Recent References (2008-2019) on the Administration of Vasopressin Using ALZET® Osmotic Pumps

ALZET Comments: Vasopressin, arginine; Saline; Mice (pregnant, transgenic); 21 days; 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;

ALZET Comments: Vasopressin; SC; Rat; 2002; 3.5 days; Dose (2.4 μg/24 h); animal info (Male Wistar rats weiging 250–300 g); ischemia (cerebral); cardiovascular; Minipumps used administer asopressin to induce prolonged hyponatremia;

ALZET Comments: Antagonist, vasopressin V1A receptor; CSF, artificial; CSF/CNS; Rat; 2001; 3 days; Controls received mp w/ vehicle; animal info (Sprague Dawley, 250-350g); ALZET brain infusion kit 2 used; Dose (416 ng/hr);

ALZET Comments: Vasopressin; IP; Rat; 2006; 4 weeks; Dose (500 ng/kg/day); animal info (Eight-week-old male Sprague-Dawley and lean Zucker rats); Dose (0.25 ng/h);

ALZET Comments: Vasopressin, 1-desamino-8-D-arginine; SC; mice; 2002; 5 days; 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);

Q4608: C. Taveau, et al. Vasopressin and hydration play a major role in the development of glucose intolerance and hepatic steatosis in obese rats. DIABETOLOGIA 2015;58(1081-1090
ALZET Comments: Vasopressin; IP; Rat; 4 weeks; Animal info (male, Fa/ fa 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
ALZET Comments: Vasopressin, 1-desamino-8-D-arginine; Saline; SC; Rat; mice; 2004; 2ML4; 7 weeks; 8 weeks; 12 weeks;; 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;

Q4453: K. Hopp, et al. Effects of hydration in rats and mice with polycystic kidney disease. AMERICAN JOURNAL OF PHYSIOLOGY-RENAL PHYSIOLOGY 2015;308(F261-F266
ALZET Comments: Vasopressin, 1-desamino-8-D-arginine; Saline; SC; Rat; mice; 1004; 2004; 2ML4; 7 weeks; 8 weeks; 12 weeks;; 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;

ALZET Comments: Vasopressin; SC; mice; 2002; 14 - 30 days; 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.
**ALZET Comments:** Vasopressin, 1-deamino-8-D-arginine; Saline; SC; Rat; 2002; 4 days; Controls received mp w/ vehicle; animal info (female, Wistar, 200-260g); cardiovascular.

**ALZET Comments:** Vasopressin, 1-deamino-8-D-arginine; Rat; 8 weeks; Animal info (PCK/Brattleboro, 3-10 weeks old); long-term study; cardiovascular.

**ALZET Comments:** Vasopressin, arginine; Saline; SC; Mice (pregnant); 1004; Controls received mp w/ vehicle; animal info (C57BL6J); bp measured using tail cuff; preeclampsia model.

**ALZET Comments:** Tolvaptan; vasopressin, arginine; DMSO; glycerol; SC; Rat; 2001; 4 days; 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 dD AVP infusion in Brattleboro rats" pg F363.

**ALZET Comments:** Vasopressin, 1-desamino-8-D-arginine-; SC; Mice; 1002; 14 days; Controls received mp w/ saline; 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
**ALZET Comments:** Vasopressin, deamino-Pen1,O-Me-Tyr2,Arg8; CSF/CNS; Rat; 28 days; 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 10000IU/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.

**ALZET Comments:** Vasopressin, 1-deamino-8-D arginine; Mice; 3 days; Animal info (PKC alpha +/-, wt).

**ALZET Comments:** Vasopressin, 1-deamino-8-D arginine; SC; Rat; 2002; 2ML4; 14 days; Animal info (Sprague Dawley, Lewis Evans, adult, male); pump functionality verified by pump removal/inspection and urine osmolality levels (Fig 2).

**ALZET Comments:** Vasopressin, 1-deamino-8-D arginine; SC; Rat; 5 days; Control animals received mp w/ saline; animal info (Sprague Dawley, 200-250 g).

ALZET Comments: FE201874; arginine vasopressin; desmopressin; d([Leu4,Lys8]VP; [Thr4,Gly7]OT; Saline; DMSO; Cremophore; SC; Rat; 3 days; 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.


ALZET Comments: Vasopressin, 1-deamino-8-D arginine; Saline, isotonic; SC; Rat; 1002; 8 days; animal info (male, Wistar, 150-200 g).


ALZET Comments: Vasopressin, 1-deamino-8-D arginine; SC; Mice; 2002; 7 days; Animal info (wt, UT-A1/A3 KO).


ALZET Comments: Vasopressin, 1-deamino-8-D arginine; SC; Rat; 2004; Animal info (Fisher Brown, Norway, F1 hybrid, young adult); pumps replaced monthly.


ALZET Comments: Vasopressin, 1-deamino-8-D arginine; secretin; SC; Rat; mice; 1004; 2002; 2ML4; 7, 12 weeks; 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.


ALZET Comments: Vasopressin, 1-deamino-8-D arginine; SC; Rat; 2002; 3 months; Animal info (male, Sprague Dawley, male, 200-250 g).


ALZET Comments: Vasopressin, arginine; oxytocin receptor antagonist; AVP receptor antagonist; CSF, artificial; CSF/CNS; Rat; 2002; 10 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 6-20 wks old); peptides; ALZET brain infusion kit 2 used.


ALZET Comments: Vasopressin, 1-deamino-8-D arginine; SC; Rat; 2004; 3 months; Animal info (22 mo old, F344 Brown Norway hybrid, 200 g); long-term study; pumps replaced monthly.


ALZET Comments: Vasopressin, 1-desamino-8-D arginine; losartan; SC; Rat; 1003D; 2 days; Controls received mp w/ vehicle; animal info (male, Wistar, 180-220 g).

ALZET Comments: Vasopressin, 1-desamino-8-D arginine; SC; Rat; 2002; Animal info (Sprague-Dawley, 250-300 g).


ALZET Comments: Candesartan; vasopressin, 1-deamino-8-D arginine; Saline, physiological; SC; Rat; 2001; 4 days; Animal info (Munich Wistar, male).


ALZET Comments: Candesartan; vasopressin, 1-desamino-8-D arginine; Saline, physiological; SC; Rat; 2001; 4 days; Animal info (Munich Wistar, male).


ALZET Comments: Vasopressin; SC; Guinea pig; 2002; 7, 14 days; Animal info (male, albino, Hartley, 300-500 g).


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


ALZET Comments: Vasopressin, 1-desamino-8-D arginine; SC; Rat; 2001; 4 days; Animal info (male, Wistar, 250-300 g).


ALZET Comments: Arginine vasopressin; NaCl; CSF/CNS; Rat; 4 weeks; 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.


ALZET Comments: Vasopressin, 1-desamino-8-D arginine; SC; Mice; 1007D; 7 days; Controls received mp w/ vehicle; animal info (AQP1KO, 8 wks old).


ALZET Comments: Vasopressin, 1-deamino-8-D-arginine; SC; Rat; Animal info (adult, male, Brattleboro, di/di, 330 g, 10-12 wks old); compound also known as desmopressine; incorrectly listed rate of infusion as 1 ml/hr.


ALZET Comments: Vasopressin, 1-desamino-8-D-arginine; oxytocin; SC; Rat; 2002; 4 days; Controls received mp w/ saline; animal info (male, Sprague Dawley, 80-100 g).

ALZET Comments: Vasopressin, 1-desamino-8-D arginine; Saline, isotonic; SC; Rat; 5 days; Controls received mp w/vehicle; animal info (Brattleboro).

ALZET Comments: Vasopressin, 1-desamino-8-D-arginine; Insulin, FITC; IP; Mice; 2002; 2 weeks; Controls were not treated; animal info (AT$_{1a}$-KO, wt).

ALZET Comments: Vasopressin, 1-desamino-8-D arginine; Mice; 1002; 10 days; Controls received mp w/ vehicle; animal info (S/C26a4 -/-).

P9603: C. Kim, et al. Deletion of N-type Ca$^{2+}$ Channel Ca$_{v}$2.2 Results in Hyperaggressive Behaviors in Mice. Journal of Biological Chemistry 2009;284(5):2738-2745
ALZET Comments: Vasopressin; PBS; CSF/CNS; Mice; Controls received mp w/ vehicle; animal info (Cav 2.2 -/-, male, 10-15 wks old); behavioral testing (resident intruder testing).

ALZET Comments: Vasopressin; SC; Rat; 3 days; Animal info (60 days old, Brattleboro, 200-250g).

Q0386: T. Indrambarya, et al. Low-dose vasopressin infusion results in increased mortality and cardiac dysfunction following ischemia-reperfusion injury in mice. CRITICAL CARE 2009;13(3):U361-U368
ALZET Comments: Vasopressin, arginine; dobutamine; IP; Mice; 1003D; Controls received mp w/ normal saline; animal info (10-14 wks old, male, C57B6); post op. care (buprenorphrine).

ALZET Comments: Vasopressin; desmopressin; SC; Rat; 1007D; 3 or 6 days; Controls received mp w/ vehicle; comparison of 2x daily IP injections vs. mp; animal info (Sprague Dawley, 2 months old).

ALZET Comments: Vasopressin, 1-deamino-8-D-arginine; Saline, sterile; SC; Mice (knockout); 1007D; 5 days; Animal info (P2Y2-R KO, wt, 2 and 5 months old); post op. care (ketorolac); nephrology.

ALZET Comments: Vasopressin, d(CH2)5Tyr(Me) Arginine; Saline; CSF/CNS; CSF/CNS (medial amygdala); Rat (pregnant); 2002; 4-6 days; Controls received mp w/ vehicle; dose-response (fig 3); animal info (female, Sprague Dawley, GD18); V1a receptor antagonist; behavioral testing (maternal behavior, social recognition test, maternal memory test); cannula placement confirmed.

Q0618: L. N. Ivanova, et al. Structure and Concentration Capacity of the Kidneys in Brattleboro Rats under Conditions of Long-Term Vasopressin Treatment. BULLETIN OF EXPERIMENTAL BIOLOGY AND MEDICINE 2008;146(5):642-646
ALZET Comments: Vasopressin, arginine; SC; Rat; 2ML4; 28 days; Controls received empty plastic capsules; animal info (2 months old, male, VP -/-); functionality of mp verified by osmolarity of excreted urine.

ALZET Comments: Vasopressin, 1-deamino-8-D-arginine; Saline, isotonic; SC; Rat; 1002; 10 days; Controls received mp w/ vehicle; animal info (male, Brattleboro, DI); endocrinology.

ALZET Comments: Vasopressin; IP; Mice; Controls received mp w/ saline; animal info (5-6 wks old, CD-1 female).

ALZET Comments: Vasopressin, arginine; oxytocin; oligonucleotide, antisense; oligonucleotide, missense; Ringer’s solution; CSF/CNS; CSF/CNS (medial preoptic area); Rat (pregnant); 1007D; 5-7 days; Controls received mp w/ vehicle; comparison of ICV injections vs. mp; antisense (AVP-R); peptides; multiple pumps per animal (2); post op. care (Enrofloxacin, Baytril); animal info (female, Wistar, HAB, LAB, 14 wks old); behavioral testing (maternal care, pup retrieval test, elevated plus maze); cannula placement and infusion sites verified with blue ink.

ALZET Comments: Vasopressin, 1-deamino-8-D-arginine; CSF/CNS; Rat; 1007D; 3, 6 days; Controls received mp w/ PBS; animal info (male, Wistar, Long Evans); dAVP; 26 gauge 10 mm cannula used.