



References on the Administration of ACTH  
Using ALZET® Osmotic Pumps

**Q6743:** H. Pierce, *et al.* Cholinergic Signals from the CNS Regulate G-CSF-Mediated HSC Mobilization from Bone Marrow via a Glucocorticoid Signaling Relay. *Cell Stem Cell* 2017;20(5):648-658 e4

**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*<sup>-/-</sup>); luteinizing hormone aka LH and adrenocorticotrophic 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:** Adrenocorticotrophic hormone **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 4 weeks;

**ALZET Comments:** Dose (40 ng/kg/day); Controls received mp w/ vehicle; animal info (10 week old male Sprague-Dawley rats);

**Q6377:** A. L. Feldhaus, *et al.* ALD1613, a Novel Long-Acting Monoclonal Antibody to Control ACTH-Driven Pharmacology. *Endocrinology* 2017;158(1):1-8

**Agents:** Adrenocorticotrophic hormone, rat **Vehicle:** PBS; **Route:** Not Stated; **Species:** Rat; **Pump:** 2ML1; **Duration:** Not Stated;

**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:** Adrenocorticotrophic 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)

**Q1524:** H. J. McQuillan, *et al.* Effects of chronic manipulation of adrenocorticotrophic hormone levels in Chinook salmon on expression of interrenal steroidogenic acute regulatory protein and steroidogenic enzymes. *General and Comparative Endocrinology* 2011;174(2):156-165

**Agents:** Adrenocorticotrophic 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



**Q1209:** W. B. Liedtke, *et al.* Relation of addiction genes to hypothalamic gene changes subserving genesis and gratification of a classic instinct, sodium appetite. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 2011;108(30):12509-12514

**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)

**Q1559:** A. Lindskog, *et al.* Melanocortin 1 Receptor Agonists Reduce Proteinuria. Journal of the American Society of Nephrology 2010;21(8):1290-1298

**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

**Q1044:** D. R. Dunbar, *et al.* Transcriptional and physiological responses to chronic ACTH treatment by the mouse kidney. PHYSIOLOGICAL GENOMICS 2010;40(3):158-166

**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)

**Q0452:** M. A. Bailey, *et al.* Mineralocorticoid and Glucocorticoid Receptors Stimulate Epithelial Sodium Channel Activity in a Mouse Model of Cushing Syndrome. Hypertension 2009;54(4):890-896

**Agents:** ACTH **Vehicle:** NaCl; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks;

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

**Q0365:** E. A. S. Al-Dujaili, *et al.* Physiological and pathophysiological applications of sensitive ELISA methods for urinary deoxycorticosterone and corticosterone in rodents. Steroids 2009;74(12):938-944

**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)

**P9033:** J. Karpac, *et al.* Failure of adrenal corticosterone production in POMC-deficient mice results from lack of integrated effects of POMC peptides on multiple factors. American Journal of Physiology Endocrinology and Metabolism 2008;295(2):E446-E455

**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)

**P7970:** J. O. Mumma, *et al.* Physiological stress in laying hens. POULTRY SCIENCE 2006;85(4):761-769

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

**ALZET Comments:** Controls received mp w/ vehicle; animal info (single comb, white leghorn, 36-65 weeks old)

**P6993:** M. Thomas, *et al.* Dual hormonal regulation of endocrine tissue mass and vasculature by adrenocorticotropin in the adrenal cortex. Endocrinology 2004;145(9):4320-4329

**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; peptides; ACTH is adrenocorticotropin

**P5768:** S. Puvadolpirod, *et al.* Model of physiological stress in chickens 3. Temporal patterns of response. Poult Sci 2000;79(3):377-382

**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



**P4149:** Y. T. King, *et al.* Chemical and physical characteristics of chicken livers following adrenocorticotrophic hormone-induced stress. *J. Food Sci* 1998;63(4):589-591

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

**P3608:** M. A. Latour, *et al.* Continuous infusion of adrenocorticotropin elevates circulating lipoprotein cholesterol and corticosterone concentrations in chickens. *Poult. Sci* 1996;75(1428-1432

**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

**P3702:** J. R. Blair-West, *et al.* The effect of adrenocorticotrophic hormone on water intake in mice. *Physiol. Behav* 1996;60(4):1053-1056

**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

**P3318:** P. E. Sawchenko, *et al.* Evidence for short-loop feedback effects of ACTH on CRF and vasopressin expression in parvocellular neurosecretory neurons. *J. Neuroendocrinology* 1995;7(721-731

**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

**P2642:** J. R. Blair-West, *et al.* Influence of adrenal steroid hormones on sodium appetite of balb/c mice. *Appetite* 1995;24(11-24

**Agents:** ACTH (1-24) **Vehicle:** Saline; **Route:** SC; **Species:** mice; **Pump:** 2001; **Duration:** 7 days;  
**ALZET Comments:** pellets used to deliver several steroids

**P2955:** P. T. Sangild, *et al.* Developmental regulation of the porcine exocrine pancreas by glucocorticoids. *J. Pediatr. Gastroenterology and Nutrition* 1994;19(204-212

**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

**P2956:** P. T. Sangild, *et al.* Adrenocortical stimulation of stomach development in the prenatal pig. *Biol. Neonate* 1994;65(378-389

**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

**P2359:** A. Meseguer, *et al.* Effects of pituitary hormones on the cell-specific expression of the KAP gene. *Mol. and Cellular Endocrin* 1992;89(153-162

**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

**P1614:** W. F. McDaniel, *et al.* ACTH 4-9 analog can retard spatial alternation learning in brain damaged and normal rats. *Behavioral and Neural Biology* 1989;52(271-278

**Agents:** ACTH **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 14, 15 days;  
**ALZET Comments:** peptides



**P1284:** C. E. E. M. Van der Zee, *et al.* Alpha-MSH and ORG-2766 in peripheral nerve regeneration: different routes of delivery. *Eur. J. Pharmacol* 1988;147(351-357)

**Agents:** ACTH analog; ORG-2766; Melanocyte-stimulating hormone,  $\alpha$ - **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)

**P1329:** P. Rebuffat, *et al.* Zona glomerulosa morphology and function in streptozotocin-induced diabetic rats. *Endocrinology* 1988;123(2):949-955

**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

**P1003:** D. R. Mann, *et al.* Mutually independent effects of adrenocorticotropin on luteinizing hormone and testosterone secretion. *Endocrinology* 1987;120(1542-1550)

**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)

**P1019:** D. de Catanzaro, *et al.* Repeated failure of prenatal ACTH administration to alter masculine behavior in mice. *Developmental Psychobiology* 1986;19(6):501-510

**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; comparison of sc injections vs. mp infusion

**P0624:** E. A. Stone, *et al.* Reduction of the cyclic adenosine 3',5'-monophosphate response to catecholamines in rat brain slices after repeated restraint stress. *J. Pharmacol. Exp. Ther* 1985;233(2):382-388

**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

**P0559:** Y. Shenker, *et al.*  $\alpha$ -Melanocyte-stimulating hormone stimulation of aldosterone secretion in hypophysectomized rats. *Endocrinology* 1985;116(1):138-141

**Agents:** ACTH (1-24); Dexamethasone disodium phosphate; Melanocyte-stimulating hormone,  $\alpha$ -; 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

**P0611:** D. R. Mann, *et al.* A detailed examination of the in vivo and in vitro effects of ACTH on gonadotropin secretion in the adult rat. *Neuroendocrinology* 1985;40(297-302)

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

**ALZET Comments:** peptides

**P0717:** R. J. Kempainen, *et al.* Effects of continuous  $\alpha$ (1-24)ACTH infusion in the dog. *Horm. Metab. Res* 1985;17(58-62)

**Agents:** ACTH (1-24),  $\alpha$ - **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



**P0737:** T. F. Davison, *et al.* Effects of continuous treatment with synthetic ACTH(1-24) or corticosterone on immature Gallus domesticus. Gen. Comp. Endocrinol 1985;59(4):16-423

**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

**P0452:** D. R. Mann, *et al.* Influence of anti-oestrogens on gonadotrophin secretion in control and ACTH-infused immature rats. European Journal of Endocrinology 1984;105(3):308-313

**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

**P0446:** W. E. Grizzle, *et al.* Aldosterone blocks adrenal compensatory hypertrophy in the rat. American Journal of Physiology Endocrinology and Metabolism 1984;246(E306-E310)

**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 & hypophysec.); stability of ACTH in mp verified; hormones given alone & in combination; states pumping rate was low; peptides

**P0449:** N. E. Dunlap, *et al.* Golden syrian hamsters: a new experimental model for adrenal compensatory hypertrophy. Endocrinology 1984;114(5):1490-1495

**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 & hypophysect.); agents given alone & in combination; stability of ACTH verified by assay; peptides

**P8156:** P. J. Lowry, *et al.* Pro-gamma-melanocyte-stimulating hormone cleavage in adrenal gland undergoing compensatory growth. Nature 1983;306(70-73)

**Agents:** Antiserum, anti-ACTH (4-10); antiserum, anti-proopiomelanocortin (1-76), N-; antiserum, anti-proopiomelanocortin (51-74); serum, rabbit; antiserum, anti-proopiomelanocortin (1-28), N- **Vehicle:** Not Stated; **Route:** SC, IP; **Species:** Rat; **Pump:** 2001; **Duration:** 72 hours;

**ALZET Comments:** Controls received mp w/ normal rabbit serum; animal info (female, Wistar, 5 weeks old)

**P0326:** D. E. Gmerek, *et al.* ACTH(1-24) and RX 336-M induce excessive grooming in rats through different mechanisms. European Journal of Pharmacology 1983;88(3):39-346

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

**P0387:** S. F. Akana, *et al.* Drug-induced adrenal hypertrophy provides evidence for reset in the adrenocortical system. Endocrinology 1983;113(6):2232-2237

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

**P0388:** S. F. Akana, *et al.* Relationships among adrenal weight, corticosterone, and stimulated adrenocorticotropin levels in rats. Endocrinology 1983;113(6):2226-2231

**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

**P0203:** D. R. Mann, *et al.* Influence of adrenocorticotropin and adrenalectomy on gonadotropin secretion in immature rats. Neuroendocrinology 1982;34(2):0-26

**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



**P8189:** F. E. Estivariz, *et al.* Stimulation of adrenal mitogenesis by N-terminal proopiomelanocortin peptides. *Nature* 1982;297(5865):419-422

**Agents:** ACTH (1-24); pro-opiomelanocortin (1-28), N-; pro-opiomelanocortin (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

**P0062:** J. M. Stewart, *et al.* Inhibition of development of tolerance to morphine by a peptide related to ACTH. In 'Neural Peptides and Neuronal Communication,' E. Costa and M. Trabucchi (eds. ), Raven Press, New York 1980;305-312

**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

**P0054:** R. H. Freeman, *et al.* Chronic ACTH administration and the development of hypertension in rats (40799). *Proc. Soc. Exp. Biol. Med* 1980;163(4):473-477

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

**ALZET Comments:** peptides

**P0037:** D. O. Cooper, *et al.* Differences between inbred rat strains in the alteration of adrenal catecholamine synthesizing enzyme activity after immobilization stress. *Neuroscience* 1979;4(1163-1172)

**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