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

**Agents**: Vasopressin, 8-deamino-arginine **Vehicle**: DMSO; Saline; **Route**: SC; **Species**: Rat; **Pump**: 2001; **Duration**: 2 days;  
**ALZET Comments**: Sociedad Chilena de Anatomia

**Agents**: Vasopressin, 1-desamino-8-D arginine **Vehicle**: Saline; **Route**: SC; **Species**: Mice; **Pump**: 1004; **Duration**: 1 week;  
**ALZET Comments**: Dose (0.03 ng/h, 0.3 ng/h, 0.5 ng/h); dose-response (p. 8); Controls received mp w/ vehicle; animal info (Male 8-week-old C57BL/6J mice); 1-desamino-8-D-arginine vasopressin aka dDAVP; dependence;

**Agents**: Vasopressin; dDAVP **Vehicle**: PBS; **Route**: SC; **Species**: Rat; **Pump**: 2001; **Duration**: 3 days;  
**ALZET Comments**: Dose: Vasopressin (40 mg/kg·day); DDAVP (2 mg/kg·day)Controls received mp w/ vehicle; animal info: Male Sprague-Dawley rats, (200–250g)Vasopressin V1B receptor aka (V1BR); 1-desamino-8-D-arginine vasopressin aka (dDAVP)peptides;

**Agents**: Vasopressin, arginine **Vehicle**: Saline; **Route**: Not Stated; **Species**: Mice (pregnant, transgenic); **Duration**: 21 days;  
**ALZET Comments**: Dose (24 ng/hr); Controls received mp w/ vehicle; animal info (C57BL/6 mice were cultured with human TGFb1 and murine GM- CSF and IL-10); cardiovascular;

**Agents**: vasopressin, arginine-8-; rolipram; cilostamide; spironolactone **Vehicle**: Not stated; **Route**: SC; **Species**: Mice; **Pump**: 2002; **Duration**: 4 weeks;  
**ALZET Comments**: Dose ((VP 0.5 mg/kg/day), (rolipram 0.4mg/kg/day), (cilostamide 0.5 mg/kg/day), (spironolactone 1.2 mg/kg/day)); Controls received mp w/ VP; animal info (8 weeks, female, CBA/J, 22-24g); enzyme inhibitor (cilostamide is a PDE3 inhibitor and rolipram is a PDE4 inhibitor); MRI; Therapeutic indication (Spironolactone prevents the development of vasopressin and rolipram-induced endolymphatic hydrops although not cilostamide-induced endolymphatic hydrops);

**Agents**: arginine vasopressin **Vehicle**: Saline; **Route**: SC; **Species**: Mice; **Pump**: 1004; **Duration**: 21 days;  
**ALZET Comments**: Dose (24 ng/hr); Controls received mp w/ vehicle; animal info (12–16 weeks, female, C57BL/6J); teratology;

**Q7864**: J. A. Sandgren, *et al.* Arginine vasopressin infusion is sufficient to model clinical features of preeclampsia in mice. JCI Insight 2018;3(19);  
**Agents**: arginine vasopressin; conivaptan; relcovaptan; tolvaptan **Vehicle**: Saline; DMSO; **Route**: SC; **Species**: Mice; **Pump**: 1002; 1004; 1007D; **Duration**: 1, 2 weeks;  
**ALZET Comments**: Dose ((AVP 24 ng/h), (conivaptan 22 ng/h), (relcovaptan 22 ng/h), (tolvaptan 22 ng/h)); saline or saline with 10% DMSO used; Controls received mp w/ vehicle; Multiple pumps per animal (2 if AVP plus antagonist); conivaptan is a nonselective AVPR1A and AVPR2 antagonist. relcovaptan is an AVPR1A antagonist. tolvaptan is an AVPR2 antagonist; AVP and tolvaptan were reconstituted in saline while relcovaptan was reconstituted in saline with 10% DMSO;

**Agents:** Vasopressin **Vehicle:** Not stated; **Route:** SC; **Species:** Rat; **Pump:** Not stated; **Duration:** 5 days;

**ALZET Comments:** Dose (5 ng/hr); animal info (Male, Sprague-Dawley, 120-160 g); Vasopressin aka dDAVP; dependence;


**Agents:** Vasopressin **Vehicle:** Not stated; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** 3.5 days;

**ALZET Comments:** Dose (2.4 μg/24 h); animal info (Male Wistar rats weighing 250-300 g); ischemia (cerebral); cardiovascular; Minipumps used administer asopressin to induce prolonged hyponatremia;


**Agents:** Antagonist, vasopressin V1A receptor **Vehicle:** CSF, artificial; **Route:** CSF/CNS; **Species:** Rat; **Pump:** 2001; **Duration:** 3 days;

**ALZET Comments:** Dose (416 ng/hr); animal info (Sprague Dawley, 250-350 g); ALZET brain infusion kit 2 used; Dose (0.25 ng/h);


**Agents:** Vasopressin **Vehicle:** Not Stated; **Route:** IP; **Species:** Rat; **Pump:** 2006; **Duration:** 4 weeks;

**ALZET Comments:** Animal info (male, Fa/ fa Zucker, 7 weeks old); no stress (see pg. 1083-1084); diabetes;


**Agents:** Vasopressin, 1-desamino-8-D-arginine **Vehicle:** Not Stated; **Route:** SC; **Species:** mice; **Pump:** 1002; **Duration:** 5 days;

**ALZET Comments:** Animal info (PPARy f/f mice and EsrCre/flox mice; 2-4 mo males); functionality of mp verified by urine osmolalities; Dose (0.25 ng/h);


**Agents:** Vasopressin **Vehicle:** Not Stated; **Route:** IP; **Species:** Rat; **Pump:** Not Stated; **Duration:** 4 weeks;

**ALZET Comments:** Animal info (male, Fa/f Zucker, 7 weeks old); no stress (see pg. 1083-1084); diabetes;

Q4518: S. C. Luetken, et al. AVP-Induced Increase in AQP2 and p-AQP2 Is Blunted in Heart Failure during Cardiac Remodeling and Is Associated with Decreased AT1R Abundance in Rat Kidney. PLoS One 2015;10(U754-U786

**Agents:** Vasopressin, 1-desamino-8-D-arginine **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2001; **Duration:** 7 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Munich-Wistar rat, 250g); cardiovascular; 1-desamino-8-D-arginine vasopressin aka DDAVP;


**Agents:** Vasopressin, 1-deamino-8-D arginine **Vehicle:** Saline; **Route:** SC; **Species:** Rat; **Pump:** 2004; **Duration:** 7 weeks; 8 weeks; 12 weeks;

**ALZET Comments:** Controls received mp w/ vehicle; animal info (rat PCK, 3 weeks old; mice Pkd1 RC/RC or Pkd2 WS25/- 4 weeks old); pumps replaced every 3 weeks; cardiovascular;


**Agents:** Vasopressin **Vehicle:** Not Stated; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 14 - 30 days;

**ALZET Comments:** Controls received mp w/ vehicle; animal info: Five female C57BL6 mice and 4 and 6 female CBA/J mice of body weight 22 - 24 g (8 weeks of age); functionality of mp verified by MRI; dose-response (pg 3); MRI; "EH was induced, to our knowledge for the first time, by chronic administration of vasopressin via mini-osmotic pumps in two mouse strains using 9.4 T MRI in combination with Gd contrast agent intraperitoneally as read-out" (pg 5); Dose: 50 mg/100 g/day

Agents: Vasopressin, 1-deamino-8-D-arginine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2002; Duration: 4 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (female, Wistar, 200-260g); cardiovascular;


Agents: Vasopressin, 1-deamino-8-D-arginine Vehicle: Not Stated; Route: Not Stated; Species: Rat; Pump: Not Stated; Duration: 8 weeks;

ALZET Comments: Animal info (PCK/Brattleboro, 3-10 weeks old); long-term study; cardiovascular;


Agents: Vasopressin, arginine Vehicle: Saline; Route: SC; Species: Mice (pregnant); Pump: 1004; Duration: Not Stated;

ALZET Comments: Controls received mp w/ vehicle; animal info (C57BL6/J); bp measured using tail cuff; preeclampsia model


Agents: Tolvaptan; vasopressin, arginine Vehicle: DMSO; glycerol; Route: SC; Species: Rat; Pump: 2ML1; 2001; Duration: 4 days;

ALZET Comments: Control animals received mp w/ vehicle; animal info (pathogen-free, Sprague Dawley, Brattleboro, 190-215 g, male); 50% DMSO used; 50% glycerol used; “The third alternative, osmotic minipumps, proved the most practical approach (versus food or water for tolvaptan infusion) pg F360; dose response (Fig 1); good methods (appendix 1); “alternative to dDAVP infusion in Brattleboro rats” pg F363


Agents: Vasopressin, 1-desamino-8-D-arginine Vehicle: Not Stated; Route: SC; Species: Mice; Pump: 1002; Duration: 14 days;

ALZET Comments: Controls received mp w/ vehicle; animal info (DC AC3 KO); cardiovascular; bp measured using radiotelemetry;

Q4239: A. Cudnoch-Jedrzejewska, et al. The effect of blockade of the central V1 vasopressin receptors on anhedonia in chronically stressed infarcted and non-infarcted rats. PHYSIOLOGY & BEHAVIOR 2014;135(208-214

Agents: Vasopressin, deamino-Pen1,O-Me-Tyr2,Arg8 Vehicle: Not Stated; Route: CSF/CNS; Species: Rat; Pump: 2ML4; Duration: 28 days;

ALZET Comments: Controls received mp w/ saline; animal info (male, Sprague Dawley, 8-10 weeks old); ALZET brain infusion kit used; no stress (see pg. 211); post op. care (buprenorphine 3ug/100g IP BID 2-3 days, Penicillin 1000IU/100g IM); behavioral testing (chronic mild stress); cardiovascular; Cannula placement verified via Evans blue dye postmortem; Vasopressin, deamino-Pen1,O-Me-Tyr2,Arg8 aka V1RANT is a V1 receptor antagonist; myocardial infarction;


Agents: Vasopressin, 1-deamino-8-D-arginine Vehicle: Not Stated; Route: Not Stated; Species: Mice; Pump: Not Stated; Duration: 3 days;

ALZET Comments: Animal info (PKC alpha -/-, wt)


Agents: Vasopressin, 1-deamino-8-D-arginine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2002; 2ML4; Duration: 14 days;

ALZET Comments: Animal info (Sprague Dawley, Lewis Evans, adult, male); pump functionality verified by pump removal/inspection and urine osmolality levels (Fig 2)

**Agents:** Vasopressin, 1-deamino-8-D arginine  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Rat  
**Pump:** Not Stated  
**Duration:** 5 days

**ALZET Comments:** Control animals received mp w/ saline; animal info (Sprague Dawley, 200-250 g)


**Agents:** FE201874; arginine vasopressin; desmopressin; d[Leu4,Lys8]VP; [Thr4,Gly7]OT  
**Vehicle:** Saline; DMSO; Cremophore  
**Route:** SC  
**Species:** Rat  
**Pump:** Not Stated  
**Duration:** 3 days

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague Dawley, adult, 200-250g); 5% DMSO, 7.5% Cremophore used; dose-response (288); cardiovascular; Desmopressin aka dDAVP; FE 201874 is a selective agonist of the rat V1A receptor


**Agents:** Vasopressin, 1-deamino-8-D arginine  
**Vehicle:** Saline, isotonic  
**Route:** SC  
**Species:** Rat  
**Pump:** 1002  
**Duration:** 8 days

**ALZET Comments:** animal info (male, Wistar, 150-200 g)


**Agents:** Vasopressin, 1-deamino-8-D arginine  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Mice  
**Pump:** 2002  
**Duration:** 7 days

**ALZET Comments:** Animal info (wt, UT-A1/A3 KO)


**Agents:** Vasopressin, 1-deamino-8-D arginine  
**Vehicle:** Not Stated  
**Route:** SC  
**Species:** Rat  
**Pump:** 2004  
**ALZET Comments:** Animal info (Fisher Brown, Norway, F1 hybrid, young adult); pumps replaced monthly


**Agents:** Vasopressin, 1-deamino-8-D arginine; secretin  
**Vehicle:** CSF, artificial  
**Route:** CSF/CNS  
**Species:** Rat; mice  
**Pump:** 2002; 2ML4  
**Duration:** 7, 12 weeks

**ALZET Comments:** Controls received mp w/ vehicle; animal info (3 wks old, PKD2 -/WS25); pumps replaced every 2 weeks, every 4 weeks, or after 2 and 5 weeks; functionality of mp verified via plasma secretin levels; long-term study


**Agents:** Vasopressin, 1-deamino-8-D arginine; | Vehicle:** Not Stated  
**Route:** Not Stated  
**Species:** Rat; Mice  
**Pump:** Not Stated

**ALZET Comments:** Peptides; Animal info (230-260g, C57Bl/6J)


**Agents:** Vasopressin, 1-deamino-8-D-arginine  
**Vehicle:** Saline  
**Route:** SC  
**Species:** Rat  
**Pump:** 2001  
**Duration:** 5 days

**ALZET Comments:** Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 200-250 g)


**Agents:** Vasopressin, arginine; oxytocin receptor antagonist; AVP receptor antagonist  
**Vehicle:** CSF, artificial  
**Route:** CSF/CNS  
**Species:** Rat  
**Pump:** 2002  
**Duration:** 10 days

**ALZET Comments:** Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 6-20 wks old); peptides; ALZET brain infusion kit 2 used
Agents: Vasopressin, 1-deamino-8-D arginine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2004; Duration: 3 months;
ALZET Comments: Animal info (22 mo old, F344 Brown Norway hybrid, 200 g); long-term study; pumps replaced monthly

Agents: Vasopressin, 1-desamino-8-D arginine; Losartan Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 1003D; Duration: 2 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Wistar, 180-220 g)

Agents: Vasopressin, 1-desamino-8-D arginine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2002;
ALZET Comments: Animal info (Sprague-Dawley, 250-300 g)

Agents: Candesartan; Vasopressin, 1-deamino-8-D arginine Vehicle: Saline, physiological; Route: SC; Species: Rat; Pump: 2001; Duration: 4 days;
ALZET Comments: Animal info (Munich Wistar, male)

Agents: Vasopressin, 1-desamino-8-D arginine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2002; Duration: 14 days;
ALZET Comments: Controls received mp w/ saline; no stress (pg. 108); animal info (male, Sprague-Dawley, 8 weeks old); dose-response (Fig. 1); endocrinology; behavioral testing (Irwin’s test, rotarod treadmill test, passive avoidance test)

Agents: Vasopressin Vehicle: Not Stated; Route: SC; Species: Guinea pig; Pump: 2002; Duration: 7, 14 days;
ALZET Comments: Animal info (male, albino, Hartley, 300-500 g)

Agents: Desmopressin arginine vasopressin Vehicle: Acetic acid; Route: SC; Species: Mice; Pump: 1002; Duration: 30 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, FNDI, 1 mo old); pumps replaced on day 10 and 20

Agents: Vasopressin, 1-desamino-8-D arginine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2001; Duration: 4 days;
ALZET Comments: Animal info (male, Wistar, 250-300 g)

Agents: Arginine vasopressin Vehicle: NaCl; Route: CSF/CNS; Species: Rat; Pump: Not Stated; Duration: 4 weeks;
ALZET Comments: Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 8-10 wks old); ALZET brain infusion kit used; cannula placement verified by injecting Evan’s blue dye into the cannula and inspecting sagittal sections of the brain; 2ML sized pump used