References (2010-Present) on the Administration of Dexamethasone Using ALZET® Osmotic Pumps


**Agents:** Dexamethasone; Losartan  
**Vehicle:** Ethanol; DMSO; PEG  
**Route:** SC  
**Species:** Rat  
**Duration:** 3 weeks;  
**ALZET Comments:** Dose (12 ug/kg/day Dexamethasone; 30 mg/kg/day Losartan); 10% Ethanol, 15% DMSO, 75% PEG used; Controls received mp w/ vehicle; animal info (Male Sprague-Dawley rats, 6 weeks old, 200 g); Blood pressure measured via radiotelemetry transmitters; dependence;

Q10104: R. M. B. Bell, et al. Carbonyl reductase 1 amplifies glucocorticoid action in adipose tissue and impairs glucose tolerance in lean mice. Molecular Metabolism 2021;48(101225

**Agents:** Dexamethasone; Aldosterone; 20b-DHB  
**Vehicle:** DMSO; Propylene glycol;  
**Route:** SC  
**Species:** Mice  
**Duration:** 7 days;  
**ALZET Comments:** Dose: 20b-DHB(20 ug/day); animal info (C57BL/6J Male, Female  (8 weeks of age); Dihydrocorticosterone aka (20b-DHB) is a full agonist of the mineralocorticoid receptor.; Mifepristone is a GR antagonist RU486; Spironolactone is a MR antagonist; Carbonyl reductase 1 (Cbr1),is an enzyme inhibitor; diabetes; obesity


**Agents:** Dexamethasone  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML2;  
**Duration:** 14 days;  
**ALZET Comments:** Dose (0.5 mg/kg/day); Controls received mp w/ vehicle; animal info (Sprague Dawley, Male, 8 weeks old);

Q8565: N. Kawamura, et al. Reduced brain fractalkine-CX3CR1 signaling is involved in the impaired cognition of streptozotocin-treated mice. IBRO Reports 2020;9(233-240

**Agents:** Dexamethasone  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1007D;  
**Duration:** 7 days;  
**ALZET Comments:** Dose (10, 30, and 100 ug/day); Controls received mp w/ vehicle; animal info (Male C57BL/6 J mice, 10-12 weeks old); behavioral testing (Y-maze test); Dexamethasone aka DEX; dependence;


**Agents:** Dexamethasone  
**Vehicle:** PBS;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1004;  
**Duration:** 28 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (4-6 weeks old, female, Balb/C); dependence;


**Agents:** Angiotensin II; Aldosterone; Dexamethasone  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 2002;  
**Duration:** 7 days;  
**ALZET Comments:** Dose ((AngII 400 μg/kg/day), (aldosterone 0.1μg/day), (dexamethasone 12 μg/kg/day)); Controls received mp w/ vehicle; animal info (Male C57BL/6 J mice, 10-12 weeks old); replacement therapy (aldosterone, dexamethasone; adrenalectomy); Vehicle used but identity not stated. All minipumps contained dexamethasone for glucocorticoid replacement;


**Agents:** Dexamethasone  
**Vehicle:** Ethanol;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML1;  
**Duration:** 7 days;  
**ALZET Comments:** Dose (200 ug/kg/day); 10% ethanol used; Controls received mp w/ vehicle; animal info (Sprague Dawley, 8-10 weeks old); gene therapy;

Q9467: Methods for Assessing Serpins as Neuroprotective Therapeutics. Methods in Molecular Biology 2018;

**Agents:** Dexamethasone  
**Vehicle:** Saline;  
**Route:** CSF/CNS (Intrathecal);  
**Species:** Rat;  
**Pump:** 2ML4, 2ML2, 2ML1;  
**Duration:** 2 weeks;  
**ALZET Comments:** Dose (2.5-10 mL/h); animal info (Long Evans, Male, 16 week old rat, 370-420 g); spinal cord injury;
Agents: Dexamethasone 21-phosphate disodium salt Vehicle: Not Stated; Route: IV (lateral saphenous vein); Species: Sheep (pregnant); Pump: 2ML1; Duration: 48 hours;
ALZET Comments: Dose (0.48 mg/h);

Agents: Dexamethasone acetate Vehicle: Not Stated; Route: SC; Species: Rats (pregnant); Duration: 7 days;
ALZET Comments: Dose (200 μg/kg maternal body weight/day); Controls received mp w/ vehicle;

Q6754: S. Raitsin, et al. Subchronic glucocorticoids, glutathione depletion and a postpartum model elevate monoamine oxidase a activity in the prefrontal cortex of rats. Brain Research 2017;1666(1-10
Agents: Dexamethasone Vehicle: Saline; Route: SC; Species: Rat; Pump: 2ML4; Duration: 28 days;
ALZET Comments: Dose (0.0, 0.05,0.5, and 2.0 mg/kg/day ); Controls received mp w/ vehicle; animal info (Male Sprague Dawley rats (325–375 g));

Agents: Glucagon-like peptide-1, Dexamethasone Vehicle: Saline; Route: CSF/CNS; Species: Mice; Pump: 1002; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; Dose (GLP-1: 0.1 mg/24h; Dexa: 0.0219mg/ml); animal info (20 week-old male C57bl6j); post op. care (meloxicam for post-surgical pain (3 mg/kg); ALZET brain infusion kit 3 used; Brain coordinates (anteroposterior: 0.5 mm from bregma, lateral: -/+1,2 mm to bregma and dorsoventral: 2.1 mm below skull); Therapeutic indication (obesity);

Agents: Dexamethasone Vehicle: Saline; Species: Mice; Pump: Not Stated; Duration: 2 weeks;
ALZET Comments: Dose (23.0 mg per day); Controls received mp w/ vehicle; animal info (9-week-old male C57BL/6 mice); Industry authored (Regeneron Pharmaceuticals);

Agents: Dexamethasone Vehicle: Saline; DMSO; Route: SC; Species: Guinea pig; Pump: 2ML1; Duration: 3 days; 7 days;
ALZET Comments: Dose (2.59 mg/kg for 3-day, 2.32 mg/kg for 7-day); animal info (21 female Hartley guinea pigs aged; 8 weeks; 350–450 mg);

Q4838: H. JIA, et al. PREVENTION OF TRAUMA-INDUCED COCHLEAR FIBROSIS USING INTRACOCHLEAR APPLICATION OF ANTI-INFLAMMATORY AND ANTIPROLIFERATIVE DRUGS. neuroscience 2016;316(261-278
Agents: Dexamethasone; Ara-C Vehicle: Perilymph, artificial; Route: Ear (cochlea); Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Wistar, adult); animal info (Wistar, adult); stability verified by (incubation in 37C saline for 7 days see pg 268); one cochlea received vehicle only, while other received drug;

Agents: Bupivacaine; clonidine; dexamethasone Vehicle: Saline; Route: CSF/CNS (sciatic nerve); Species: Rat; Pump: 2ML1; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, albino, CD[SD]); no stress (see pg. 192); post op. care (IM butorphanol tartrate 0.05 mg/kg, ceftiofur sodium 5 mg/kg); stability verified by (pg. 195); used polyurethane catheter 0.5mm ID 0.9 mmOD; pumps removed after 1 week; dose (66.6 ug/mL)
Agents: Dexamethasone  Vehicle: Saline; Route: Ear (cochlea); Species: Guinea pig; Pump: 1007D; Duration: 7 days;
ALZET Comments: Dose (4 mg/ml); Controls received mp w/ vehicle; animal info (female Harley Albino guinea pigs, 255–455 g, 7–9 weeks old); dependence;

Agents: Dexamethasone  Vehicle: Saline; Route: SC; Species: Mice; Pump: Not Stated; Duration: 2 weeks;
ALZET Comments: Controls received mp w/ saline; animal info (male, C57BL6, 11 weeks old); Dose (23 ug/day); dose-response (pg. 9)

Agents: Dexamethasone  Vehicle: PBS; Route: CSF/CNS (intrathecal); Species: Rat; Pump: 2ML2; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Long Evans); spinal cord injury; post op. care (ketoprofen 0.3 ml of 10 mg/ml injection, saline administration 1-2 times daily); behavioral testing (Open field testing); “Subdural infusion of dexamethasone, a powerfully anti-inflammatory, stable, synthetic analogue of glucocorticoids, allowed for circumvention of the blood-brain barrier and apparently for achieving a sufficiently high concentration of this drug in the cerebrospinal fluid in proximity of the crush lesion to prevent severe, phagocyte-rich inflammation.” pg 48; used rat IT catheter; dose: 2 mg/ml

Agents: Dexamethasone sodium phosphate; corticosterone  Vehicle: Saline; Route: SC; Species: Mice (pregnant); Pump: 1003D; Duration: 60 hours;
ALZET Comments: Controls received mp w/ saline; animal info (female, E12.5, C57Bl6J, 8-10 weeks old); teratology; cardiovascular;

Q3668: K. Terada, et al. Fluvoxamine moderates reduced voluntary activity following chronic dexamethasone infusion in mice via recovery of BDNF signal cascades. NEUROCHEMISTRY INTERNATIONAL 2014;69(9-13
Agents: Dexamethasone  Vehicle: Saline; Route: SC; Species: Mice; Pump: Not Stated; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; behavioral testing (spontaneous locomotor activity; forced swim test); "our chronic infusion model captures aspects of chronic stress loads and reduces experimental error" pg 11; depression animal model; 0.5 mg/kg/day

Agents: Dexamethasone  Vehicle: Not Stated; Route: SC; Species: Rat (pregnant); Pump: Not Stated; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague Dawley OFA, gestational day 14); teratology; pumps used to induce intrauterine growth restriction; dose: 100 ug/kg/day

Agents: Dexamethasone  Vehicle: Cyclodextrin; PBS; Route: SC; Species: Mice; Pump: 1004; Duration: 3 weeks; 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, C57BL6J, 10-14 weeks); functionality of mp verified by serum plasma levels; post op. care (carprofen or buprenorphine given 12 hours after surgery); solutions were sterile-filtered using 0.22-um inline syringe filter; used Tissue Bond glue to close incision;
Agents: Dexamethasone Vehicle: Saline; Route: Ear (round window); Species: Rat; Pump: Not Stated; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Albino, 250-33g, adult); used ALZET IT catheter to cannulate round window; "Dexamethasone infusion given after implantation of the intracochlear model electrode was more effective for preventing hearing loss than the administration of just one dose of dexamethasone" pg 702;

Agents: Dexamethasone Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2002; Duration: 7 days;
ALZET Comments: Controls received mp w/ saline; animal info (Sprague Dawley Rats, 180-250g); replacement therapy (adrenalectomy);

Q3439: P. Chimin, et al. Chronic glucocorticoid treatment enhances lipogenic activity in visceral adipocytes of male Wistar rats. ACTA PHYSIOLOGICA 2014;211(409-420
Agents: Dexamethasone Vehicle: Saline; Route: SC; Species: Rat; Pump: 1004; Duration: 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Wistar, 10 weeks old); diabetes;

Agents: Glyburide; dexamethasone Vehicle: DMSO; saline; Route: SC; Species: Mice; Pump: 2002; Duration: Not Stated;
ALZET Comments: Control animals received mp w/ vehicle; animal info (rnu/rnu); cancer (brain tumor/metastases); Glyburide aka glibenclamide;

Q2758: V. Proserpio, et al. The methyltransferase SMYD3 mediates the recruitment of transcriptional cofactors at the myostatin and c-Met genes and regulates skeletal muscle atrophy. GENES & DEVELOPMENT 2013;27(11):1299-1312
Agents: Dexamethasone Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 2002; Duration: 14 days;
ALZET Comments: Control animals received mp w/ saline; animal info (C57BL/6, male, 8-10 wks old)

Agents: Dexamethasone Vehicle: Cyclodextrin; PBS; Route: SC; Species: Mice; Pump: 1004; Duration: 4 weeks;
ALZET Comments: Control animals received mp w/ vehicle; animal info (C57BL/6 D3R -/-, male, 8-12 wks old)

Agents: Dexamethasone Vehicle: Not Stated; Route: SC; Species: Mice (pregnant); Pump: 1003D; Duration: 60 hours;
ALZET Comments: Control animals received mp w/ saline; animal info (A. Cahirinus)

Q3587: B. A. O'Connell, et al. Treatment of pregnant spiny mice at mid gestation with a synthetic glucocorticoid has sex-dependent effects on placental glycogen stores. PLACENTA 2013;34(10):932-940
Agents: Dexamethasone Vehicle: Saline; Route: SC; Species: Mice (pregnant); Pump: 1003D; Duration: 72 hours;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, spiny mouse, day 20 gestation); teratology; pumps removed after 72 hours;

Agents: Dexamethasone Vehicle: DMSO, Saline; Route: SC; Species: Rat; Pump: 2ML4; Duration: 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Sprague-Dawley, 9 weeks old, 180-220g); antihypertensive; Adrenalectomy; Therapeutic indication (Kidney, Hypertension, Renal Sodium Transporters); Dose (1.2 ug x 100g/body weight x day);

Agents: Dexamethasone Vehicle: NaCl; Route: CSF/CNS; Species: Rat; Pump: 2001; 1003D; Duration: 2, 3 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 200-225 g, Wistar, male, 200-225 g); PE tubing used


Agents: Dexamethasone Vehicle: Not Stated; Route: Not Stated; Species: Rat; Pump: Not Stated; Duration: Not Stated;

ALZET Comments: Animal info (Sprague Dawley, OFA, male, female, 275-350 g);


Agents: Dexamethasone sodium phosphate Vehicle: Not Stated; Route: Not Stated; Species: Mice; Pump: Not Stated; Duration: 21 days;

ALZET Comments: Animal info (MNK1, MNK2, MNK1/2 KO)


Agents: Dexamethasone; imiquimod Vehicle: Not Stated; Route: IA (carotid); Species: Rabbit; Pump: 2ML1; Duration: 3, 7 days;

ALZET Comments: Animal info (male, New Zeland, white, 2.5-4.0 kg); one group contained mixture of dexamethasone and imiquimod

Q2413: D. I. Carrasco, et al. Motor terminal degeneration unaffected by activity changes in SOD1(G93A) mice; a possible role for glycolysis. NEUROBIOLOGY OF DISEASE 2012;48(1):132-140

Agents: Tetrodotoxin; dexamethasone Vehicle: Not Stated; Route: CSF/CNS (sciatic nerve); Species: Mice; Pump: 2002; Duration: Not Stated;

ALZET Comments: Animal info (SOD1 G93A); good methods, pg 133


Agents: Gentamicin; dexamethasone; melatonin Vehicle: Not Stated; Route: Ear (round window); Species: Rat; Pump: 2001; Duration: 7 days;

ALZET Comments: Controls received mp w/ saline; animal info (Wistar, male, 220-250 g); stability verified after 7 days (data not shown)


Agents: Dexamethasone; aldosterone; angiotensin II Vehicle: Not Stated; Route: Not Stated; Species: Rat; Pump: 2ML2; Duration: 8 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 15 wks old, 300 g); replacement therapy (adrenalectomy); blood pressure measured via tail-cuff (Kent Scientific)


Agents: Hydrocortisone; Dexamethasone Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2004; Duration: 8 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, Wistar-Kyoto, 160-183 g, uninephrectomy, bilateral adrenalectomy); long-term study; pumps replaced after 4 weeks; blood pressure (SBP) was measured by tail plethysmography (BP-98A; Softron Co., Tokyo, Japan)
**Agents:** Dexamethasone  **Vehicle:** Not Stated;  **Route:** SC;  **Species:** Mice (pregnant);  **Pump:** 1003D;  **Duration:** 3 days;
**ALZET Comments:** Controls received mp w/ saline; animal info (spiny, female)

**Agents:** Dexamethasone  **Vehicle:** DMSO; ethanol; water;  **Route:** SC;  **Species:** Rat;  **Pump:** 2ML1;  **Duration:** 7 days;
**ALZET Comments:** Controls received mp w/ vehicle; animal info (Wistar, female, adult, 250-350 g); 50% DMSO used; 15% ethanol used; post op. care (buprenorphine)

**Agents:** Dexamethasone  **Vehicle:** Not Stated;  **Route:** Not Stated;  **Species:** Mice (pregnant);  **Pump:** 1003D;  **Duration:** Not Stated;
**ALZET Comments:** Controls received mp w/ saline; animal info (E12.5, C57BL/6)

**Agents:** Dexamethasone; apolipoprotein E (130-149), mimetic  **Vehicle:** Not Stated;  **Route:** Not Stated;  **Species:** Mice;  **Pump:** 2004;  **Duration:** 3 weeks;
**ALZET Comments:** Controls received mp w/ apolipoprotein E scrambled, or saline); animal info (female A/J, C57BL/6, apo E-/-, LDLR-/-, 6-8 wk old); peptides;

Q9986: Y. Wu, et al. REDD1 Is a Major Target of Testosterone Action in Preventing Dexamethasone-Induced Muscle Loss. Endocrinology 2010;151(3):1050-1059
**Agents:** Dexamethasone; testosterone  **Vehicle:** Propylene glycol;  **Route:** Not Stated;  **Species:** Rat;  **Pump:** Not Stated;  **Duration:** 7 days;
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Wistar, 250 g.)

Q1603: N. A. Whitlock, et al. Increased Intraocular Pressure in Mice Treated with Dexamethasone. INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE 2010;51(12):6496-6503
**Agents:** Dexamethasone  **Vehicle:** PBS;  **Route:** SC;  **Species:** Mice;  **Pump:** 1004;  **Duration:** 10, 21 days;
**ALZET Comments:** Controls received mp w/ vehicle; animal info (B6.129, 10-13 wks old), post op. care (buprenorphine)

**Agents:** Dexamethasone  **Vehicle:** Cyclodextrin, 2-hydroxypropyl-b-;  **Route:** SC;  **Species:** Pig (mini);  **Pump:** 2004;  **Duration:** 28 days;
**ALZET Comments:** Controls received mp w/ normal saline; animal info (Yucatan, adult, 60-70 kg); functionality of mp verified by opening and inspecting the pump; dose-response; multiple pumps per animal (2); Fig 1, image of biosensor array with ALZET pump

**Agents:** Dexamethasone; ICG-001  **Vehicle:** Saline;  **Route:** SC;  **Species:** Mice (transgenic);  **Pump:** 2001;  **Duration:** 10, 21 days;
**ALZET Comments:** Controls received mp w/ vehicle; animal info (C57BL/6, BAT-gal transgenic)