordiazepoxide **Vehicle:** Not Stated; **Route:** SC; IP; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14, 21 days;
**ALZET Comments:** Controls received mp w/vehicle; dose-response (Fig 2-5); pumps replaced on day 14; good methods pg 629; animal info (male, Sprague Dawley, 5-7 mo old, 550-700g); "Importantly, use of minipumps also eliminates the need for repeated handling and injection of animals to administer the drug chronically." pg. 628; IP catheter used
Agents: Methamphetamine Vehicle: Saline, sterile; Route: SC; Species: Rat; Pump: 1003D; Duration: Not Stated;
ALZET Comments: Animal info (male, Sprague-Dawley, 250-280 g); 2-week ALZET pump used

Agents: Amphetamine, D- Vehicle: Saline, sterile; Route: SC; Species: Rat; Pump: 2001; Duration: 14 days;
ALZET Comments: Animal info (male, Sprague-Dawley, 350 g)

Agents: Amphetamine sulfate Vehicle: Saline, sterile; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; no stress (see pg. 535); post op. care (Bupivacaine, antibiotic ointment); ischemia (cerebral); animal info (male, Sprague Dawley, 285 g., CCI injury); behavioral testing (voluntary wheel exercise); "This drug administration method was chosen since our prior studies of RW exposure after TBI have left animals undistrubred for the 1 week exercise period." (p. 530)

Agents: Amphetamine sulfate, D- Vehicle: Saline, sterile; Route: SC; Species: Rat; Pump: 2001; Duration: 7,14 days;
ALZET Comments: Controls received mp w/ vehicle; pump replaced after 7 days; no stress (see pg. 470, 472); tolerance; animal info (male, Sprague Dawley, 350 g.) Behavioral testing (cocaine self-administration, food-reinforced responding); "the present dose delivered via mini-pump is not debilitating or overtly toxic." (p. 472)

Agents: Methamphetamine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2ML1; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by residual volume; dose-response (fig. 1, p. 104); stress/adverse reaction: (see pg. 101) “Animals that did show self-injuries were treated with an oral antibiotic (Sulfatrim) in their drinking water and, if this was ineffective they were humanely destroyed” p. 101; good methods p. 102; half-life (p. 101) “short”; post op. care (Apo-sulfatrim); animal info (male, Sprague-Dawley, 360-400g); "The pump was removed after 7 days... no animal had greater than 0.2 ml methamphetamine (ie 10% initial volume) remaining" (p. 102)

Agents: Amphetamine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle or saline; dose-response (fig. 4); comparison of escalating SC dose injections vs. mp; dependence; post op. care (PVP-iodeine); animal info (male, wistar, 300-350 g)

Agents: Methamphetamine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2ML1; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by residual volume; dose-response (fig. 1, p. 104); stress/adverse reaction: (see pg. 101) “Animals that did show self-injuries were treated with an oral antibiotic (Sulfatrim) in their drinking water and, if this was ineffective they were humanely destroyed” p. 101; good methods p. 102; half-life (p. 101) “short”; post op. care (Apo-sulfatrim); animal info (male, Sprague-Dawley, 360-400g); "The pump was removed after 7 days... no animal had greater than 0.2 ml methamphetamine (ie 10% initial volume) remaining" (p. 102)

Agents: Amphetamine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle or saline; dose-response (fig. 4); comparison of escalating SC dose injections vs. mp; dependence; post op. care (PVP-iodeine); animal info (male, wistar, 300-350 g)

Agents: Amphetamine; Fluvoxamine; Haloperidol Vehicle: Water; Ethanol; Route: SC; Species: Rat; Pump: 2ML4; Duration: 3 weeks;
ALZET Comments: Functionality of mp verified by residual volume; 50% ethanol used [not suggested by ALZET]

**Agents:** Amitriptyline HCl; Venlafaxine HCl; Clordiazepoxide HCl; Imipramine HCl; Phenelzine sulfate; Scopolamine HBr; Desipramine HCl; Bupropion HCl; Chlorpheniramine maleate; Fluoxetine HCl; Sertraline; Amphetamine sulfate, D-

**Vehicle:** Water, sterile distilled; PEG; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 6,14 days;

**ALZET Comments:** Controls received mp w/ vehicle; functionality of mp verified by agent blood levels; dose-response (fig. 5); animal info (male, female, susceptible, selectively bred); some animals had saline-filled catheter attached to mp to delay drug infusion by 5 days; "The most notable advantage of minipump delivery is that it eliminates stress resulting from daily injection of drug....minipumps also provide constant infusion of drug" (pg. 22)

P7173: C. Davidson, et al. Acute and chronic continuous methamphetamine have different long-term behavioral and neurochemical consequences. Neurochemistry International 2005;46(3):189-203

**Agents:** Methamphetamine

**Vehicle:** Saline, sterile; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 7 days;

**ALZET Comments:** Controls received mp w/ vehicle; functionality of mp verified by residual volume; comparison of SC injections vs. mp; half-life (p. 189) 15-70 minutes in rodents; dependence; "MP treatment provides a better pharmacodynamic model for the human methamphetamine binger and may also better approximate the neuropathological outcome known in humans." (p. 200)


**Agents:** Methamphetamine hcl; Methamphetamine hcl, 3,4-methylenedioxy-

**Vehicle:** Water, distilled; **Route:** SC; **Species:** Rat;

**Pump:** 2ML1; **Duration:** 5 days;

**ALZET Comments:** Controls received mp w/ vehicle; toxicology


**Agents:** Nicotine tartrate; amphetamine; clozapine **Vehicle:** HCL; saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 7,14 days;

**ALZET Comments:** Controls received mp w/ vehicle; pumps replaced every 7 days for the 14 day study infusing clozapine; dependence; "in this experiment involving three pump implantations each pump was placed in a different part of the rats' body (left or right side of the back of the animal or at the shoulder area)." p. 1252; behavioral study


**Agents:** Amphetamine **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 1 week;

**ALZET Comments:** Toxicology; ALZET pumps mentioned on pg. 181, ref. 36; “These pumps have a continuous uniform rate assuring a constant drug concentration.” (p. 181)


**Agents:** Amphetamine sulfate **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 6 days;

**ALZET Comments:** controls received mp w/ vehicle; dose-response (fig 1. p. 443); dependence; 2 administration periods, 1 6-day period, 12 days of withdrawal, then another 6-day period; “Even though the duration of amphetamine withdrawal was no longer, the magnitude of the effect was greater, and the use of mini-pumps eased drug administration considerably compared to repeated experimenter-administered injections”. p. 445;


**Agents:** Amphetamine sulfate, d-; Scopolamine hydrobromide **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 7 days;

**ALZET Comments:** controls received mp w/ saline; functionality of mp verified by residual volume; tolerance

**Agents:** Amphetamine sulfate  
**Vehicle:** Saline  
**Route:** SC  
**Species:** Rat  
**Pump:** 2ML1  
**Duration:** 7 days

**ALZET Comments:** dependence


**Agents:** Amphetamine; Amphetamine, 4-methoxy-; Amphetamine, 4-ethoxy-  
**Vehicle:** Propylene glycol  
**Route:** SC  
**Species:** Rat  
**Pump:** 2ML2  
**Duration:** 14 days

**ALZET Comments:** controls received mp w/ Propylene glycol; dose-response (graph, p. 1830); toxicology


**Agents:** Amphetamine sulfate  
**Vehicle:** Saline  
**Route:** SC  
**Species:** Rat  
**Pump:** 2001  
**Duration:** 7 days

**ALZET Comments:** comparison of IP injections vs. mp; brain tissue distribution; tolerance; half-life (45-60 min, p.10)


**Agents:** Amphetamine, d-  
**Vehicle:** Water  
**Route:** SC  
**Species:** Rat  
**Pump:** 2001; 2ML1  
**Duration:** 7 days

**ALZET Comments:** Controls received plastic pellets; multiple pumps per animal (2) (2001); comparison of IP injections vs. mp infusion


**Agents:** Apomorphine; Haloperidol; Methamphetamine  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Rat  
**Pump:** Not Stated  
**Duration:** 2 weeks

**ALZET Comments:** japanese with english abstract


**Agents:** Amphetamine sulfate, d-; Cocaine HCl  
**Vehicle:** Saline  
**Route:** IV (jugular); SC  
**Species:** Rat  
**Pump:** 2002  
**Duration:** 3, 30 days

**ALZET Comments:** controls received silastic plug implant


**Agents:** Methamphetamine  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Rat  
**Pump:** 2002  
**Duration:** 21 days

**ALZET Comments:** controls received sham operation; rats received bilateral lesions in the suprachiasmatic nucleus (SCN); comparison of methamphetamine in drinking water vs. mp infusion; functionality of mp verified


**Agents:** Amphetamine  
**Vehicle:** Saline  
**Route:** SC  
**Species:** Rat  
**Pump:** 2ML2  
**Duration:** 9 days

**ALZET Comments:** controls received mp w/saline


**Agents:** Amphetamine, d-  
**Vehicle:** Propylene glycol  
**Route:** SC  
**Species:** Rat  
**Pump:** 2002  
**Duration:** 16 days

**ALZET Comments:** controls received mp w/ vehicle; rats were hemidecorticated
**Agents:** Methamphetamine  **Vehicle:** Saline;  **Route:** SC;  **Species:** Rat;  **Pump:** 2002;  **Duration:** 14 days;
**ALZET Comments:** controls received mp w/ saline; some animals given ascorbic acid and/or MA in drinking water; comparison of MA in drinking water vs. mp infusion

**Agents:** Methamphetamine  **Vehicle:** Not Stated;  **Route:** SC;  **Species:** Rat;  **Pump:** 2ML2;  **Duration:** 14 days;
**ALZET Comments:** controls received cutaneous incision on the back-no mp or drugs; apomorphine challenge 7 days after mp removal; comparison of intermittent therapy vs. mp infusion

**Agents:** Amphetamine sulfate, d-  **Vehicle:** PEG;  **Route:** SC;  **Species:** Rat;  **Pump:** 2002;  **Duration:** 12 days;
**ALZET Comments:** controls received mps w/ polyethylene glycol

**Agents:** Amphetamine  **Vehicle:** Not Stated;  **Route:** Not Stated;  **Species:** Mice; Rat;  **Pump:** Not Stated;  **Duration:** Not Stated;
**ALZET Comments:** References the mp for continuous infusion of amphetamine in rats or mice

**Agents:** Flupenthixol, cis-; Flupenthixol, trans-; Amitriptyline; Amphetamine; Atropine; Chlorpromazine; Clozapine; Fluphenazine; Haloperidol; Morphine; Prazosin  **Vehicle:** Not Stated;  **Route:** SC;  **Species:** Rat;  **Pump:** Not Stated;  **Duration:** 2 weeks;
**ALZET Comments:** mp model not stated; comparison of sc injections vs. mp infusion; antihypertensive

**Agents:** Amphetamine sulfate, d-; Methamphetamine HCl, d-  **Vehicle:** Saline;  **Route:** SC;  **Species:** Rat;  **Pump:** 2001;  **Duration:** .5, 12 days;
**ALZET Comments:** Comparison of agents effects; control rats did not receive mp due to expense; peptides

**Agents:** Amphetamine sulfate, d-  **Vehicle:** Water;  **Route:** SC;  **Species:** Mice;  **Pump:** 2001;  **Duration:** 1 week;
**ALZET Comments:** Intermittent sc injec twice daily vs. mp infusion; measured amount of residual amp. in pumps at end of exp

**Agents:** Amphetamine sulfate, d-  **Vehicle:** Water;  **Route:** SC;  **Species:** Rat;  **Pump:** 2ML1;  **Duration:** .5-24 hours;
**ALZET Comments:** Pump primed overnight in saline at 37C; each pump used to treat several rats; control rats were implanted w/ used pump

**Agents:** Amphetamine sulfate, d-  **Vehicle:** Not Stated;  **Route:** SC;  **Species:** Rat;  **Pump:** 2001;  **Duration:** 1, 2 weeks;
**ALZET Comments:** Comparison of routes of admin; 2 pumps (2001 or 2002)/animal

**Agents:** Amphetamine, d-  **Vehicle:** PEG 300;  **Route:** SC;  **Species:** Rat;  **Pump:** 2001;  **Duration:** 5, 9, 14 days;
**ALZET Comments:** Pumps replaced after 1 week; up to multiple pumps per animal (3)
Agents: Amphetamine, d- Vehicle: Saline; Route: SC; Species: Rat; Pump: Not Stated; Duration: Not Stated;
ALZET Comments: 2 pumps/animal

P0407: M. S. Eison, et al. Two routes of continuous amphetamine administration induce different behavioral and neurochemical effects in the rat. Neuroscience Letters 1983;39(313-319
Agents: Amphetamine, d- Vehicle: PEG; Route: SC; Species: Rat; Pump: 2001; Duration: 2, 5 days;
ALZET Comments: Comparison of sc silicone tube implant vs. mp infusion; comparison of behavioral & neurochem. changes caused by Amph. in different deliv. sys. w/ different release characteristics

Agents: Amphetamine Vehicle: Saline; Route: SC; Species: Mice; Pump: Not Stated; Duration: 2, 7 days;
ALZET Comments: no comment posted

Agents: Amphetamine sulfate, d- Vehicle: Saline; Route: SC; Species: Mice; Pump: Not Stated; Duration: 7 days;
ALZET Comments: no comment posted

Agents: Amphetamine Vehicle: PEG 300; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: no comment posted

Agents: Trifluoperazine; Amphetamine sulfate, d- Vehicle: Saline; Route: CSF/CNS (corpus striatum); Species: Rat; Pump: Not Stated; Duration: 7 days;
ALZET Comments: caudate putamen

Agents: Amphetamine; Chloroamphetamine, p- Vehicle: Water; Route: SC; Species: Mice; Pump: Not Stated; Duration: 3, 6 days;
ALZET Comments: no comment posted

Agents: Chloroamphetamine, p- Vehicle: Saline; Route: SC; Species: Mice; Pump: 1701; Duration: 3 days;
ALZET Comments: Half-life (p. 2035)