References on the Administration of Cortisol Using ALZET® Osmotic Pumps


**Agents:** Cortisol; radio-isotopes **Vehicle:** DMSO; propylene glycol; 2H tracer; **Route:** SC; **Species:** Mice; **Pump:** 1003D;

**Duration:** 2 days;

**ALZET Comments:** Dose (1.75 mg/day); Controls received mp w/ vehicle; animal info (Male, C57Bl6, 12 weeks old); stable-isotope labelled [9,11,12-2H]4-cortisol; dependence;


**Agents:** Corticosterone; Cortisol **Vehicle:** DMSO; Propylene glycol; **Route:** SC; **Species:** Mice (knockout); **Pump:** 2001;

**Duration:** 7 days;

**ALZET Comments:** Dose (corticosterone (250 ug/day) and cortisol (250 ug/day); Controls received mp w/ vehicle; animal info (Male(ABcc1−/−) mice);


**Agents:** Cortisol; propranediol **Vehicle:** Hydrocortisone; **Route:** IP; **Species:** Fish; **Pump:** Not Stated;

**Duration:** 27.3 days;

**ALZET Comments:** Controls received mp w/ 80% 1.2-propanediol; animal info (cod, 1.8kg, female); 2ML pump used


**Agents:** Cortisol; potassium canrenoate; mifepristone **Vehicle:** Saline; **Route:** SC; **Species:** Sheep (ewe); **Pump:** 2ML2;

**Duration:** 10 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (female, singleton pregnancies); teratology; cardiovascular; impact of maternal stress during late gestation


**Agents:** Cortisol; PF915275; meloxicam; interferon, tau, recomb. ovine **Vehicle:** Ethanol; **Route:** Intrauterine (uterine horn);

**Species:** Sheep (ewe); **Pump:** 2ML1; **Duration:** Not Stated;

**ALZET Comments:** Control animals received mp w/ vehicle; functionality of mp verified by cortisol plasma levels; 30% cyclodextrin used; "Our previous studies found that infusion of that amount of IFNT in the uterine lumen each day mimics effects of the conceptus on endometrial expression of hormone receptors and IFNT-stimulated genes during early pregnancy in ewes" pg 932


**Agents:** Cortisol **Vehicle:** Cyclodextrin, 2-hydroxypropyl-b-; **Route:** Not Stated; **Species:** Fish (Eel); **Pump:** 1003D; **Duration:** 8 days;

**ALZET Comments:** Controls received mp w/ vehicle; functionality of mp verified by plasma levels; 30% 2-hydroxypropyl-b-cyclodextrin used; "The infusion of cortisol into FW eels using osmotic mini-pumps led to a 2.8-fold increase in the level of plasma cortisol as measured 8-days after the onset of the experiment (Fig. 1)” pg 311; Dose (15 ug/hr);


**Agents:** Cortisol **Vehicle:** Cyclodextrin, beta; **Route:** IP; **Species:** Fish (eel); **Pump:** 1003D; **Duration:** 8 days;

**ALZET Comments:** Controls received mp w/ vehicle; functionality of mp verified by cortisol plasma levels; pumps implanted IP per contact with author; 30% cyclodextrin used

Agents: Cortisol  Vehicle: Cyclodextrin, beta  Route: IP  Species: Fish (eel)  Pump: 1003D  Duration: 8 days

ALZET Comments: Controls received mp w/ vehicle; cortisol plasma levels; yellow/silver eels with an ambient temp. of 5-14 degrees celsius, 30 degrees celsius Cyclodextrin used; pumps implanted IP; per contact with author; 30% cyclodextrin used


Agents: Cortisol  Vehicle: Cyclodextrin, beta  Route: IP  Species: Fish (carp)  Pump: 1007D  Duration: Not Stated

ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by cortisol plasma levels taken; "this approach was used instead of cortisol injection, which evokes stress responses due to repetitive handling..." (p. 2275); 30% cyclodextrin used


Agents: Cortisol  Vehicle: Not Stated  Route: SC  Species: Rat  Pump: 2001  Duration: 7 days

ALZET Comments: Controls received mp w/ saline

R0368: B. A. Teicher. The Combination of Antiangiogenic Therapy with Cytotoxic Therapy. Tumor Angiogenesis and Microcirculation 2001;506-548

Agents: Tetrahydrocortisol; Cyclodextrin-beta tetradecasulfate  Vehicle: Not Stated  Route: SC  Species: Mice  Pump: Not Stated  Duration: 14 days

ALZET Comments: Dose: b-Cyclodextrin tetradecasulfate (1000 mg/kg) and tetrahydrocortisol (125 mg/kg); cancer (Lewis lung carcinoma);


Agents: Cortisol  Vehicle: Saline  Route: SC  Species: Rat  Pump: Not Stated  Duration: 1 week

ALZET Comments: controls received mp w/saline


ALZET Comments: controls received mp with saline; after surgery fetuses received 50 mg of ampicillin into the amniotic cavity; sows maintained on antibiotics 3-4 days after surgery


Agents: Epidermal growth factor; Cortisol; Toxin, cholera; Uridine, bromodeoxy-  Vehicle: Medium 199;  Route: SC; gel;
Species: Mice (nude);  Pump: 1003D;  Duration: 3 days;

ALZET Comments: peptides; "tissue perfusion" -- gel containing human mammary epithelial cells was infused; estradiol, progesterone, and cholesterol combinations administered via silastic capsules EGF cholera toxin and hydrocortisone stimulated DNA synthesis substantially with the greatest response seen in the gel proximal to the pump: local delivery appears to be superior to injection;


Agents: Cortisol  Vehicle: Not Stated  Route: SC  Species: Rat  Pump: 2001  Duration: 7 days

ALZET Comments: controls received mp w/saline
Agents: Cortisol, 21-hemisuccinate Vehicle: Saline; Cyclodextrin; Route: IP; Species: fish; Pump: Not Stated; Duration: 18 days;
ALZET Comments: controls received mp w/ vehicle or no surgery; functionality of mp verified by plasma levels; comparison of ip injections and daily handling vs. mp; no stress (see pg. R433); stability verified for 18 days at 7.5 degrees C; only chronic infusion resulted in reduction of corticosteroid receptor number and affinity; cyclodextrin was Molecusol HBP

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: Cortisol Vehicle: Not Stated; Route: SC; Species: pig (fetus); Pump: 2001; Duration: 6 days;
ALZET Comments: controls received mp with saline or no operation; mp implanted just behind ribs; ampicillin given via amniotic fluid

Agents: Cortisol Vehicle: Saline; Route: SC; Species: Rat; Pump: 2002; Duration: 14 days;
ALZET Comments: controls received mp with vehicle or sham operation; replacement therapy (adrenalectomy)

Agents: Progesterone; Cortisol; Cortison; Corticosterone; Dehydroepiandrosterone; Androstenedione, 4-; Androstendiol, 5-; Testosterone; Nortestosterone, 19-; Estradiol, B-; Estrone; Estril; 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

Agents: Cortisol Vehicle: Saline; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: no comment posted

Agents: Cyclodextrin-beta tetradecasulfate; Cortisol, tetrahydro- Vehicle: Not Stated; Route: SC; Species: mice; Pump: 2002; Duration: 14 days;
ALZET Comments: cancer

Agents: Cortisol Vehicle: Saline; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: controls received mp w/ vehicle; microdialysis
**Agents:** Cortisol 21-phosphate **Vehicle:** Saline; **Route:** SC; **Species:** monkey; **Pump:** 2001; 2ML2; **Duration:** 8 weeks;
**ALZET Comments:** controls received mp w/ saline; functionality of mp verified by plasma level assay; pumps replaced every 7 or 14 days; long-term study

P2594: D. E. Andersen, et al. Metabolic effects associated with chronically elevated cortisol in rainbow trout (Oncorhynchus mykiss). Canadian Journal of Fisheries and Aquatic Sciences 1991;48(9):1811-1817
**Agents:** Cortisol **Vehicle:** Cyclodextrin, B-; **Route:** IA (dorsal aorta); **Species:** fish (rainbow trout); **Pump:** 2001; **Duration:** 10-14 days;
**ALZET Comments:** controls received mp w/ vehicle or sham operation; functionality of mp verified by RIA of plasma levels; stress from surgery caused hyperglycemia (p.816) for 22 hours; "Mini-osmotic pumps. . .were an effective method for chronically elevating cortisol titers in trout."; Molecusol HBP is a beta-cyclodextrin

**Agents:** Cortisol **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** 7 days;
**ALZET Comments:** dose-response; functionality of mp verified by plasma levels

**Agents:** Cortisol **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** 7 days;
**ALZET Comments:** dose-response; functionality of mp verified by plasma levels

**Agents:** Cortisol; Growth hormone, human; Triiodothyronine **Vehicle:** Sodium hydroxide; Saline; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 7, 14 days;
**ALZET Comments:** pump model not stated; male rats infused for 7 days, females for 14; agents infused separately; replacement therapy (hypophysectomy); peptides

**Agents:** Aldosterone; Fluorocortisol acetate, 9a-; Corticosterone; Deoxycorticosterone; Dexamethasone **Vehicle:** Ethanol; Propylene glycol; Water; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** 3 days;
**ALZET Comments:** replacement therapy (unilateral adrenalectomy); each mp used twice, 3 days in one animal, then 3 days in another; cannot tell if stability/concentration of ald. determined by RIA before or after exp