Recent References (2010-Present) on the Administration of Prolactin Using ALZET® Osmotic Pumps

**Q9874:** A. Zamora-Moratalla, et al. Prolactin enhances hippocampal synaptic plasticity in female mice of reproductive age. Hippocampus 2021;31(3):281-293

**Agents:** Prolactin  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 2001;  
**Duration:** 7 days;  

**ALZET Comments:** Dose (150 ug/day); Controls received mp w/ vehicle; animal info (nulliparous female mice, 2-3 months old);  

**Q10136:** L. I. Cere, et al. Induction of P-glycoprotein expression and activity by prolactin in female rat liver. Life Sciences 2021;287(119936

**Agents:** Prolactin  
**Vehicle:** NaCl; Tris-HCl;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2001;  
**Duration:** 7 days;  

**ALZET Comments:** Dose: Prolactin (300 μg/day); 0.9% NaCl vehicle used; Controls received mp w/ vehicle; animal info: Adult female Wistar (weighing 280–310 g); Prolactin aka (PRL); Actinomycin D aka (ActD) Bromocriptine is a dopamine receptor agonists  

**Q9492:** T. Takeda, et al. Gestational dioxin exposure suppresses prolactin-stimulated nursing in lactating dam rats to impair development of postnatal offspring. Biochemical Pharmacology 2020;178(114106

**Agents:** Prolactin  
**Vehicle:** Saline, sterile;  
**Route:** CSF/CNS (lateral ventricle);  
**Species:** Rat;  
**Pump:** 2002;  
**Duration:** 28 days;  

**ALZET Comments:** Dose (400 ng/day); Controls received mp w/ vehicle; animal info (Male (10 wk, 280 ~ 320 g) and female (6–7 week, 160 ~ 220 g) Wistar rats); behavioral testing (Maternal Capacity Tests, Y-maze Test); ALZET brain infusion kit 2 used; Brain coordinates (antero-posterior, −1.0 mm and lateral, 1.0 mm from the bregma, and depth of 4 mm.); replacement therapy  


**Agents:** Prolactin ovine  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Bird;  
**Pump:** 1007D;  
**Duration:** 7 days;  

**ALZET Comments:** Dose (80 μg/day); 0.87% NaCl used; Controls received mp w/ vehicle; animal info (Female brown-headed and bronzed cowbirds); Ovine Prolactin aka Prolactin; replacement therapy (Prolactin);  


**Agents:** Prolactin  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1003D;  
**Duration:** Not Stated;  

**ALZET Comments:** Dose (1500 ug/day); Controls received mp w/ vehicle; animal info (20-25 g, 8-12 weeks old); dependence;  


**Agents:** Prolactin, ovine  
**Vehicle:** Sodium bicarbonate;  
**Route:** SC;  
**Species:** Bird (brown-headed cowbirds), bird (bronzed cowbirds), bird (red-winged);  
**Pump:** 1007D;  
**Duration:** 7 days;  

**ALZET Comments:** Dose (80 ug/day); Controls received mp w/ vehicle;  


**Agents:** Prolactin  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Mice;  
**Pump:** 1002;  
**Duration:** 14 days;  

**ALZET Comments:** Dose (18 ug/day); Controls received mp w/ vehicle; animal info (5 months old, ob/ob, 56 g);  


**Agents:** Ovine prolactin  
**Vehicle:** CSF, artificial;  
**Route:** IV;  
**Species:** Rat;  
**Pump:** 2001;  
**Duration:** 7 days;  

**ALZET Comments:** Dose (2.5 ug/uL/hr); Controls received mp w/ vehicle; animal info (10 week old, female, SD);  

**Q8103:** K. S. Lynch, et al. Losing maternal care: Neotenic gene expression in the preoptic area of avian brood parasites. bioRxiv 2018;

**Agents:** Prolactin  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Cowbird;  
**Pump:** 1007D;  
**Duration:** 7 days;  

**ALZET Comments:** Dose (80 ug/day); 0.87% Saline used; Controls received mp w/ vehicle; dependence;
Agents: prolactin, ovine Vehicle: Not Stated; Route: SC; Species: Rat (lactating); Pump: Not Stated; Duration: 17 days;
ALZET Comments: Dose (0.16 mg/kg/d); Controls received sham surgery; animal info (female, Sprague-Dawley, 300-350g); comparison of oral administration of PRL in pups vs mp; replacement therapy (prolactin); pump model not stated although listed as a 28-day rate. pumps implanted from d4 to d21 of lactation;

Agents: Prolactin, ovine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: Not Stated; Duration: 28 days;
ALZET Comments: Dose (0.16 mg/kg /d); Controls received mp w/ vehicle; animal info (Male Wistar rats); diabetes; “…the pumps were implanted sc in less than 2minutes.” (P.57)

Agents: Progesterone; Prolactin Vehicle: Cyclodextrin, 2-hydroxypropyl-b; Route: SC; Species: Mice; Pump: 2002; Duration: 14 days;
ALZET Comments: Dose (progesterone 250 μg/day; prolactin 7 μg/day); 20% (w/v) 2-hydroxypropyl-beta-cyclodextrin used; Controls received mp w/ vehicle; animal info (7–8 week old female mice with bilateral oophorectomy); replacement therapy (oophorectomy);

Agents: Prolactin Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 1003D; Duration: 14 days;
ALZET Comments: Dose (1500 μg/day); Controls received mp w/ vehicle; animal info (Adult female C57BL/6J mice aged 8-12 weeks);

Agents: Prolactin Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 1003D; Duration: 3 days;
ALZET Comments: Dose (1500 μg/day-); Controls received mp w/ vehicle; animal info (Male Sprague-Dawley rats weighing 200–250 g);

Agents: Prolactin Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 1003D; Duration: 3 days;
ALZET Comments: Dose (1500 μg/day-); Controls received mp w/ vehicle; animal info (Male Sprague-Dawley rats weighing 200–250 g);

Agents: Prolactin Vehicle: PBS, Dulbecco’; s; Route: SC; Species: Mice; Pump: Not Stated; Duration: 28 days;
ALZET Comments: Dose (2.4 μg/day); Controls received mp w/ vehicle; animal info (Eight week-old C57BL6/J female mice);

Agents: Prolactin, recombinant mouse Vehicle: Albumin, mouse; Route: Not Stated; Species: Mice (NOD); Pump: 1004; Duration: 3 weeks;
ALZET Comments: Controls received mp w/ vehicle; Controls received mp w/ vehicle; diabetes; Therapeutic indication (diabetes); Dose (2.7 ug/d); resulted in serum PRL level 300-500 ng/mL;

Agents: Prolactin, ovine Vehicle: PBS; BSA; Route: SC; Species: Mice; Pump: Not Stated; Duration: 7 days;
ALZET Comments: Controls received mp w/ saline; animal info (male, OPG-KO, 12-14 weeks old); diabetes;
Agents: Prolactin Vehicle: Saline; Route: SC; Species: Cattle (pregnant); Pump: Not Stated; Duration: 28 days;
ALZET Comments: Controls received no mp; animal info (female, Holstein, multiparous); functionality of mp verified by blood samples; pumps removed after 28 days;

Q4064: M. Ricke-Hoch, et al. Opposing roles of Akt and STAT3 in the protection of the maternal heart from peripartum stress. Cardiovascular Research 2014;101(587-596
Agents: Prolactin Vehicle: Saline; Route: Not Stated; Species: Mice (pregnant); Pump: Not Stated; Duration: 14 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, CKO, pregnant); cardiovascular; peptides;

Q3424: J. D. Buntin, et al. Increased STAT5 signaling in the ring dove brain in response to prolactin administration and spontaneous elevations in prolactin during the breeding cycle. General and Comparative Endocrinology 2014;200(1-9
Agents: Prolactin, ovine Vehicle: Saline; sodium bicarbonate; Route: SC; Species: Bird (ring dove); Pump: 2001; Duration: 7 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, ring doves, adult, non-breeding);

Agents: Prolactin Vehicle: Saline; Route: SC; Species: Gerbil; Pump: 2002; Duration: 2 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, Mongolian, 6-7 months old, 59-88g); functionality of mp verified by serum levels; behavioral testing (physical activity);

Agents: Prolactin, mouse, recomb. Vehicle: Albumin, mouse serum; saline; Route: SC; Species: Mice; Pump: 1007D; Duration: 7 days;
ALZET Comments: Control animals received mp w/ vehicle; animal info (male, female, Nestin CreER TM/ERK5 loxP/loxP, 8-10 wks old)

Agents: Prolactin, ovine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: Not Stated; Duration: 6 days; 21 days;
ALZET Comments: Animal info (male, Sprague Dawley, 200-250g); functionality of mp verified by serum levels at 21 days; behavioral testing (hind paw pain); immunology;

Agents: Prolactin, mouse, recomb Vehicle: BSA; saline, sterile; Route: CSF/CNS (hippocampus); Species: Mice; Pump: 1007D; Duration: 7 days; 28 days;
ALZET Comments: Control animals received mp w/ vehicle; animal info (CS7BL/6, adult); behavioral testing (Morris water maze test, Porsolt forced swim test, open field test, Y maze test)

Agents: Prolactin Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 2004; Duration: 28 days;
ALZET Comments: Control animals received mp w/ PBS; animal info (6 wks old, adult, female)

Agents: Prolactin, rat Vehicle: NaHCO3; NaCl; Route: CSF/CNS; Species: Rat; Pump: Not Stated; Duration: 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 224 g)