References on the Administration of Estrogens
Using ALZET® Osmotic Pumps

Q8591: S. V. Koebele, et al. Characterizing the effects of tonic 17beta-estradiol administration on spatial learning and memory in the follicle-deplete middle-aged female rat. Horm Behav 2020;126(104854

Agents: Estradiol, 17-beta- Vehicle: PEG; Route: SC; Species: Rat; Pump: 2006; Duration: 6 weeks;
ALZET Comments: Dose (3 μg/day); Controls received mp w/ vehicle; animal info (female, virgin, Fischer-344 rats, 11 months old); 17-beta-estradiol aka E2; replacement therapy (estradiol);


Agents: 17 β-Estradiol; 4,4′,4″-(4- Propyl-[1H]-pyrazole-1,3,5-triyl) trisphenol; Diarylpropiolnitrile; G-1 Vehicle: DMSO; Cyclodextrin, Hydroxypropl-ß-; Route: SC; Species: Rat; Pump: 2002; Duration: 30 days;
ALZET Comments: Dose (3 μg/day 17 β-Estradiol; 5 μg/day other agonists); 10% DMSO, 20% Hydroxypropl -ß-Cyclodextrin used; Controls received mp w/ vehicle; animal info (Female Sprague–Dawley rats, 11 weeks of age); 17 β-Estradiol aka E2; 4,4′,4″-(4- Propyl-[1H]-pyrazole-1,3,5-triyl) trisphenol aka PPT; Diarylpropiolnitrile aka DPN; G-1 aka GPER1 agonist; replacement therapy (estradiol);


Agents: Estradiol benzoate, 17-beta- Vehicle: PEG; Route: SC; Species: Rat; Pump: Not stated; Duration: 28 days;
ALZET Comments: Dose (750 ng/6 ul/day); animal info (Transgenic male (300 g) and female Long Evans rats (260 g)); replacement therapy (estradiol);


Agents: Estradiol, 17B- Vehicle: Not stated; Route: Intraovarian; Species: Mice; Pump: Not stated; Duration: 8 weeks;
ALZET Comments: Dose (20 μg/kg/day); animal info (Six-month-old WT C57Bl6 mice); 17B-Estradiol aka E2; replacement therapy (estradiol);


Agents: Estradiol, 17 beta- Vehicle: Not stated; Route: SC; Species: Rat; Pump: 2ML4; Duration: 5 weeks;
ALZET Comments: Dose (75 μg/kg/d); Controls received mp w/ vehicle; animal info (Male 8 week old Sprague–Dawley rats (300–350 g)); 2', 3', 4' - trihydroxychalcone aka CC7; Therapeutic indication (Pulmonary arterial hypertension);


Agents: Estradiol, 17 beta- Vehicle: Not stated; Route: SC; Species: Mice; Pump: 1007D; Duration: 7 days;
ALZET Comments: Dose (0.0167mg); Controls received mp w/ placebo; animal info (Chimera male); replacement therapy (ovariectomy);

Q7292: C. B. Herber, et al. 2’, 3’, 4’-trihydroxychalcone is an Estrogen Receptor Ligand Which Modulates the Activity of 17β-estradiol. bioRxiv 2019;1-10

Agents: Estradiol, 17beta-; trihydroxychalcone, 2’, 3’, 4’- Vehicle: DMSO, Ethanol, Water; Route: Not Stated; Species: Mice; Pump: 2006; Duration: 4 weeks;
ALZET Comments: Dose (1 μg 17beta-estradiol, 2 μg CC7); 50% DMSO, 25% ethanol, 25% deionized water used; Controls received mp w/ vehicle; animal info (8 week old C57Bl6/J female ovariectomized mice); 2’, 3’, 4’- trihydroxychalcone aka CC7; Therapeutic indication (menopausal hormone therapy);


Agents: Estradiol, 17b- Vehicle: Saline; Route: SC; Species: Rat; Pump: Pump model not stated; Duration: 10 weeks;
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ALZET Comments: Dose (0.025 mg/day); Controls received mp w/ vehicle; animal info (female, Sprague-Dawley, 12 weeks old, 250-300 g); neurodegenerative (Alzheimer’s disease);

Agents: Estradiol Vehicle: CSF, artificial; Route: SC; CSF/CNS (lateral ventricle); Species: Mice; Pump: 1004; Duration: 3 weeks;
ALZET Comments: Dose ((SC 50 μg/kg/day), (ICV 1 μg/kg/day)); Controls received mp w/ vehicle; animal info (16 weeks, female, C57BL/6); behavioral testing (radial-arm water maze); pumps replaced every 4 weeks; 10beta,17beta-dihydroxyestra-1,4-dien-3-one (DHED) is a brain-selective prodrug of E2; neurodegenerative (Alzheimer’s); pump model not stated but flow rate listed as 0.025 μL/min; Therapeutic indication (DHED-based estrogen treatment shown to decrease APP and Abeta peptide levels concomitantly improving learning in male animals at an early stage of the neuropathology.);

Agents: estradiol, 17-beta-; DHED Vehicle: PEG; Route: SC; Species: Rat; Pump: Not Stated; Duration: 14 days;
ALZET Comments: Dose (10 μg/kg/d); Controls received mp w/ vehicle; animal info (PND 21, male, Sprague-Dawley); comparison of soy protein isolate vs mp;

Agents: 17B-Estradiol Vehicle: PBS, Ethanol; Route: SC; Species: Mice; Pump: Not Stated; Duration: Not Stated;
ALZET Comments: animal info (Female, Wistar;) dependence;
**ALZET® Bibliography**

**ALZET Comments**: Ang-II (1000 ng/kg/min), Estradiol (0.25 ug/hr); Beta-estradiol reconstituted in a PBS-ethanol solution [9:1]; animal info (8- to 12-week-old female C57BL/6 mice);