References on the Administration of Triiodothyronine Using ALZET® Osmotic Pumps


Agents: Triiodothyronine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2002; Duration: Not Stated;
ALZET Comments: Dose (6 ug/kg/day); Controls received mp w/ vehicle; animal info (Male, Wistar, 12-15 weeks old, 353 g); Triiodothyronine aka T3; ischemia (Myocardial);


Agents: Triiodothyronine Vehicle: Saline; NaOH; Route: CNS/CSF (Arcuate Nucleus of Hypothalamus; Lateral Hypothalamic Area; Ventromedial Nucleus of the Hypothalamus ); Species: Rat; Pump: 2001; 1007D; 1004D; Duration: Not stated;
ALZET Comments: Dose (4ng/day T3); 1mM NaOH used; Controls received mp w/ vehicle; Triiodothyronine aka T3; Brain coordinates (VMH, 2.8 mm posterior to bregma, 0.6 mm lateral to midline, and 10.1 mm ventral; for ARC, 2.8 mm posterior to bregma, 0.3 mm lateral to midline, and 10.2 mm ventral; and for LHA, 2.9 mm posterior to bregma, 2 mm lateral to midline, and 8.1 mm ventral); cyanoacrylate adhesive;


Agents: Thyroxine, 3,5,3′-triiodothyronine Vehicle: NaOH, propylenglycol, PBS; Route: SC; Species: Rat (mole); Pump: 2006; Duration: 12 weeks;
ALZET Comments: Dose (90 ng/g of T4, 2 ng/g of T3); 15 mM NaOH, 50% propylenglycol and PBS containing 5% BSA used; Controls received mp w/ vehicle; animal info (Ansell’s mole rats, mean age 2.6 ± 0.92 years); post op. care (Carprofen, 5 mg/kg for at least 3 days; animals were isolated for 24–48 h for recovery then housed as family group); pumps replaced every 6 weeks; long-term study; “Osmotic pumps deliver the test agents with a constant flow rate, thus being well-suited for long-term hormone treatments” pg. 9 ;


Agents: Triiodothyronine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2002; Duration: 48 hours;
ALZET Comments: Dose (6 ug/kg/day); Controls received mp w/ vehicle; animal info (adult male Wistar rats 12–15 weeks old and weighing about 300 g); triiodothyronine aka T3; cardiovascular;


Agents: Triiodothyronine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2002; Duration: 48 hours;
ALZET Comments: Dose (6 mg/kg/day); Controls received mp w/ vehicle; animal info (adult male Wistar rats weighing 385 ± 9 g); Triiodothyronine aka T3; cardiovascular;


Agents: Triiodothyronine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2002; Duration: 3 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Wistar, adult, 385+/− 9 g); functionality of mp verified by serum levels; cardiovascular; pumps removed after 3 days; Dose (6 ug/kg/day);

**Agents:** Triiodothyronine  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** 14 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Fischer 344 Brown Norway F1 hybrid, 7 and 27 months old); functionality of mp verified by blood levels; triiodothyronine aka T3;


**Agents:** Triiodothyronine  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2002;  
**Duration:** 3 days;

**ALZET Comments:** Controls received mp w/ saline; animal info (Wistar, 280-300g); functionality of mp verified by serum levels; cardiovascular;


**Agents:** Triiodothyronine  
**Vehicle:** NaOH; saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML4;  
**Duration:** 14 days;

**ALZET Comments:** Control animals received mp w/ vehicle; animal info (7 wks old, male, Sprague Dawley);


**Agents:** Triiodothyronine  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML4;  
**Duration:** 48 hours;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Wistar, 12-15 weeks old, 310g); ischemia (cardiac); cardiovascular;


**Agents:** Triiodothyronine; Thyroxine  
**Vehicle:** Propylene glycol;  
**Route:** CSF/CNS (hippocampus);  
**Species:** Rat (pregnant);  
**Pump:** Not Stated;  
**Duration:** Not Stated;

**ALZET Comments:** Controls received mp w/ vehicle and sham surgery; animal info (250-300 g, female, Wistar); “(T3, T4 doses) were not corrected for increasing weight” pg 1714; “Instead of administering the hormones directly to the hypothyroid fetuses, they were given via subcutaneous infusion to pregnant dams.” pg 1715

Q9016: L. Sui, et al. Administration of thyroid hormone increases reelin and brain-derived neurotrophic factor expression in rat hippocampus in vivo. Brain Research 2010;1313(9-24

**Agents:** Triiodothyronine; Thyroxine  
**Vehicle:** Ethanol; Saline;  
**Route:** CSF/CNS (hippocampus);  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** 24 hours;

**ALZET Comments:** Dose (50 pmol/ul); 0.9% NaCl and 0.05% Ethanol used; Controls received mp w/ vehicle; animal info (Young adult male Sprague–Dawley rats weighting 180–200 g); Triiodothyronine aka T3, Thyroxine aka T4; Brain coordinates (bregma – 3.5 mm, lateral ± 2 mm, and depth – 2.0 mm); replacement therapy (Thyroid Hormones);


**Agents:** Triiodothyronine  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2004;  
**Duration:** 9 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (adult, male, Sprague Dawley); pumps replaced at the 4th week; long-term study; myocardial infarction


**Agents:** Triiodothyronine, 3, 5, 3’-  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1002;  
**Duration:** 14 days;

**ALZET Comments:** Controls received mp w/ vehicle; no stress (see pg. 2958); animal info (10 wks old, wr, D1/D2KO); “none of the animals suffered any ill effects of the implants, either generally or in the area of the pumps.” (pg. 2958)

Agents: Triiodothyronine Vehicle: NaCl; Route: SC; Species: Mice; Pump: 2001; Duration: 3 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (WT, UCP3KO, 2 mo old, female); functionality of mp verified by "increase in T3 during the treatment"


Agents: MB07344; GC-1; triiodothyroacetic acid, 3,5,3'; triiodothyronine Vehicle: Saline; BSA; Route: SC; Species: Rat; Pump: 2ML1; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 300g, 10 wks old); MB07344, GC-1 are TR-beta-selective antagonists


Agents: Corticosterone; Triiodothyronine Vehicle: DMSO; Propylene glycol; Route: SC; Species: Bird (chicken); Pump: 2001; Duration: 72 hours;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, 29 days old); 50% DMSO used; 50% propylene glycol used


Agents: Triiodothyronine Vehicle: Saline; Na2CO3; NaOH; BSA; Route: SC; Species: Rat; Pump: Not Stated; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by serum T3 levels; animal info (male, Sprague-Dawley, 325-350g.); endocrinology


Agents: Triiodothyronine, 2,3',5 L- Vehicle: NaOH; BSA; Route: IP; Species: Rat; Pump: Not Stated; Duration: 1 week;
ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by serum T3 levels; animal info (male, Fisher 344, 150-175g, bile duct ligation)


Agents: Triiodothyronine; thyroxine, L- Vehicle: Saline; NaOH; Route: SC; Species: Rat; Pump: 2002; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by serum T3 levels; animal info (Sprague-Dawley, 5 wk old, male)


Agents: Triiodothyronine Vehicle: NaOH; Saline; Na2CO3; NaOH; BSA; Route: SC; Species: Rat; Pump: 1002; Duration: 3, 12 days;
ALZET Comments: Controls received mp w/ vehicle or euthyroid; functionality of mp verified by serum T3 levels; replacement therapy (thyroidectomy); animal info (Sprague-Dawley, 5 wk old, male)


Agents: Thyroxine; Leptin, human analog; Triiodothyronine, reverse Vehicle: Saline, isotonic; Route: SC; Species: Rat; Pump: 2001; Duration: 3, 6 days;
ALZET Comments: Controls received mp w/ vehicle, functionality of mp verified by plasma levels, replacement therapy (hypothyroidism), enzyme inhibitor (deiodinase), peptides, multiple pumps per animal (2), agents are also known as T3 and T4
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Bibliography

Agents: Thyroxine; Iopanoic Acid; Triiodothyronine Vehicle: NACL; NAOH (sodium hydroxide); HCL; Route: CSF/CNS; Species: Bird (quail); Pump: 2002; Duration: 2 weeks;
ALZET Comments: ALZET brain infusion kit used; placement & patency of canula verified by injecting evans blue dye

Agents: Isoproterenol; triiodothyronine; propranolol Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2ML2; Duration: 14 days;
ALZET Comments: Controls received mp w/ saline; cardiovascular

Agents: Triiodothyronine Vehicle: BSA; NaOH (sodium hydroxide); sodium bicarbonate; Route: SC; Species: Rat; Pump: Not Stated; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; pump model not stated

Agents: Triiodothyronine; iodide, potassium; methimazole; Estradiol, 17B-; testosterone; thiourea Vehicle: Saline; Route: IP; Species: Fish (cod); Pump: 2ML1; Duration: 17 days;
ALZET Comments: Controls received mp w/ vehicle; functionality of mp verified by residual volume; drug plasma levels taken; potassium iodide, methimazole and thiourea are thyroid inhibitors; sex hormones were in a separate study where the ALZET pump model was not listed; “this study demonstrates the value of osmotic pumps as effective delivery vehicles for drugs in wild demersal fish.” p. 1024

P5155: V. Haberkorn, et al. Vitamin A modulates the effects of thyroid hormone on UDP-glucuronosyl transferase expression and activity in rat liver. Molecular and Cellular Endocrinology 2002;190(167-175
Agents: Thyroxine; Triiodothyronine Vehicle: Saline; Sodium hydroxide; Route: SC; Species: Rat; Pump: 2002; Duration: 15 days;
ALZET Comments: controls received mp w/ vehicle; replacement therapy (thyroidectomy, p. 168); functionality of mp verified by thyroxine plasma levels

Agents: Growth hormone, recomb. human; thyroxine; triiodothyronine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: Not Stated; Duration: 2 weeks;
ALZET Comments: Controls received teflon rods; replacement therapy (hypophysectomy)

Agents: Leptin; thyroxine; triiodothyronine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2001; Duration: 6 days;
ALZET Comments: Controls received mp w/ vehicle; peptides

Agents: Triiodothyronine Vehicle: Saline; BSA; Sodium Hydroxide (NaOH); Sodium Carbonate; Route: SC; Species: Rat; Pump: Not Stated; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; 5% BSA used

**Agents:** Triiodothyronine  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** 24 hours;  
**ALZET Comments:** Controls received sham surgery; functionality of mp verified by T3 plasma levels by direct chemiluminescence assay; dose-response (graph p. 254); immunology


**Agents:** Triiodothyronine  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** 7 days;  
**ALZET Comments:** Functionality of mp verified by T3 plasma levels via chemiluminescent assay; cardiovascular


**Agents:** Hepatocyte growth factor; Triiodothyronine  
**Vehicle:** Saline; Heparin, sodium;  
**Route:** IV (portal vein);  
**Species:** Rat;  
**Pump:** 2ML2;  
**Duration:** 24 hours;  
**ALZET Comments:** Comparison of portal vein injections vs. mp; cancer; immunology; peptides; HGH used was recombinant human.


**Agents:** Triiodothyronine; Triiodothyroacetic acid  
**Vehicle:** NaOH; Saline; BSA;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2002;  
**Duration:** 12 days;  
**ALZET Comments:** controls received mp w/ placebo; animal info (female, Sprague Dawley)


**Agents:** Thyroxine; Triiodothyronine  
**Vehicle:** NaOH; Saline; BSA;  
**Route:** IP;  
**Species:** Rat;  
**Pump:** 2002;  
**Duration:** 10 days;  
**ALZET Comments:** Triiodothyronine (T3) & thyroxine (T4) were dissolved in 0.1M NaOH & 0.9% NaCl


**Agents:** Thyroxine; Triiodothyronine  
**Vehicle:** NaOH; saline;  
**Route:** IP;  
**Species:** Rat;  
**Pump:** 2002;  
**Duration:** 10 days;  
**ALZET Comments:** controls received mp w/vehicle or no surgery; replacement therapy (thyroidectomy); toxicology


**Agents:** Thyroxine sulfate; Triiodothyronine sulfate, 3,3',5'-; Triiodothyronine sulfate, reverse  
**Vehicle:** NaOH; PBS; Serum, rat;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML4;  
**Duration:** 48, 96 hours;  
**ALZET Comments:** Controls received mp with saline; functionality of mp verified by serum levels


**Agents:** Thyroxine; Triiodothyronine  
**Vehicle:** Saline; Serum, rat; NaOH;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML4;  
**Duration:** 28 days;  
**ALZET Comments:** controls received sham surgery; functionality of mp verified by serum hormone levels; replacement therapy (thyroidectomy); toxicology


**Agents:** Thyroxine; Triiodothyronine  
**Vehicle:** 125I tracer; Radio-isotopes; Albumin, bovine serum; NaOH; Sodium carbonate;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2001;  
**Duration:** 7 days;  
**ALZET Comments:** functionality of mp verified in pilot studies; topical and im antibiotics used
P3008: B. Freyschuss, et al. The hormonal regulation of the oestrogen receptor in rat liver: an interplay involving growth hormone, thyroid hormones and glucocorticoids. J. Endocrinol 1994;142(285-298
Agents: Growth hormone, human; Triiodothyronine, L-; Prolactin, ovine; Dexamethasone Vehicle: Not Stated; Route: SC; Species: Rat; Pump: Not Stated; Duration: 7 days;
ALZET Comments: controls received hypophysectomy only w/ no mp; functionality of mp verified by checking pumps after usage; replacement therapy (hypophysectomy); comparison of single sc injections of GH & T3 vs. mp; agents given alone or in combination; growth hormone via mp partly restores liver estrogen receptor concentration while same dose in 2 single injections daily has no effect

Agents: Triiodothyronine; Corticotropin Vehicle: NaOH; Route: IP; Species: Rat; Pump: 2002; Duration: 8,10 days;
ALZET Comments: Peptides

Agents: Triiodothyronine; Thyroxine Vehicle: 125I tracer; Radio-isotopes; Albumin, bovine serum; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: functionality of mp verified in pilot studies

Agents: Thyroxine; Triiodothyronine Vehicle: 125I tracer; 131I tracer; Radio-isotopes; Albumin, bovine serum; Saline; Sodium hydroxide; Route: IP; Species: Rat; Pump: 1003D; 2002; Duration: 1 week; 24 hours;
ALZET Comments: replacement therapy (MMI-perchlorate induced hypothyroidism)

Agents: Triiodothyronine Vehicle: 125I tracer; Sodium carbonate; Sodium hydroxide; Radio-isotopes; Serum, rat; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: replacement therapy (thyroidectomy)

Agents: Triiodothyronine Vehicle: Not Stated; Route: IP; Species: Not Stated; Pump: Not Stated; Duration: 7 days;
ALZET Comments: replacement therapy (hypothalamus); functionality of mp verified by measuring plasma levels of TSH

Agents: Triiodothyronine Vehicle: Sodium hydroxide; Saline; Serum, rat; Route: IP; Species: Rat; Pump: 2ML2; Duration: 7 days;
ALZET Comments: controls received mp w/ vehicle; functionality of mp verified by plasma levels; replacement therapy (methimazole-induced hypothyroidism)

Agents: Triiodothyronine, L- Vehicle: Sodium hydroxide; Serum, rat; Route: SC; Species: Rat; Pump: 2002; Duration: 14 days;
ALZET Comments: controls received thyroidectomy but no agent treatment; functionality of mp verified by in vitro testing; replacement therapy (thyroidectomy)

Agents: Hydrocortisone; Triiodothyronine; Growth hormone Vehicle: PEG; Sodium hydroxide; Saline; Route: SC; Species: Rat; Pump: Not Stated; Duration: Not Stated;

ALZET Comments: Peptides


Agents: Triiodothyronine Vehicle: Saline; Route: SC; Species: Rat; Pump: Not Stated; Duration: Not Stated;

ALZET Comments: Controls received mp w/saline; functionality of mp verified seven levels


Agents: Thyroxine; Triiodothyronine Vehicle: PBS; Serum, rat; Sodium hydroxide; Route: Not Stated; Species: Rat (pregnant); Pump: 2ML2; Duration: Not Stated;

ALZET Comments: controls received mp w/ saline; functionality of mp verified by plasma levels; dose-response


Agents: Thyroxine; Triiodothyronine Vehicle: Saline; Sodium hydroxide; Route: SC; Species: Rat; Pump: 2002; Duration: 10 days;

ALZET Comments: functionality of mp verified by serum levels (p. 38); replacement therapy (thyroidectomy); good methods


Agents: Triiodothyronine Vehicle: Not Stated, Route: IP; Species: Rat; Pump: Not Stated, Duration: 7, 28 days;

ALZET Comments: no comment posted


Agents: Triiodothyronine; Thyroxine, l- Vehicle: Butanol, n-; Propylene glycol; Route: IP; Species: Rat; Pump: Not Stated, Duration: 7, 14 days;

ALZET Comments: controls received no treatment or mp with vehicle; functionality of mp verified by plasma levels; replacement therapy (thyroparathyroidectomy); comparison of SC T3 injections vs. mp


Agents: Triiodothyronine; Thyroxine; Thyrotropin-rel. factor Vehicle: Saline; Sodium hydroxide; Serum, rat; Route: SC; Species: Rat; Pump: Not Stated, Duration: 6 days;

ALZET Comments: controls received saline via injections or did not have drug-induced hypothyroidism; replacement therapy (propylthiouracil and methimazole-induced hypothyroidism); comparison of ip, iv & sc injections vs. mp; multiple pumps per animal (2) were used concurrently


Agents: Triiodothyronine Vehicle: Not Stated; Route: Not Stated; Species: Sheep (fetus); Pump: Not Stated, Duration: 8 days;

ALZET Comments: Functionality of mp verified by serum levels; replacement therapy (thyroidectomy)


Agents: Thyroxine; Triiodothyronine Vehicle: Albumin, bovine serum; Radio-isotopes; Saline; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;

ALZET Comments: functionality of mp verified by serum hormone levels, measuring residual radioactivity
Agents: Radio-isotopes; Triiodothyronine Vehicle: 125I tracer; Sodium hydroxide; Serum, rat; Route: SC; Species: Rat; Pump: 2001; Duration: 3 days;
ALZET Comments: comparison of IP injections vs. mp infusion; cancer/immunology

Agents: Triiodothyronine Vehicle: Not Stated; Route: IP; Species: Rat; Pump: Not Stated; Duration: 7 days;
ALZET Comments: replacement therapy (thyroidectomy)

Agents: Triiodothyronine, L Vehicle: Not Stated; Route: SC; Species: Rabbit; Pump: Not Stated; Duration: 5 days;
ALZET Comments: Functionality of mp verified by daily blood LT3 levels using RIA; replacement therapy (propylthiouracil diet-induced hypothyroid); various LT3 doses infused

P1468: C. H. Emerson, et al. Serum thyrotropin concentrations are more highly correlated with serum triiodothyronine concentrations than with serum thyroxine concentrations in thyroid hormone-infused thyroidectomized rats. Endocrinology 1989;124:2415-2418
Agents: Thyroxine; Triiodothyronine Vehicle: Serum, rat; Sodium hydroxide; Water; Route: SC; Species: Rat; Pump: Not Stated; Duration: 14 days;
ALZET Comments: dose-response; functionality of mp verified by serum levels; replacement therapy (thyroidectomy)

Agents: Triiodothyronine Vehicle: Butanol, n-; PEG; Route: IP; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: no comment posted

Agents: Radio-isotopes; Triiodothyronine Vehicle: 125I tracer; Albumin, bovine serum; Saline; Route: SC; Species: Mice; Pump: 2001; Duration: 7 days;
ALZET Comments: Dose-response; functionality of mp verified by serum levels

Agents: Radio-isotopes; Thyroxine; Triiodothyronine Vehicle: 125I tracer; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: no comment posted

Agents: Radio-isotopes; Thyroxine; Triiodothyronine Vehicle: 125I tracer; Albumin, human serum; Sodium hydroxide; Water; Route: SC; Species: Rat; Pump: 2001; Duration: 14 days;
ALZET Comments: dose-response (table); half-life; second and third pumps implanted at 7 days; third pump contained labelled T-4 to measure the MCR; functionality of mp verified by serum levels; pump replaced weekly; replacement therapy (thyroidectomy); stability determin

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: Radio-isotopes; Thyroxine; Triiodothyronine Vehicle: 125I tracer; Bile; Glycerol; Propanol; Propylene glycol; Route: Intestine (duodenum); Species: Rat; Pump: 2001; Duration: 7 days;

ALZET Comments: Catheter to duodenum; dose-response (text); functionality of mp verified by plasma levels


Agents: Thyroid-stimulating hormone, bovine; Thyrotropin-rel. factor; Thyroxine; Triiodothyronine Vehicle: Sodium hydroxide; Saline; Route: IV (jugular); SC; Species: Rat; Pump: Not Stated; Duration: 2, 6 days;

ALZET Comments: pump model not stated; mp connected to catheter; dose-response; separate and simultaneous infusion of T3 and T4; NaOH is vehicle for TRH, T3, and T4; replacement therapy (hypophysectomy); peptides


Agents: Triiodothyronine Vehicle: Sodium hydroxide; Serum, rat; Water; Route: IP; Species: Rat; Pump: 2002; Duration: 14 days;

ALZET Comments: dose-response (table); comparison of sc injections vs. mp infusion; functionality of mp verified

P1049: B. Lacour, et al. Chronic triiodothyronine supplementation does not improve the lipoprotein disorders of mildly uremic rats. Nephron 1987;45(129-134

Agents: Triiodothyronine Vehicle: Not Stated; Route: IP; Species: Rat; Pump: 2002; Duration: 35 days;

ALZET Comments: pumps replaced twice; some animals received contralateral nephrectomy; long-term study

P1002: M. O. Goumaz, et al. Brain cortex reverse triiodothyronine (rT3) and triiodothyronine concentrations under steady state infusions of thyroxine and rT3. Endocrinology 1987;120(1590-1596

Agents: Thyroxine; Triiodothyronine, reverse Vehicle: 125I tracer; Sodium hydroxide; Saline; Serum, rat; Sodium carbonate; Route: IP; Species: Rat; Pump: 2001; Duration: 3, 7 days;

ALZET Comments: Pumps primed overnight in saline; T4 of low & high specific activity (SA) infused sep; T4 of low (SA) obtained by add. of unlabeled T4; replacement ther. (thyroidectomy)


Agents: Insulin; Triiodothyronine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2001; Duration: 4, 7 days;

ALZET Comments: dose-response; replacement therapy (streptozotocin induced diabetes, thyroidectomy); peptides


Agents: Thyroxine; Triiodothyronine Vehicle: Sodium hydroxide; Saline; Serum, rat; Route: SC; Species: Rat; Pump: 2002; Duration: 7, 14 days;

ALZET Comments: pumps replaced after 7 days; dose-response; intact euthyroid control rats were left untreated; replacement therapy (thyroparathyroidectomy)
Agents: Triiodothyronine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2002; Duration: Not Stated;
ALZET Comments: controls received sham operation w/placebo mp; replacement therapy (thyroidectomy) pumps replaced at day 14 and day 28; long-term study

Agents: Thyroxine; Triiodothyronine, reverse Vehicle: Sodium hydroxide; Saline; Serum, hypothyroid rat; Sodium carbonate;
Route: IP; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: controls received mp w/vehicle; dose response data; pumps primed overnight in buffer; various doses of agents infused; functionality of mp verified by labelling agent (extensive serum level data); replacement therapy (thyroidectomy)

Agents: Triiodothyronine Vehicle: Butanol, n-; Propylene glycol;
Route: IP; Species: Rat; Pump: Not Stated; Duration: 7 days;
ALZET Comments: control group received mp w/ vehicle; mp infusion of T3 to induce hyperthyroidism in rats

Agents: Insulin; Triiodothyronine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2001; Duration: 72 hours;
ALZET Comments: replacement therapy (thyroidectomy, streptozocin induced diabetes); peptides

Agents: Triiodothyronine Vehicle: Sodium hydroxide; Serum, rat;
Route: SC; Species: Rat; Pump: 2001; Duration: 3 days;
ALZET Comments: 1.2 and 4.5 ug T3/100g body weight/day; dose-response data; cancer

Agents: Triiodothyronine Vehicle: Not Stated; Route: SC; Species: Sheep (fetus); Pump: Not Stated; Duration: 8 days;
ALZET Comments: Replacement therapy (thyroidectomy); 25 ug/h and 50 ug/h infusions of T3

Agents: Thyroxine; Triiodothyronine Vehicle: Sodium hydroxide; Serum, rat; Route: SC; Species: Rat; Pump: 2002; Duration: 12 days;
ALZET Comments: Replacement therapy (thyroidectomy)

Agents: Dexamethasone; Radio-isotopes; Thyroxine, l-; Triiodothyronine Vehicle: 125I tracer; Albumin, human serum; Sodium hydroxide; Saline; Route: IP; SC; Species: Rat; Pump: 2001; 2002; Duration: 5, 6, 12 days;
ALZET Comments: Comparison of agents effects; replacement therapy (thyroidectomy); no stress - see p. 220; T3 and T4 used w/ and w/o 125I tracer; T4 used in 2002 pump sc, T3 in 2001 sc, Dex. in 2001 ip or sc; 3 pumps/animal

Agents: Triiodothyronine Vehicle: Not Stated; Route: SC; Species: Sheep (fetus); Sheep (lamb); Pump: Not Stated; Duration: 8 days;
ALZET Comments: Replacement therapy (thyroidectomy)
Agents: Triiodothyronine, 3,5,3' - Vehicle: PEG 300; Water; Route: IP; Species: Rat; Pump: 2001; Duration: 1 week;
ALZET Comments: Replacement therapy (thyroidectomy)

Agents: Triiodothyronine Vehicle: Not Stated; Route: Not Stated; Species: Sheep (fetus); Sheep (lamb); Pump: Not Stated; Duration: 8 days;
ALZET Comments: Replacement therapy (thyroidectomy); doses of T3 were 8 ug/h, 25 ug/h, 50 ug/h

Agents: Glucagon; Radio-isotopes; Thyroxine; Triiodothyronine Vehicle: 125I tracer; Sodium hydroxide; Saline; Route: IP; IV (jugular); Species: Rat; Pump: Not Stated; Duration: 7, 9 days;
ALZET Comments: Glucagon ip simultaneous infusion w/T3 & T4 in vehicles iv; 2 pumps/animal

Agents: Triiodothyronine analog (DIMIT); Thyroxine; Triiodothyronine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: Not Stated; Duration: 8 days;
ALZET Comments: comparison of daily sc injection vs. infusion; organ replacement therapy (thyroidectomy)

P0135: M. M. El-Zaheri, et al. Maternal thyroid function is the major determinant of amniotic fluid 3,3',5'-triiodothyronine in the rat. Journal of Clinical Investigation 1981;67(1126-1133
Agents: Triiodothyronine, 3,3',5'-; Thyroxine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: Not Stated; Duration: Not Stated;
ALZET Comments: 2 days T4, 5 days rT3; comparison of injections vs. infusion

Agents: Thyroxine; Triiodothyronine Vehicle: Sodium hydroxide; Propanediol, 1,2-; Serum, rat; Route: SC; Species: Rat; Pump: Not Stated; Duration: 4, 6 days;
ALZET Comments: Organ replacement therapy (thyroidectomy)

Agents: Triiodothyronine Vehicle: PEG; Route: SC; Species: Sheep (fetus); Pump: Not Stated; Duration: 5 days;
ALZET Comments: no comment posted

Agents: Triiodothyronine Vehicle: PEG; Route: SC; Species: Sheep (fetus); Pump: Not Stated; Duration: 4, 5 days;
ALZET Comments: Harvard pump used to infuse NE during control period of 30-60 mins.

Agents: Triiodothyronine Vehicle: Sodium hydroxide; Propanediol, 1,2-; Route: SC; Species: Rat; Pump: Not Stated; Duration: Not Stated;
ALZET Comments: Intermittent injections vs. infusion; organ replacement therapy (thyroidectomy)