References (2015-2020) on the Administration of Testosterone Using ALZET® Osmotic Pumps


**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:** 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, Salpha-; 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-NETA 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;  
**Pump:** Not stated;  
**Duration:** Not Stated;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (littermate mice aged 10–16 weeks.); dihydrotestosterone aka DHT; nonaromatizable AR agonist ; Brain coordinates (coordinates compared with the bregma L +1 mm, AP −0.2 mm, DV −2 mm)); bilateral cannula used; diabetes;

Q7730: 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;  
**Pump:** Not Stated;  
**Duration:** Not Stated;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (littermate mice aged 10–16 weeks.); dihydrotestosterone aka DHT; Brain coordinates ((coordinates compared with the bregma L +1 mm, AP −0.2 mm, DV −2 mm)); 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;  
**Pump:** 2004;  
**Duration:** 28 days;

**ALZET Comments:** Dose (1.875 ug/hr/day); animal info (Nkx3.1); cancer (Prostate);
**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-β-;  
**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);

**Agents:** Testosterone  
**Vehicle:** Not Stated;  
**Route:** SC  
**Species:** Mice;  
**Pump:** 2004;  
**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;