References on the Administration of ACTH Using ALZET® Osmotic Pumps


**Agents:** Pirenzepine; Scopolamine hydrobromide; Metyrapone; luteinizing hormone; ACTH **Vehicle:** PBS; **Route:** CSF/CNS (Third ventricle); **Species:** Mice (knockout); **Pump:** 1002; **Duration:** Not Stated;

**ALZET Comments:** Dose (0.6 mg/kg/day Pirenzepine; 1.0 mg/kg Scopolamine hydrobromide; 100mg/kg/day Metyrapone; 2.8 mg/kg/day ACTH; 16ug/day LH); Controls received mp w/ vehicle; animal info (wild-type and Chrm1−/−); luteinizing hormone aka LH and adrenocorticotropic hormone aka ACTH; peptides; Brain coordinates (A/P -1.6 mm posterior to bregma, D/V -4.7 mm);

**Q6358:** R. I. Menzies, *et al.* Transcription controls growth, cell kinetics and cholesterol supply to sustain ACTH responses. Endocrine Connections 2017;6(7):446-457

**Agents:** ACTH; Uridine, bromodeoxy- **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks;

**ALZET Comments:** Dose (ACTH: 3 μg/day; BrDU: 1mg/mL); 0.154 M NaCl used; animal info (25g male C57BL6 mice);

**Q6303:** S. H. Kang, *et al.* Forkhead box O3 plays a role in skeletal muscle atrophy through expression of E3 ubiquitin ligases MuRF-1 and atrogin-1 in Cushing’s syndrome. American Journal of Physiology Endocrinology and Metabolism 2017;312(6):E495-E507

**Agents:** Adrenocorticotropic hormone **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 4 weeks;

**ALZET Comments:** Dose (15, 50, or 150 mg/kg/d); Controls received mp w/ vehicle; animal info (Male Lewis rats);

**Q6026:** S. Delcourte, *et al.* Asenapine modulates mood-related behaviors and 5-HT1A/7 receptors-mediated neurotransmission. CNS Neuroscience & Therapeutics 2017;23(6):518-525

**Agents:** Adrenocorticotropic hormone **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2ML1, 2ML2, 2ML4; **Duration:** 3, 13, 21 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (Sprague-Dawley, 250-300g); behavioral testing (Forced swim test, REM sleep deprivation); Electrophysiology ; Therapeutic indication (Bipolar disorder); Dose (0.1 mg/kg/day);

**Q2364:** A. R. Pandiri, *et al.* Reversion to Subgroup J Avian Leukosis Virus Viremia in Seroconverted Adult Meat-Type Chickens Exposed to Chronic Stress by Adrenocorticotrophin Treatment. Basic & Clinical Pharmacology & Toxicology 2012;56(3):578-582

**Agents:** Adrenocorticotrophin, porcine **Vehicle:** Saline; **Route:** SC; **Species:** Chicken; **Pump:** 2ML2; **Duration:** 14 days;

**ALZET Comments:** Animal info (V-A+, V-A-, DOH, 32 wks old); wound clips used; post op. care (pine tar on surgical site to avoid cannibalism)


**Agents:** Adrenocorticotropic hormone **Vehicle:** NaCl, sterile; **Route:** IP; **Species:** Fish (salmon); **Pump:** 1003D; **Duration:** 10 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (juvenile, Chinook); functionality of mp verified by plasma drug levels or visual inspection

Agents: ACTH Vehicle: Not Stated; Route: SC; Species: Mice; Pump: Not Stated; Duration: 12 days;

ALZET Comments: Controls received mp w/ NaCl; animal info (C57/B16, female)


Agents: ACTH; MS05 Vehicle: Saline, sterile; Route: SC; Species: Rat; Pump: Not Stated; Duration: 4 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 125-165 g); peptides


Agents: ACTH Vehicle: NaCl; Route: SC; Species: Mice; Pump: 2002; Duration: 12 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (C57BL/6, 25 g, age-matched)


Agents: ACTH Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 2002; Duration: 2 weeks;

ALZET Comments: Controls received mp w/ vehicle; animal info (adult, male, C57BL/6J)


Agents: ACTH Vehicle: Not Stated; Route: SC; Species: Mice; Pump: Not Stated; Duration: 14 days;

ALZET Comments: Animal info (male, wt, heterozygous, Cyp11b1 null, 6 months old, C57BL6 12 months old)


Agents: ACTH (1-24) Vehicle: PBS, BSA; Route: SC; Species: Mice; Pump: 1007D; Duration: 7 days;

ALZET Comments: Controls received mp w/ vehicle; replacement therapy (corticosterone); animal info (POMC wt, hetero, mut, male, female)


Agents: ACTH Vehicle: Saline; Route: SC; Species: Bird (laying hens); Pump: 2001; Duration: 7 days;

ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by blood corticosterone levels; peptides; ACTH is adrenocorticotropin


Agents: Dexamethasone; ACTH (1-39), human Vehicle: Cyclodextrin; Route: SC; Species: Mice; Pump: 2002; Duration: 1-14 days;

ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by plasma ACTH and corticosterone levels; multiple pumps per animal (2)

P4990: J. D. Tankson, et al. Stress and nutritional quality of broilers. POULTRY SCIENCE 2001;80(1384-1389

Agents: ACTH Vehicle: Saline, avian; Route: SC; Species: Bird (chicken); Pump: 2001; Duration: 7 days;

ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by blood corticosterone levels; ACTH is adrenocorticotropin


Agents: ACTH Vehicle: Not Stated; Route: SC; Species: Bird (chicken); Pump: 2001; Duration: 7 days;

ALZET Comments: Peptides; chickens were 6 weeks old; ACTH is adrenocorticotropin

Agents: ACTH, porcine Vehicle: Not Stated; Route: SC; Species: bird (chicken); Pump: 1003D; Duration: 24,48 hours; ALZET Comments: peptides


Agents: ACTH Vehicle: Not Stated; Route: SC; Species: bird (chicken); Pump: 2002; Duration: no duration posted; ALZET Comments: controls received no treatment of mp w/ saline; peptides


Agents: ACTH Vehicle: Not Stated; Route: SC; Species: mice; Pump: 2001; Duration: 4 or 7 days; ALZET Comments: controls received mp w/ normal saline; agent also known as synacthen


Agents: ACTH Vehicle: Saline, sterile; Route: SC; Species: Rat; Pump: 1007D; Duration: 7 days; ALZET Comments: controls received mp w/saline; replacement therapy (hypophysectomy, adrenalectomy); peptides


Agents: ACTH Vehicle: Saline; Route: SC; Species: mice; Pump: 2001; Duration: 7 days; ALZET Comments: pellets used to deliver several steroids


Agents: Cortisol; ACTH Vehicle: Saline; Route: SC; Species: pig (fetus); Pump: 2001; Duration: 6 days; ALZET Comments: controls received mp with saline; peptides; no stress: mp was generally well tolerated; the cortisol used was hydrocortisone hemisuccinate


Agents: Cortisol; ACTH(1-24) Vehicle: Saline; Route: SC; Species: pig (fetus); Pump: 2001; Duration: 6 days; ALZET Comments: controls received mp with saline; peptides


Agents: Luteinizing hormone; ACTH, human; Thyroid-stimulating hormone, rat; Follicle stimulating hormone, rat; Growth hormone, rat; Prolactin, ovine Vehicle: Not Stated; Route: SC; Species: mice; Pump: 2001; Duration: 7 days; ALZET Comments: controls received mp w/ vehicles; replacement therapy (hypophysectomy); peptides

P2344: W. Kowalski, et al. Peripheral and not central suppression of ovarian function during osmotic pump infusion of adrenocorticotropin- (1-24) for one menstrual cycle in the cynomolgus monkey and its partial compensation by a transitory elevation of sex hormone-binding globulin. Endocrinology 1992;130(6):3582-3592

Agents: ACTH (1-24) Vehicle: Saline; Route: SC; Species: monkey; Pump: 2001; Duration: 81-120 days (see chart, pg. 3589); ALZET Comments: long-term study, pumps replaced after 7 days; stability verified when residual pump solution given i.v. to test bioactivity; peptides; animals received saline mps, ACTH(1-24), then saline mps for 3 menstrual cycles


Agents: ACTH Vehicle: Saline; Route: SC; Species: Rat; Pump: 2002; Duration: 14, 15 days; ALZET Comments: peptides
**Agents:** ACTH analog; ORG-2766; Melanocyte-stimulating hormone, a-
**Vehicle:** saline; **Route:** CSF/CNS (sciatic nerve); SC;
**Species:** Rat; **Pump:** 2002; **Duration:** 2 weeks;
**ALZET Comments:** Comparison of oral admin. and admin. by s.c. microspheres; comparison of s.c. injections vs. mp infusion; tissue perfusion (sciatic nerve)

**Agents:** ACTH; Angiotensin II; Captopril; Dexamethasone; Insulin
**Vehicle:** saline; **Route:** SC;
**Species:** Rat; **Pump:** 2002; **Duration:** 2 weeks;
**ALZET Comments:** dose-response (text); functionality of mp verified by plasma levels; replacement t; antihypertensive therapy (streptozotocin-induced diabetes); peptides; antihypertensive

P1381: F. E. Estivariz, et al. Further evidence that N-terminal pro-opiomelanocortin peptides are involved in adrenal mitogenesis. J. Endocrinol 1988;116(201-206
**Agents:** ACTH (1-24); Pro-opiomelanocortin(1-28), N-; Pro-opiomelanocortin(1-36), N-
**Vehicle:** Gelatin; Saline; **Route:** SC;
**Species:** Rat; **Pump:** 2001; **Duration:** 6 days;
**ALZET Comments:** replacement therapy (hypophysectomy); peptides

**Agents:** ACTH (1-24); Corticosterone
**Vehicle:** Propylene glycol; Saline; **Route:** SC;
**Species:** Rat; **Pump:** 2001; 2ML1; **Duration:** 72/96 hours;
**ALZET Comments:** controls received mp w/vehicle; peptides; replacement therapy (adrenalectomy)

**Agents:** ACTH (1-24); ACTH, porcine
**Vehicle:** saline; **Route:** SC;
**Species:** mice (pregnant); **Pump:** 2001; **Duration:** 7 days;
**ALZET Comments:** controls received mp w/vehicle; peptides; replacement therapy (adrenalectomy)

**Agents:** ACTH (1-24); Epinephrine bitartrate; Norepinephrine bitartrate
**Vehicle:** Acetic acid; Ascorbic acid; **Route:** SC;
**Species:** Rat; **Pump:** Not Stated; **Duration:** 12 days;
**ALZET Comments:** mp model not stated; comparison of ACTH sc inject vs. mp infusion; comparison of agents effects; mp functionality pp. 386, 388; acetic acid was vehicle w/ACTH, ascorbic acid was w/NE and EPI; peptides

**Agents:** ACTH (1-24); Dexamethasone disodium phosphate; Melanocyte-stimulating hormone, a-; Thyroxine, l-
**Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 6 days;
**ALZET Comments:** comparison of agents effects; replacement therapy (hypophysectomy); peptides

**Agents:** ACTH (1-24)
**Vehicle:** Saline; **Route:** CSF/CNS; SC;
**Species:** Rat; **Pump:** 2001; **Duration:** 6 days;
**ALZET Comments:** peptides

**Agents:** ACTH (1-24), a-
**Vehicle:** Not Stated; **Route:** IV (jugular); **Species:** dog; **Pump:** 2ML1; **Duration:** 2 weeks;
**ALZET Comments:** mp replaced on day 7; dose-response data; controls received empty mp; mp attached to silastic rubber catheter in jugular vein; peptides
**Agents:** ACTH (1-24)  **Vehicle:** Not Stated;  **Route:** SC;  **Species:** bird (chicken);  **Pump:** 2002;  **Duration:** 14 days;
**ALZET Comments:** comparison of implantable corticosterone pellets vs. mp infusion of ACTH; peptides

**Agents:** ACTH (1-24)  **Vehicle:** Saline;  **Route:** SC;  **Species:** Rat;  **Pump:** 2001;  **Duration:** 6 days;
**ALZET Comments:** estrogen antagonists nafoxidine & MER-25 also admin.; peptides

**Agents:** ACTH (1-24); Aldosterone; Dexamethasone  **Vehicle:** Propylene glycol; Saline;  **Route:** IP;  **Species:** Rat;  **Pump:** Not Stated;  **Duration:** 3 days;
**ALZET Comments:** comparison of im Dexam. injec vs. mp infusion; comparison of agents effects; replacement therapy (adrenalectomy & hypophysc.); stability of ACTH in mp verified; hormones given alone & in combination; states pumping rate was low; peptides

**Agents:** ACTH (1-24); Aldosterone; Dexamethasone  **Vehicle:** Propylene glycol; Saline;  **Route:** IP;  **Species:** hamster;  **Pump:** Not Stated;  **Duration:** 3 days;
**ALZET Comments:** comparison of daily im injec of Dex. vs mp infusion; comparison of agents effects; replacement therapy (adrenalectomy & hypophysc.); agents given alone in combination; stability of ACTH verified by assay; peptides

**Agents:** Antiserum, anti-ACTH (4-10); antiserum, anti-proopiocortin (1-76), N-; antiserum, anti-proopiocortin (51-74); serum, rabbit; antiserum, anti-proopiocortin (1-28), N-  **Vehicle:** Not Stated;  **Route:** SC;  **Species:** Rat;  **Pump:** Not Stated;  **Duration:** 72 hours;
**ALZET Comments:** Controls received mp w/ normal rabbit serum; animal info (female, Wistar, 5 weeks old)

**Agents:** ACTH (1-24)  **Vehicle:** Saline;  **Route:** CSF/CNS;  **Species:** Rat;  **Pump:** 2001;  **Duration:** 1 week;
**ALZET Comments:** comparison of agents; peptides

**Agents:** ACTH (1-24)  **Vehicle:** Saline;  **Route:** SC;  **Species:** Rat;  **Pump:** Not Stated;  **Duration:** 3 and 7 days;
**ALZET Comments:** peptides

**Agents:** ACTH (1-24), a-  **Vehicle:** HCl; Protein standard; Saline;  **Route:** SC;  **Species:** Rat;  **Pump:** 2001;  **Duration:** 60 hours;
**ALZET Comments:** pumps primed at room temp. before implant; pumps retrieved from 1st group and reimplanted in 2nd group of rats; peptides

**Agents:** ACTH (1-24); ACTH (4-10); ACTH, porcine  **Vehicle:** Saline;  **Route:** SC;  **Species:** Rat;  **Pump:** 2001;  **Duration:** 6 days;
**ALZET Comments:** comparison of sc injection vs. infusion; peptides
Agents: ACTH (1-24); pro-opiocortin (1-28), N--;pro-opiocortin (1-76), N-; Vehicle: Acetic acid; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; peptides; animal info (female, Sprague-Dawley, 10 weeks old); human pituitary glycopeptide N-POC

Agents: ACTH (1-10)-amide, (D-Phe7)-; Morphine sulfate Vehicle: Not Stated; Route: SC; Species: mice; Pump: Not Stated; Duration: 7 days;
ALZET Comments: comparison of injections vs. infusion; separate and simultaneous infusion of agents; peptides

Agents: ACTH Vehicle: Saline; Route: SC; Species: Rat; Pump: 1701; Duration: 5-7 days;
ALZET Comments: peptides

Agents: ACTH Vehicle: Saline; Route: SC; Species: Rat; Pump: Not Stated; Duration: 5 days;
ALZET Comments: comparison of adrenal denervation vs. hypophysectomy; organ replacement therapy (hypophysectomy); peptides