References on the Administration of Testosterone Using ALZET® Osmotic Pumps

Agents: Testosterone Vehicle: Not Stated; Route: SC; Species: Mice; Pump: Not Stated; Duration: 4 weeks;
ALZET Comments: Dose (1.875 μg/h); animal info (male mice, 8-weeks-old); cancer (Prostate Cancer);

Q9508: B. Tuku, et al. Testosterone Protects Against Severe Influenza by Reducing the Pro-Inflammatory Cytokine Response in the Murine Lung. Frontiers in Immunology 2020;11(697
Agents: Testosterone Vehicle: “Cyclodextrin, 2-ß-Hydroxypropl-”; Route: SC; Species: Mice; Pump: 2004; Duration: 2 weeks;
ALZET Comments: Dose (5 mg/ml); 45% “Cyclodextrin, 2-ß-Hydroxypropl-” used; Controls received mp w/ vehicle; animal info (Six weeks old female mice); replacement therapy (testosterone);

Agents: Testosterone Vehicle: CSF, artificial; Route: CSF/CSN; Species: Rat; Pump: Not Stated; Duration: Not Stated;
ALZET Comments: Controls received mp w/ vehicle; animal info (Male, Wistar); Brain coordinates (AP = −3.0, L = ±3.8, v = −7.0); bilateral cannula used; dependence;

Agents: Testosterone Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 2004; Duration: Not Stated;
ALZET Comments: Dose (5 mg/ml); Controls received mp w/ vehicle; animal info (8 weeks old, Male, C57BL/6J); dependence;

Agents: Estradiol, 17B; Testosterone, 17a-methyl Vehicle: Ethanol; Saline; Route: IP; Species: Fish; Pump: 1007D; Duration: 21 days;
ALZET Comments: Dose (0.48 ug/day); Controls received mp w/ vehicle; animal info (male and female catfish); functionality of mp verified by residual volume; 17B-estradiol aka E2, 17a-methyltesosterone aka MT; replacement therapy (testosterone; estradiol);

Agents: Dihydrotestosterone Vehicle: Not stated; Route: SC; Species: Rat; Pump: Not stated; Duration: 90 days;
ALZET Comments: Dose (83 μg/day); Controls received mp w/ vehicle; animal info (female Wistar albino rats, 21 days old); long-term study; Dihydrotestosterone aka DHT; dependence;

Agents: 5α-dihydrotestosterone or 2-(a-Naphthoyl) ethyltrimethylammonium iodide Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 1004; Duration: 28 days;
ALZET Comments: Dose (83.3 ug/day-DHT, 1.7 ug/day- a-NETA); animal info (C57BL/6); 5α-dihydrotestosterone aka DHT, 2-(a-Naphthoyl) ethyltrimethylammonium iodide aka a-NETA ; cardiovascular;

Agents: Testosterone Vehicle: Not Stated; Route: SC; Species: Mice; Pump: Not Stated; Duration: 2 days;
ALZET Comments: Animal info (10-12 weeks old, Male); cancer (Prostate Cancer);
**Agents:** Testosterone enanthate; **Vehicle:** Propylene Glycol; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;
**ALZET Comments:** Dose (200 g/day); Controls received mp w/ vehicle; animal info (deer mice); post op. care (meloxicam 2mg/kg);

**Agents:** Testosterone; **Vehicle:** Not stated; **Route:** SC; **Species:** Mice; **Pump:** Not stated; **Duration:** 3-4 weeks;
**ALZET Comments:** Dose (1:875 g/hour); animal info (Male, C57BL6);

**Agents:** dihydrotestosterone, 5alpha-; ethyltrimethylammonium iodide, 2-(alpha-naphthoyl)-; **Vehicle:** Not stated; **Route:** SC; **Species:** Mice; **Pump:** 1004; **Duration:** 28 days;
**ALZET Comments:** Dose ((DHT 83.3 μg/day), (alpha-NET A 33 μg/day)); Controls received empty mp; animal info (8 or 10 weeks, male, C57BL/6 or CMKLR1−/−); DHT is a nonaromatizable androgen. Alpha-NETA is a small molecule reported to function as a CMKLR1 antagonist; replacement therapy (testosterone);

Q8144: G. Navarro, et al. Androgen excess in pancreatic beta cells and neurons predisposes female mice to type 2 diabetes. JCI Insight 2018;3(12):
**Agents:** Dihydrotestosterone; **Vehicle:** Not stated; **Route:** CSF/CNS (lateral ventricle); **Species:** Mice; **Duration:** 4 weeks;
**ALZET Comments:** Controls received mp w/ vehicle; animal info (8 weeks old, Female, C57BL/6J); Dihydrotestosterone aka DHT, nonaromatizable AR agonist; Brain coordinates (L +1 mm, AP –0.2 mm, DV –2 mm); bilateral cannula used; diabetes;

**Agents:** Testosterone; **Vehicle:** Not Stated; **Route:** SC; **Species:** Rat; **Pump:** Not Stated; **Duration:** 2 weeks;
**ALZET Comments:** Dose (1 mg/kg/day); animal info (Male, 10 week old, Sprague Dawley, 31-330 g); dependence;

**Agents:** Testosterone; **Vehicle:** Ethanol; **Route:** SC; **Species:** mice (transgenic); **Pump:** Not Stated; **Duration:** 4 weeks;
**ALZET Comments:** animal info (male, adult, castrated); Dose (1.875 ug/hr);

**Agents:** Testosterone; **Vehicle:** Ethanol, PEG-400; **Route:** SC; **Species:** mice (transgenic); **Pump:** Not Stated; **Duration:** 4 weeks;
**ALZET Comments:** animal info (CK18-CreERT2 transgenic, Nkx3.1, C57BL/6N); cancer (prostate); replacement therapy (testosterone infusion); Dose (1.875 ug/h);

**Agents:** Testosterone; **Vehicle:** Ethanol; PEG 400; **Route:** SC; **Species:** Mice; **Pump:** Not Stated; **Duration:** 4 weeks;
**ALZET Comments:** animal info (male, adult, castrated); Dose (1.875 ug/hr);

**Agents:** Testosterone; **Vehicle:** Propylene glycol; **Route:** SC; **Species:** Mice; **Pump:** 2004; **Duration:** 32 days;
**ALZET Comments:** Dose (1 mg/kg/day); Controls received mp w/ vehicle; animal info (15-16 week old Orchiectomy FVB/NJ mice); replacement therapy (orchiectomized);
Agents: Testosterone; trenbolone Vehicle: Cyclodextrin, 2-hydroxypropyl-b-; Route: SC; Species: Rat; Pump: 2004; Duration: 8 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Wistar, 12 weeks old, 300g); functionality of mp verified by plasma; pumps replaced every 4 weeks; 45% cyclodextrin used; ischemia (cardiac); post op. care (buprenorphine 10 ug/kg/day IM; enrofloxacin 5 mg/kg ip for 3 days); long-term study; Dose (2 mg/kg/day);

Q4252: R. E. Sorge, et al. Different immune cells mediate mechanical pain hypersensitivity in male and female mice. NATURE NEUROSCIENCE 2015;18(1081-+  
Agents: Testosterone Vehicle: Polyethylene glycol; Route: SC; Species: Mice (nude); Pump: 2002; Duration: 14 days;
ALZET Comments: animal info (naive, adult, young, 7-12 wks old, male, female, CD-1, nude CD-1)

Q4285: Y. Reizel, et al. Gender-specific postnatal demethylation and establishment of epigenetic memory. GENES & DEVELOPMENT 2015;29(923-933
Agents: Testosterone Vehicle: Not Stated; Route: SC; Species: Mice; Pump: Not Stated; Duration: 3 months;
ALZET Comments: Controls received mp w/ vehicle; animal info (C57BL6, 3 or 20 weeks old); pumps replaced every 28 days; replacement therapy (testosterone replacement); long-term study; pumps primed for 48 hours in 37C saline;

Agents: Testosterone propionate Vehicle: Cyclodextrin, sterile; Route: Not Stated; Species: Mice; Pump: Not Stated; Duration: 5 days;
ALZET Comments: Animal info (male, TRAMP +/- C57BL/6xFVB/N hybrid, 9 weeks old); cancer (prostate); replacement therapy (gonadectomy; testosterone replacement);

Agents: Nandrolone; testosterone Vehicle: Propylene glycol; Route: Not Stated; Species: Rat; Duration: 28 days;
ALZET Comments: Dose (0.75 mg/kg/week nandrolone; 2.8 mg/kg/week); Controls received mp w/ vehicle; animal info (Male Wistar rats aged 8 weeks); spinal cord injury;

Agents: Testosterone; flutamide; anastrozole Vehicle: DMSO;ethanol; Route: SC; Species: Rat; Pump: 2ML2; Duration: 4 weeks;
ALZET Comments: Control animals received mp w/ vehicle; animal info (Sprague Dawley, male, adult, 350-400 g); pumps replaced after 2 weeks; replacement therapy (castrated);

Agents: Dihydrotestosterone; methyltestosterone; NEP28 Vehicle: Not Stated; Route: SC; Species: Rat; Pump: Not Stated; Duration: 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 13 weeks old); dose-response (pg.110-112); neurodegenerative (Alzheimer’s disease); replacement therapy (orchidectomy; androgen therapy); dihydrotestosterone aka DHT; methyltestosterone aka MT; NEP28 is a selective androgen receptor modulator (SARM); notes the use of a 21 day pump;

Agents: Testosterone; nandrolone Vehicle: Propylene glycol; Route: SC; Species: Rat; Pump: 2004; Duration: 56 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (Wistar, male); post op. care (amoxicillin); pumps replaced after 28 days; long-term study
**Agents:** Methylprednisolone; testosterone  
**Vehicle:** Propylene glycol;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2001; 2002;  
**Duration:** 24 hours; 7 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (Wistar, male); multiple pumps used (2); spinal cord injury

**Agents:** Estradiol; testosterone  
**Vehicle:** Ethanol; propylene glycol; PBS;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1002; 1004;  
**Duration:** 2, 4 weeks;  
**ALZET Comments:** Control animals received mp w/ vehicle; animal info (LEPR-B Tyr985Leu, male, female, OVX, castrated); 10% ethanol used; replacement therapy (ovariectomy); post op. care (analgesic, carprofen)

**Agents:** Testosterone propionate  
**Vehicle:** Polyethylene glycol;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 2002;  
**Duration:** 14 days;  
**ALZET Comments:** animal info (naive, adult, 6-12 wks old, male, female, CD-1); wound clips used

**Agents:** Testosterone; nortestosterone, androgen 7 alpha methyl 19  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2004;  
**Duration:** 4 months;  
**ALZET Comments:** Controls received mp w/ vehicle; mixture of nandrolone and testosterone in same pump

**Agents:** Nandrolone; testosterone  
**Vehicle:** Propylene glycol;  
**Route:** SC;  
**Species:** Mice;  
**Duration:** 7, 28 days;  
**ALZET Comments:** Controls received mp w/ vehicle; mixture of nandrolone and testosterone in same pump

**Agents:** Testosterone propionate  
**Vehicle:** DMSO; ethanol;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** Not Stated;  
**Duration:** 5 days;  
**ALZET Comments:** Animal info (castrated, TAPT121); "4:1 mixture of DMSO and ethanol"; replacement therapy (orchidectomy)

**Agents:** Dexamethasone; testosterone  
**Vehicle:** Propylene glycol;  
**Route:** Not Stated;  
**Species:** Rat;  
**Duration:** 7 days;  
**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Wistar, 250 g.)

**Agents:** Testosterone  
**Vehicle:** Ethanol; PEG 400;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** Not Stated;  
**Duration:** 4 weeks;  
**ALZET Comments:** Animal info (adult, male, castrated, Nkx3-1CreERT2/+); replacement therapy (orchidectomy)

**Agents:** Testosterone propionate  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** 3 weeks;  
**ALZET Comments:** Animal info (male, Sprague-Dawley, 6 mo old); replacement therapy (orchidectomy)
Alzette Comments:


Agents: Dihydrotestosterone, 5α- Vehicle: Ethanol, polypropylene glycol; Route: SC; Species: Mice; Pump: 1007D; Duration: 1 week;

Alzette Comments: Controls received mp w/ vehicle; animal info (male, female, 5 mo old, O VX, ORDX, 129s1/sv);


Agents: Testosterone; Dexamethasone Vehicle: Propylene glycol; Species: Rat; Pump: Not Stated; Duration: 1, 7 days;

Alzette Comments: Controls received mp w/ vehicle; animal info (male, Wistar, 250 g.)

P8938: T. Quintela, et al. 5alpha-dihydrotestosterone up-regulates transthyretin levels in mice and rat choroid plexus via an androgen receptor independent pathway. Brain Research 2008;1239(18-26)

Agents: Dihydrotestosterone, 5 alpha- Vehicle: Ethanol; Propylene glycol; Route: SC; Species: Rat; Mice; Pump: 1007D; Duration: 1 week;

Alzette Comments: Controls received mp w/ vehicle; replacement therapy (orchidectomy); animal info (129s1/sv, HM male); 0.5% ethanol used


Agents: Dihydrotestosterone; Angiotensin II Vehicle: Saline; Route: SC; Species: Mice (knockout); Pump: 2004; Duration: 5 weeks, 28 days;

Alzette Comments: Controls received mp w/ vehicle; replacement therapy (ovariectomy, orchidectomy); animal info (male, female, 129s1/Sv, 5 months old); 0.5% EtOH


Agents: Estradiol, 17β; dihydrotestosterone, 5α- Vehicle: Polypropylene glycol; Ethanol; Route: SC; Species: Mice; Pump: 1007D; Duration: 1 week;

Alzette Comments: Controls received mp w/ vehicle or sham operation; replacement therapy (ovariectomy, orchidectomy); animal info (male, female, 129s1/Sv, 5 months old); 0.5% EtOH


Agents: Testosterone Vehicle: Not Stated; Route: SC; Species: Not Stated; Pump: Not Stated; Duration: Not Stated;

Alzette Comments: Replacement therapy (gonadectomy); comparison of silastic implants vs. time release pellets vs. mp; endocrinology; mp not used, just discussed as available option


Agents: Dihydrotestosterone; ICI-182,780; estradiol, 17β-; flutamide Vehicle: DMSO; PEG 300; propanediol, 1, 2-; Route: SC; CSF/CNS (HVC); CSF/CNS (robust nucleus arcopallium); Species: Bird (sparrow); Pump: 1007D; 1002; Duration: 14, 21 days;

Alzette Comments: Controls received mp w/ vehicle; pumps replaced after 14 days; cyanoacrylate adhesive; animal info (male, Gambel’s white crowned, adult); HVC is the proper name for the telencephalic song nucleus; mp placed in custom built backpack strapped to bird’s back/w/harness made from surgical dressing, and a microcentrifuge tube; “pilot experiments showed that this arrangement kept the pump at its proper operating temperature (37°C), and that the pump retained saline throughout the entire release period.” (p. 12047); ICI-182,780 is also known as faslodex


Agents: Testosterone propionate Vehicle: PEG 400; Route: SC; Species: Mice; Pump: 2004; Duration: 7 months;

Alzette Comments: Controls received mp w/ vehicle, or no treatment; replacement therapy (castration); dose-response (fig 1A); long-term study; pumps replaced every 28 days; cancer (prostate); animal info (male, Nkx3.1+/-, Pten+/-, Nkx3.1 +/+, Nkx3.1-/-, Pten+/-, 6 wks old)
Agents: Testosterone; nortestosterone, 7 alpha-methyl-19-; Vehicle: Cyclodextrin; Route: SC; Species: Mice (transgenic); Pump: 2004; Duration: 4 weeks;
ALZET Comments: Replacement therapy (orchidectomy); cancer (prostate); animal info (male, transgenic, 32 grams, ORX); MENT (7-alpha-methyl-19-nor-testosterone) and testosterone dissolved in 45% cyclodextrin

Agents: Testosterone, 17a-methyl-; Vehicle: Saline; Cyclodextrin, B-; Route: SC; Species: Mice; Pump: 2002; Duration: 17 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, C57BL/6, 90 days old); behavioral study; 30% cyclodextrin used

Agents: Nortestosterone, 7a-methyl-19-; Vehicle: Propandiol, 1, 2-; Route: SC; Species: Rat; Pump: 2004; Duration: 16 weeks;
ALZET Comments: Controls received mp w/ vehicle; replacement therapy (orchidectomy); dose-response (fig. 1); long-term study; pumps replaced every 4 weeks; animal info (male, 13 month old, Wistar, 600-650 g)

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 (Sprague-Dawley, 250-325 g)

Agents: Dihydrotestosterone, 5 alpha-; Estradiol, 17B-; Vehicle: Not Stated; Route: SC; Species: Dog; Pump: 2ML4; Duration: 28 days;
ALZET Comments: Animal info (Beagle, 3.5-7.2 yrs); testosterone induced BPH animal model

Agents: Estradiol; testosterone; Vehicle: PEG; Route: SC; Species: Rabbit; Pump: 2002; Duration: 2 weeks;
ALZET Comments: Replacement therapy (ovariectomy); animal info (female, New Zealand, white, 4.5-5.0 kg, OVX)

Agents: Testosterone; estradiol; dihydrotestosterone; dehydroepiandrosterone; Vehicle: PEG 300; Route: SC; Species: Rabbit; Pump: 2002; Duration: 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; replacement therapy (ovariectomy); animal info (female, New Zealand, white, 4.5-5.0 kg, OVX (for some))

Agents: SARM, s-1; SARM s-2; testosterone propionate; Vehicle: Ethanol; PEG 300; DMSO; Route: SC; Species: Rat; Pump: 2002; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; selective androgen receptor modulator (SARM) are flutamide and bicalutamide analogs; animal info (ORX, male, Sprague-Dawley, 187-214 g)
P6920: J. Aronson. The Nicolas Andry Award - Modulation of distraction osteogenesis in the aged rat by fibroblast growth factor. Clinical orthopaedics and related research 2004;425:264-283
Agents: Fibroblast growth factor, recom. human; dihydrotetosterone Vehicle: Sodium citrate; Route: SC; bone (tibia);
Species: Rat; Pump: 1007D; 1002; 2002; Duration: 7, 14 days;
ALZET Comments: Functionality of mp verified by residual volume; comparison of injections vs. mp; post op. care (heated cage/analgesics); pumps used for systemic or targeted delivery; silastic tubing used; "The pumps were well tolerated without inflammatory reaction, infection, or pain." (p. 273); picture of pump and catheter (radiograph image) p. 277, fig 10A-B;

Agents: Testosterone propionate; acetothiolutamide; bicalutamide, R- Vehicle: PEG 300; Route: SC; Species: Rat; Pump: 2002; Duration: 2 weeks;
ALZET Comments: Controls received mp w/vehicle; functionality of mp verified by residual volume; replacement therapy (orchidectomy); comparison of bolus IV injections vs. mp (p. 1327); stability verified by preliminary experiments (14 days at 37 C. of acetothiolutamide; half-life (p. 1327) acetothiolutamide (26 min); bicalutamide is a nonsteroidal androgen;

Agents: Testosterone propionate; bicalutamide derivatives; hydroxyflutamide derivatives Vehicle: PEG 300; DMSO; ethanol; Route: SC; Species: Rat; Pump: 2002; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; dose-response; multiple pumps per animal (1-2) due to limited solubility; derivatives were isomers of novel nonsteroidal androgens; functionality of mp verified by residual volume; animal info (male, Sprague-Dawley, 90-100 g, castrated)

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)

Agents: Testosterone; estradiol; progesterone; flutamide Vehicle: Cylodextrin, 2-beta-hydroxypropl; 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)

Agents: Growth hormone, bovine; testosterone; estradiol, 17B- Vehicle: Phosphate buffer; glycerol; sodium asize; propylene glycol; Route: SC; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: Replacement therapy (gonadectomy); comparison of daily injections vs. chronic mp; peptides; GH was recomb bovine & diluted in 0.05 m phosphate buffer, ph 8.6, with 1.6% glycerol & 0.02% sodium azide; testosterone & estradiol were diluted in propylene glycol

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
P5405: P. Val, et al. A 77-base pair LINE-Like sequence elicits androgen-dependent mvdp/akr1-b7 expression in mouse vas deferens, but is dispensable for adrenal expression in rats. Endocrinology 2002;143(9):3435-3448
Agents: Testosterone; Dexamethasone acetate Vehicle: Cyclodextrin; PEG; Route: SC; Species: Rat; Pump: 2001; 2002; Duration: 8, 10 days;
ALZET Comments: Replacement therapy (orchidectomy); testosterone dissolved in cyclodextrin solution and delivered for 10 days via 2002 pumps; dexamethasone was infused via 2001 pumps in PEG vehicle; animal info (adult, male, Wistar)

Agents: Testosterone; nortestosterone, 7a-methyl-19-Vehicle: Molecusol (cyclodextrin); water; Route: SC; Species: Rat; Pump: 2004; Duration: 4 weeks;
ALZET Comments: Testosterone plasma levels checked; 45% aqueous solution of Molecusol (cyclodextrin) used; nortestosterone, 7a-methyl-19- is a.k.a MENT; animal info (adult, male, 9-12 weeks old)

Agents: Nortestosterone, 7 a-methyl-19- Vehicle: Not Stated; Route: SC; Species: Monkey; Pump: 2ML4; Duration: 195 days;
ALZET Comments: Long-term study, pumps replaced every 28 days; a.k.a MENT; animal info (m, bonnet,

Agents: Estradiol; testosterone Vehicle: PEG; Route: SC; Species: Rabbit; Pump: 2002; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; estradiol plasma levels taken; replacement therapy (ovariectomy); multiple pumps per animal used (2) for estradiol and testosterone group; animal info (female, New Zealand, white, 3.5-4.0 kg)

Agents: Testosterone Vehicle: PEG 400; Route: SC; Species: Rat; Pump: 2001; Duration: 1 week;
ALZET Comments: Controls received mp w/ vehicle; replacement therapy (orchidectomy); multiple pumps per animal (2)

Agents: Azaline B; Testosterone, 7a-methyl-19-nor Vehicle: Water; Mannitol; Cyclodextrin, hydroxypropyl (molecusol); Route: Not Stated; Species: Rat; Pump: 2ML2; 2ML4; Duration: 1,2,3,4,8 weeks;
ALZET Comments: Replacement therapy; Azaline B is a LHRH-antagonist; agents infused together or singly; the vehicle for nortestosterone was hydroxypropyl beta-cyclodextrin (trappsol); long-term study

Agents: Dihydrotestosterone Vehicle: Not Stated; Route: Not Stated; Species: Mice (pregnant); Pump: Not Stated; Duration: 7 days;
ALZET Comments: Teratology; pellets also used to administer DHT