



References on the Administration of Progesterone Using ALZET® Osmotic Pumps

Q11026: N. Wu, *et al.* Progesterone prevents HGSOc by promoting precancerous cell pyroptosis via inducing fibroblast paracrine. *iScience* 2023;26(4):106523

Agents: Progesterone **Vehicle:** Olive oil; **Route:** SC; **Species:** Mice; **Strain:** C57BL/6; BALB/c-nu; **Pump:** 1004; **Duration:** 28 days;

ALZET Comments: Dose (5 mg/kg); Controls received mp w/ vehicle; animal info: Female, six weeks old; comparison of different tumor models (IP, intrabursal, SC) vs mp; cancer (Ovarian);

Q10512: R. Das, *et al.* Medroxyprogesterone acetate positively modulates specific GABA(A)-receptor subtypes - affecting memory and cognition. *Psychoneuroendocrinology* 2022;141(105754)

Agents: Medroxyprogesterone acetate **Vehicle:** DMSO; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 66 days;

ALZET Comments: Dose (6.67 ± 1.08 ng/ml = 21 nM); 0.1%DMSO used; animal info (Male Sprague-Dawley rats (n = 19, weight < 130 g) Medroxyprogesterone acetate aka (MPA) replacement therapy (estradiol);

Q9813: M. A. Zimmerman, *et al.* Medroxyprogesterone opposes estradiol-induced renal damage in midlife ovariectomized Long Evans rats. *Menopause* 2020;27(12):1411-1419

Agents: Progesterone, medroxy- **Vehicle:** PEG; DMSO; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 40 days;

ALZET Comments: Dose (1 mg/kg/day); Controls received mp w/ vehicle; animal info (Female Long Evans rats, 11 months old); Blood pressure measured via tail cuff method; 144 mmHg - 147 mmHg; Medroxyprogesterone aka MPA; dependence;

Q8558: V. Joseph, *et al.* Progesterone decreases apnoea and reduces oxidative stress induced by chronic intermittent hypoxia in ovariectomized female rats. *Experimental Physiology* 2020;105(6):1025-1034

Agents: Progesterone **Vehicle:** 2-Hydroxypropyl- β -cyclodextrin; **Route:** SC; **Species:** Rat; **Pump:** 2ML4; **Duration:** 28 days;

ALZET Comments: Dose (4 mg/kg/day); Controls received mp w/ vehicle; animal info (Sprague-Dawley female rats (220-250g/57-70 days old)); post op. care (buprenorphine); Blood pressure measured via tail cuff method; 93.3 mmHg - 105.2 mmHg; Progesterone aka prog; dependence;

Q6232: S. F. Rosen, *et al.* T-Cell Mediation of Pregnancy Analgesia Affecting Chronic Pain in Mice. *J Neurosci* 2017;37(41):9819-9827

Agents: Estradiol, 17 β -; Progesterone sulfate **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose (17 β -estradiol : 0.1 mg/kg/d, progesterone sulfate: 0.25 mg/kg/d, 0.1 mg/kg/d estradiol + 0.25 mg/kg/d progesterone); Controls received mp w/ vehicle; animal info (7-12 week old female C57BL/6J mice); replacement therapy (estradiol, ovariectomy); Therapeutic indication

Q6066: D. J. Morris, *et al.* Glucocorticoids and gut bacteria: "The GALF Hypothesis" in the metagenomic era. *Steroids* 2017;125(1-13)

Agents: Chenodeoxycholic acid, progesterone, 11 β -hydroxy-, corticosterone, deoxy-, corticosterone, 3 α ,5 α -TH-, progesterone, 3 α ,5 α -TH-11 β -hydroxy- **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** Not Stated;

ALZET Comments: steroidal derivatives of corticosterone; Review presents the role of gut microbial metabolism of endogenous adrenocorticosteroids as a contributing factor in the etiology of essential hypertension.

Q6204: S. McIlvrde, *et al.* A progesterone-brown fat axis is involved in regulating fetal growth. *Sci Rep* 2017;7(1):10671

Agents: Progesterone; Prolactin **Vehicle:** Cyclodextrin, 2-hydroxypropyl- β ; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Dose (progesterone 250 μ g/day; prolactin 7 μ g/day); 20% (w/v) 2-hydroxypropyl- β -cyclodextrin used; Controls received mp w/ vehicle; animal info (7-8 week old female mice with bilateral oophorectomy); replacement therapy (oophorectomy);



R0351: D. J. Morris. Why do humans have two glucocorticoids: A question of intestinal fortitude. *Steroids* 2015;102(32-8)

Agents: Corticosterone; progesterone, hydroxy- **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat;

ALZET Comments: These infused steroids produce glucocorticoid induced mineral; corticoid receptor mediated Na⁺ retention

Q3762: F. Marcouiller, *et al.* The Nuclear Progesterone Receptor Reduces Post-Sigh Apneas during Sleep and Increases the Ventilatory Response to Hypercapnia in Adult Female Mice. *PLoS One* 2014;9(U765-U776)

Agents: Progesterone **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 1007D; **Duration:** 7 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (PRKO, wt, adult, female, 3-5 mo old)

Q4180: R. Wong, *et al.* Evaluating the translational potential of progesterone treatment following transient cerebral ischaemia in male mice. *BMC Neuroscience* 2014;15(U1-U10)

Agents: Progesterone **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** 1003D; **Duration:** 7 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (male, C57BL6 or BPH2/2, 15-25 weeks old, 25.9-41.2g); 100% DMSO used; ischemia (cerebral); behavioral testing (Foot fault test, t-maze test); "...mini-pump delivery could offer a more suitable dosing method with the advantages of reducing peaks and troughs in drug levels, the stress associated with repeated injections, and diminishing levels of release over time as seen with pellet implants. Infusion methods are commonly used clinically to maintain drug concentrations and osmotic mini-pump release of agents at a constant rate mimics this approach." pg 2; "Our previous pharmacokinetic study demonstrated that progesterone delivered via i.p. injection has a very short half-life in both plasma and brain but high progesterone concentrations in the brain can be achieved via mini pump infusion." pg 6; pumps primed overnight in 37C saline;

Q4468: D. J. Morris, *et al.* An alternative explanation of hypertension associated with 17alpha-hydroxylase deficiency syndrome. *Steroids* 2014;79(44-8)

Agents: corticosterone; progesterone, hydroxy- **Vehicle:** Propylene glycol; **Route:** sc; **Species:** Rat; **Duration:** 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info: adrenally intact rats; functionality of mp verified by measuring systolic blood pressure pg 46; replacement therapy (the agents infused); Dose: 5 ug/hr of both agents

Q5064: I. D. Kim, *et al.* Effect of ovariectomy, 17-beta estradiol, and progesterone on histology and estrogen receptors of bladder in female partial bladder outlet obstruction rat model. *J Obstet Gynaecol Res* 2013;39(7):1259-67

Agents: estrogen; progesterone; dehydroepiandrosterone **Vehicle:** DMSO; **Route:** SC; **Species:** Rat;

ALZET Comments: animal info: Sprague-Dawley, bladder outlet obstruction model, ovariectomized model; functionality of mp verified by plasma measurement ; mp used to infuse estrogen, progesterone, and DHEA to examine their effect on angiogenesis of the bladder detrusor; dose: E2 (0.1 mg/kg/day); P4 (1mg/kg/day); P4 and DHEA (300 ug/kg/day);

Q2386: R. Wong, *et al.* Progesterone pharmacokinetics in the mouse: implications for potential stroke therapy. *Journal of Pharmacy and Pharmacology* 2012;64(11):1614-1620

Agents: Progesterone **Vehicle:** DMSO; **Route:** SC; **Species:** Mice; **Pump:** 1003D; **Duration:** Not Stated;

ALZET Comments: animal info (C57BL/6, male, wks old); 100% DMSO used; "AUC shows that far higher progesterone concentrations were reached and maintained in both plasma and brain using osmotic minipump delivery with loading dose compared with a bolus dose alone." pg 1616; comparison of bolus dosing vs mp; "Osmotic minipumps were used as the method of infusion as they release progesterone at a constant rate, therefore avoiding diminishing release levels over time as is the case with pellet implants." pg 1617; pk study; comparison of mp vs pellet;

Q0641: P. S. Suresh, *et al.* The effect of progesterone replacement on gene expression in the corpus luteum during induced regression and late luteal phase in the bonnet monkey (*Macaca radiata*). *Reproductive Biology and Endocrinology* 2011;9(:):U1-U16

Agents: Progesterone **Vehicle:** Ethanol; Propylene glycol; **Species:** Monkey (*macaca radiata*); **Pump:** 2ML1; **Duration:** 24 hr

ALZET Comments: Animal info (adult, female, bonnet, *macaca radiata*, 3.3-5.1 kg); multiple pumps per animal (3); replacement therapy (corpus leuteum); endocrinology



Q1290: T. Quintela, *et al.* Progesterone Enhances Transthyretin Expression in the Rat Choroid Plexus In Vitro and In Vivo via Progesterone Receptor. *Journal of Molecular Neuroscience* 2011;44(3):152-158

Agents: Progesterone **Vehicle:** Polypropylene glycol; ethanol; DMSO; **Route:** SC; **Species:** Rat; **Pump:** 1007D; **Duration:** 2 wks
ALZET Comments: Controls received mp w/ vehicle; animal info (Wistar); 1% ethanol used; 1% DMSO used; replacement therapy (ovariectomy)

Q0987: B. B. Braden, *et al.* Medroxyprogesterone acetate impairs memory and alters the GABAergic system in aged surgically menopausal rats. *Neurobiology of Learning and Memory* 2010;93(3):444-453

Agents: Progesterone; Medroxyprogesterone acetate **Vehicle:** Propylene glycol; **Route:** SC; **Species:** Rat; **Pump:** 2ML4;
ALZET Comments: Controls received mp w/ vehicle; animal info (18 mo old, female, Fischer 344); functionality of mp verified by blood serum levels of MPA; pumps replaced every 31-32 days; behavioral testing (Morris maze test); replacement therapy (ovariectomy)

Q0372: P. Pallares, *et al.* A new method for induction and synchronization of oestrus and fertile ovulations in mice by using exogenous hormones. *Laboratory Animals* 2009;43(3):295-299

Agents: Progesterone **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 6 days;
ALZET Comments: Animal info (adult, 6-8 wks old, BALB/cAnNCrI, C57BL/6, CD1(ICR)); pumps replaced after 3 days

P9502: G. N. Armaiz-Pena, *et al.* Estrous Cycle Modulates Ovarian Carcinoma Growth. *Clinical Cancer Research* 2009;15(9):2971-2978

Agents: Estradiol, 17b-; progesterone; megestrol acetate **Vehicle:** Cyclodextrin, b-; water; **Route:** SC; **Species:** Mice (nude);
ALZET Comments: Replacement therapy (ovariectomy); animal info (female, athymic); cancer (ovarian)

P9849: R. Lefter, *et al.* Contrasting effects of estradiol and progesterone on respiratory pattern and hypoxic ventilatory response in newborn male rats. *RESPIRATORY PHYSIOLOGY & NEUROBIOLOGY* 2008;164(3):312-318

Agents: Estradiol; progesterone **Vehicle:** Propylene glycol; **Route:** SC; **Species:** Rat; **Pump:** 2ML2; **Duration:** 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (adult, female, male, multiparous, Sprague Dawley); estradiol and progesterone in same pump; replacement therapy (ovariectomy)

P8245: R. Lefter, *et al.* Progesterone increases hypoxic ventilatory response and reduces apneas in newborn rats. *RESPIRATORY PHYSIOLOGY & NEUROBIOLOGY* 2007;156(1):9-16

Agents: Progesterone **Vehicle:** Propylene glycol; **Route:** SC; **Species:** Rat (lactating); **Pump:** 2ML2; **Duration:** 9 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, postnatal day 1, lactating); "This approach ensures adequate hormonal exposure in pups since steroids are excreted through the milk, and prevents the potential confounding influences of pup's manipulation on respiratory or metabolic variables." (p. 14)

P7200: M. Robichaud, *et al.* Oestrogen and testosterone modulate the firing activity of dorsal raphe nucleus serotonergic neurones in both male and female rats. *Journal of Neuroendocrinology* 2005;17(3):179-185

Agents: Estradiol, 17B-; testosterone; progesterone; pregnane-3, 20 dione, 5B-; pregnane-3a-ol, 20-one, 5a-; dehydroepiandrosterone; testosterone, 5a-dihydroxy **Vehicle:** Ethanol; water, distilled; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2ML1; **Duration:** 3, 7 days;
ALZET Comments: Controls received mp w/ vehicle; ALZET brain infusion kit used; 3% ethanol; animal info (SD, 250-325 g)

P7097: M. Robichaud, *et al.* Modulation of the firing activity of female dorsal raphe nucleus serotonergic neurons by neuroactive steroids. *Journal of Endocrinology* 2004;182(1):11-21

Agents: NE-100; progesterone; pregnenolone; dehydroepiandrosterone; pregnane -3,20-dione, 5B; pregnane -3-ol,20-one, 5a; pregnane -3,20-dione, 5a; pregnane -5B-ol,20-one, 3a; pregnane -3B-ol,20-one, 5B; pregnane -3B-ol,20-one, 5a **Vehicle:** Water, distilled; ethanol; **Route:** SC; CSF/CNS; **Species:** Rat; **Pump:** Not Stated; **Duration:** 7,14,21 days;
ALZET Comments: Controls received mp w/ vehicle, or saline; replacement therapy (ovariectomy); NE-100 is N,N-dipropyl-(4-methoxy-3-(2-phenylethoxy) phenyl)-ethylamine; allopregnanolone; DHP and THP metabolite stereoisomers



P6581: K. Pazol, *et al.* Medroxyprogesterone acetate antagonizes the effects of estrogen treatment on social and sexual behavior in female macaques. *Journal of Clinical Endocrinology and Metabolism* 2004;89(6):2998-3006

Agents: Progesterone acetate, medroxy-; progesterone **Vehicle:** DMSO; **Route:** SC; **Species:** Monkey; **Pump:** 2ML1; **Duration:** 1 week;

ALZET Comments: Controls received placebo; functionality of mp verified by serum hormone levels; replacement therapy (ovariectomy); pumps replaced animals received mp w/ agent 1 for 1 week, mp removed, 3 week washout period and then new mp w/ agent 2 for 1 week; peptides

P6480: A. M. Traish, *et al.* Sex steroid hormones differentially regulate nitric oxide synthase and arginase activities in the proximal and distal rabbit vagina. *International Journal of Impotence Research* 2003;15(6):397-404

Agents: Testosterone; dehydroepiandrosterone; dihydrotestosterone, 5-alpha-; androstenediol, delta 5-3B, 17B; estradiol; progesterone **Vehicle:** PEG; **Route:** SC; **Species:** Rabbit; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Controls received mp w/ vehicle; replacement therapy (ovariectomy); multiple pumps per animal (2)

P5927: T. C. Shao, *et al.* In vivo preservation of steroid specificity in CWR22 xenografts having a mutated androgen receptor. *PROSTATE* 2003;57(1):1-7

Agents: Testosterone; estradiol; progesterone; flutamide **Vehicle:** Cyclodextrin, 2-beta-hydroxypropyl; **Route:** SC; **Species:** Mice (nude); **Pump:** 2004; **Duration:** 4 weeks;

ALZET Comments: Replacement therapy (castration); cancer (prostate); CWR22 xenograft used; flutamide is an anti-androgen; animal info (5-6 week old, nude ,ORX)

P4635: L. Zhang, *et al.* Estrogen mediates the protective effects of pregnancy and chorionic gonadotropin in a mouse model of vascular injury. *Arteriosclerosis, Thrombosis, and Vascular Biology* 1999;19(2059-2065)

Agents: Estradiol, 17B-; Progesterone; Gonadotrophin, human chorionic **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: Controls received sham operation; functionality of mp verified by serum levels; replacement therapy (ovariectomy); vascular cuff injury; B human chorionic gonadotrophin used;

P5305: E. P. Gomez-Sanchez, *et al.* Maternal hypertension and progeny blood pressure: role of aldosterone and 11beta-HSD. *Hypertension* 1999;33(6):1369-1373

Agents: Aldosterone; Hydroxyprogesterone, 11a; Carbenolone **Route:** SC; CSF/CNS; **Species:** Rat (pregnant); **Pump:** 2002; 2004; **Duration:** 14, 28 days;

ALZET Comments: Controls received mp w/ vehicle; stress/adverse reaction (p.1370); seroma around pump assembly in systemic carbenolone and hydroxyprogesterone high dose groups; some pumps became disconnected from cannula; glucocorticoids; comparison of sc vs. icv infusion

P4144: G. W. Souness, *et al.* 11a- and 11b- hydroxyprogesterone, potent inhibitors of 11b-hydroxysteroid dehydrogenase, possess hypertensinogenic activity in the rat. *Hypertension* 1996;27(pt 1):421-425

Agents: Progesterone, 11a; Hydroxyprogesterone, 11b; RU-28318; Corticosterone **Vehicle:** Propylene glycol; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 14 days;

ALZET Comments: controls received mp w/vehicle; functionality of mp verified by residual volume; replacement therapy (adrenalectomy); agents infused singly and concomitantly in same pump; cardiovascular

P3698: C. Nolan, *et al.* The effects of oophorectomy and female sex steroids on glucose kinetics in the rat. *Diabetes Research and Clinical Practice* 1995;30(181-188)

Agents: Estradiol, 17B-; Progesterone **Vehicle:** Propylene glycol; **Route:** SC; **Species:** Rat; **Pump:** 2ML1; **Duration:** 7 days;

ALZET Comments: controls received sham oophorectomy and/or mp w/ vehicle; replacement therapy (oophorectomy)



P3238: M. J. Lobo, *et al.* Effect of chronic intravenous injection of steroid hormones on body weight and composition of female rats. *Biochem. Molec. Biol. Intl* 1993;29(2):349-358

Agents: Progesterone; Cortisol; Cortisone; Corticosterone; Dehydroepiandrosterone; Androstenedione, 4-; Androstendiol, 5-; Testosterone; Nortestosterone, 19-; Estradiol, B-; Estrone; Estriol; Deoxycorticosterone **Vehicle:** PEG 400; **Route:** IV (lower cava);

Species: Rat; **Pump:** 2002; **Duration:** 15 days;

ALZET Comments: controls received mp with PEG; no stress (see pg. 351); pumps placed into peritoneal cavity and sutured to musculature; surgical wound sprinkled with sulphathiazol

P3233: M.-Y. Lee, *et al.* Induction of flavin-containing monooxygenase (FMO B) in rabbit lung and kidney by sex steroids and glucocorticoids. *Archives of Biochemistry and Biophysics* 1993;302(2):332-336

Agents: Estradiol, B-; Progesterone **Vehicle:** Propylene glycol; Ethanol; Ascorbic acid; **Route:** IP; **Species:** Rabbit; **Pump:** 2001; **Duration:** 4,5 days;

ALZET Comments: Controls received mp w/pg; functionality of mp verified by plasma levels; comparison of injections vs. mp

P1852: S. Dauvois, *et al.* Additive inhibitory effects of an androgen and the antiestrogen EM-170 on estradiol-stimulated growth of human ZR-75-1 breast tumors in athymic mice. *Cancer Research* 1991;51(3131-3135)

Agents: EM-170; Progesterone acetate, medroxy- **Vehicle:** DMSO; **Species:** Mice; **Duration:** 40 days;

ALZET Comments: Replacement therapy (ovariectomy); long-term study, pumps replaced every 20 days; cancer; antiestrogen

P1697: S. Mukai, *et al.* Changes in plasma gonadotropins, ovarian steroids and inhibin concentrations in gilts following progesterone treatment with implantable osmotic pumps. *Animal Reproduction Science* 1989;20(287-297)

Agents: Progesterone **Vehicle:** Ethanol; propylene glycol; **Route:** SC; **Species:** Pig; **Pump:** 2ML1; **Duration:** 7 days;

ALZET Comments: Multiple pumps per animal (12); "implanted pumps effectively suppressed follicular growth" (p. 296)

P1271: C. G. Hatjis, *et al.* Up-regulation of guinea pig myometrial b-adrenoreceptors by systemic estradiol and progesterone. *Endocrinology* 1988;122(4):1455-1459

Agents: Estradiol, 17B-; Progesterone **Vehicle:** Propylene glycol; **Species:** Guinea pig; **Duration:** 7 days;

ALZET Comments: controls received mp w/vehicle; separate and simultaneous infusion of agents; replacement therapy (oophorectomy)

P0566: P. C. Will, *et al.* Regulation of amiloride-sensitive electrogenic sodium transport in the rat colon by steroid hormones. *American Journal of Physiology Gastrointestinal and Liver Physiology* 1985;248(1):G124-G132

Agents: Aldosterone; Corticosterone; Dexamethasone phosphate; Estradiol, 17B-; Progesterone; Testosterone **Vehicle:** PEG 400; PEG 600; **Route:** IP; **Species:** Rat; **Pump:** 1701; 2001; **Duration:** 3, 8 days;

ALZET Comments: Comparison of agents effects; replacement therapy (adrenalectomy & ovariectomy); controls received mp with solvent or glass rods of mp size; no stress implied G125, weight regained; functionality of mp verified

P1224: L. A. Lavia, *et al.* Uterine growth responses of the mature castrate rat to estradiol-17B. *Steroids* 1984;43(6):663-675

Agents: Estradiol, 17B-; Progesterone **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** 24 hours;

ALZET Comments: separate and simultaneous infusion of agents; 2 doses of E2 infused; functionality of mp verified by radioimmunoassay

P0498: R. Bochska, *et al.* Progesterone dependent uptake of uteroglobin by rabbit endometrium. *Histochemistry* 1984;80(581-589)

Agents: Progesterone **Vehicle:** Not Stated; **Route:** IP; **Species:** Rabbit; **Pump:** 2ML1; **Duration:** Not Stated;

ALZET Comments: Replacement therapy (ovariectomy)

P0238: P. H. Jellinck, *et al.* Differential effects of catechol estrogens, progestins and CI-628 administered by constant infusion on the central and peripheral action of estradiol. *Neuroendocrinology* 1982;35(73-78)

Agents: CI-628; Progestins; R-5020; Catecholestrogens; Estradiol, 17B-; Progesterone **Vehicle:** Ascorbic acid; PEG; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** 2, 3 days;

ALZET Comments: organ replacement therapy (ovariectomy); agents used alone and/or in combination;



P0161: P. Komanicky, *et al.* Experimental hypertension induced by 19-nor-progesterone treatment in the rat. *Endocrinology* 1981;109(4):1164-1167

Agents: Aldosterone acetate; Progesterone, 19-nor- **Vehicle:** EtOH; Propylene glycol; Water; **Route:** SC; **Species:** Rat;
ALZET Comments: Pumps replaced after 7 and 14 days

P0146: R. Bochskañl, *et al.* Uteroglobin and the accumulation of progesterone in the uterine lumen of the rabbit. *Wilhelm Roux's Archives* 1981;190(127-131

Agents: Progesterone **Vehicle:** Ethanol; Propylene glycol; **Route:** IP; **Species:** Rabbit; **Pump:** 2001; **Duration:** 4 days;
ALZET Comments: Organ replacement therapy (ovariectomy); 1-2 pumps/animal

P0061: P. C. Will, *et al.* Polyethylene glycols as solvents in implantable osmotic pumps. *J. Pharm. Sci* 1980;69(6):747-749

Agents: Aldosterone; Corticosterone; Deoxycorticosterone acetate; Dexamethasone acetate; Estradiol, 17B-; Hydrocortisone; Progesterone; Spironolactone; Testosterone **Vehicle:** PEG; PEG 400; PEG 600; **Route:** IP; **Species:** Rat; **Pump:** 1701;
ALZET Comments: 3-7 days aldosterone, 6 days PEG only; replacement therapy (adrenalectomy)

P0100: M. Cervantes, *et al.* Progesterone facilitation of EEG synchronization in response to milk drinking in female cats. *Psychoneuroendocrinology* 1979;4(3):245-251

Agents: Progesterone **Vehicle:** Ethanol; Propylene glycol; **Route:** SC; **Species:** Cat; **Pump:** 1701; **Duration:** 8 days;
ALZET Comments: Comparison of injections 2x/day vs. infusion; organ replacement therapy (ovariectomy)