Recent References (2012-2019) on the Administration of Aldosterone
Using ALZET® Osmotic Pumps

ALZET Comments: Aldosterone; Saline; SC; Mice; 28 days; Dose (0.6 µg/kg/d); 1% saline used; Controls received mp w/ vehicle; animal info (adult male DBA2J mice);.

ALZET Comments: Aldosterone; Saline; DMSO; SC; Mice; 1007D; 6 days; Dose (100 ug/kg/hr); animal info (8-13 week old);.

ALZET Comments: Aldosterone; SC; Rat; 2006; 7 days; Dose (80 ug/kg/day); animal info (male Sprague-Dawley rats weighing 200-250g); Therapeutic indication (Retinal ganglion cell loss);.

ALZET Comments: Aldosterone, D-; Mice; 30 days; Dose (0.30 μg/h); animal info (C57BL/6 mice, 18-30 week old);.

ALZET Comments: Aldosterone; DMSO; SC; SC; 2ML4; 4 Weeks; Dose (0.75 ug/hr); 0.15% DMSO/sterile water used; animal info (Male Sprague-Dawley rats 240 to 280 g); post op. care (redness cleaned with betadine and a topical antibiotic applied);.

ALZET Comments: Aldosterone; Mouse; 2001; 7 days; animal info (Sgk1 KO); Dose (12 ug/day);.

ALZET Comments: Aldosterone; DMSO; saline; SC; Mice; 10 days; Controls received mp w/ vehicle; 25% DMSO used; Dose (4 ug/Kg/day);.

ALZET Comments: Aldosterone; Ethanol; IP; Mice; 1002; 8-12 days; Controls received mp w/ vehicle; animal info (4-5 week old); functionality of mp verified by plasma aldosterone levels; 5% ethanol used; Dose (900 ug/mL);.

ALZET Comments: Aldosterone; Rat; 2004; 4 hours; Controls received mp w/ PBS; animal info (male, Sprague Dawley, 8 weeks old); cardiovascular; Bp measured using tail cuff; Dose (0.75 ug/kg/hr);.
ALZET Comments: Aldosterone; DMSO; Saline; SC; Mice; 1007D; 6 days; Dose (100 ug/kg/24 h); 5% DMSO used; Controls received mp w/ vehicle; animal info (Male mice C57BL/6J BomTac);

ALZET Comments: Aldosterone; SC; Mice (knockout); 2004; Dose (0.2 μg/kg body weight per minute); Controls received mp w/ vehicle; animal info (Male systemic GC-A KO mice and wild-type); replacement therapy (left uninephrectomy);

ALZET Comments: Aldosterone; SC; Mice; 7 days; Dose (0.5 mg/h); Controls received mp w/ vehicle; animal info (8-wk-old C57BL/6J male mice weighing 20–25 g);

ALZET Comments: Aldosterone; PEG 300; SC; Rat; 2004; 8 weeks; Dose (0.75 mg/h); Controls received mp w/ vehicle; animal info (Eight-week old male Sprague–Dawley rats); replacement therapy (uninephrectomy); cardiovascular;

ALZET Comments: Aldosterone; SC; Mice; 2 weeks; Controls received mp w/ vehicle; animal info (8-wk-old male mice weighing 25–30 g);

ALZET Comments: Aldosterone; SC; Rat; 2004; 4 weeks; Controls received no mp; animal info (male, Sprague Dawley, 5-6 weeks old, 260-290g); functionality of mp verified by measuring urinary aldosterone levels (pg 220); cardiovascular; bp measured using tail cuff; Dose (0.75 ug/hr);

ALZET Comments: Aldosterone, D-; Mice; 4 weeks; Controls received mp w/ saline; animal info (Male, C57BL6J, 8 weeks old, 20-25g); no stress (see pg. 3); replacement therapy (uniphrectomy); cardiovascular; Dose (30 ug/h);

ALZET Comments: Aldosterone; Saline; SC; Mice; 1002; 7 days; Controls received mp w/ vehicle; animal info (C57BL6 WT or BALB/c, 12-24 weeks old); 240 ug/kr/day.


ALZET Comments: Aldosterone; Saline; Mice (knockout); 7 days; Dose (240 ug/kg/day); animal info (Kidney-specific MR knockout mice, 12-24 weeks old);


ALZET Comments: Aldosterone; Water; ethanol; propylene glycol; SC; mice; 2004; 4 weeks; 28 days; Controls received mp w/ vehicle; animal info (male, C57BL6 or IL-18 KO, 8 weeks old); 9% ethanol used; 86.5% propylene glycol used; replacement therapy (uniphrectomy); immunology; Bp measured using indirect tail cuff; Dose (0.15 ug/h);


ALZET Comments: Aldosterone; Ethanol; SC; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 260-290g); cardiovascular; Dose (0.75 ug/h);


ALZET Comments: Aldosterone; Ethanol; propylene glycol; water; SC; Rat; 2006; 5 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dalwey, 4 week old, 130-150g); 9% ethanol used; 87% propylene glycol; cardiovascular; bp measured using tail cuff; Dose (0.75 ug/h);


ALZET Comments: Aldosterone; SC; Rat; 2ML4; 8 weeks; Controls received no minipump; animal info (8 weeks old); cardiovascular; Therapeutic indication (Hypertension, stroke, thromboembolism); Dose (1.5 ug/h);


ALZET Comments: Aldosterone; DMSO; Saline; SC; Mice; 4 weeks; Dose (0.3 ug/h);

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Bibliography

RECEPTORS IN ALDOSTERONE-SALT HYPERTENSION IN RATS. Neuroscience 2016;314(90-105
ALZET Comments: Aldosterone; eplerenone; FAD286; CSF, artificial; acetonitrile; SC; CSF/CNS; Rat; 2004; 2 weeks, 3 weeks; Controls received mp w/ vehicle; animal info (male, Wistar, 200-250g); 4% acetonitrile used; Multiple pumps per animal; cardiovascular; bp measured using radiotelemetry; bp measured using radiotelemetry; dose (1.5 and 7.5 ug/kg/hr Aldosterone, 5ug/day Eplerenone, 25 ug/day FAD286).

ALZET Comments: Aldosterone; G protein-coupled estrogen receptor 15 antagonist; SC; Mice; 1004; 2 weeks; Controls received mp w/ vehicle; animal info (BALB/c male mice, 2 month old); cancer (Orthotopic renal cancer); dose-response (pg. 2093); Dose (200 ug/kg/day for both).

ALZET Comments: Aldosterone; Mice; 14 days; Dose (600 μg/kg/d); Controls received mp w/ vehicle; animal info (8-10 week old male wild type, NLRP3 knockout, caspase-1 knockout, and interleukin-1 receptor knockout mice); cardiovascular.

ALZET Comments: Aldosterone; SC; Rat; 2004; 28 days; Dose (0.75 μg/kg/min); animal info (5-6 week old male Sprague-Dawley rats weighing 190 g); replacement therapy (uniphrectomy).

ALZET Comments: Aldosterone; SC; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (Male Wistar rats aged 10 wk); functionality of mp verified by aldosterone serum levels; pumps replaced every 2 weeks; bp measured using radiotelemetry (DSI).

ALZET Comments: Aldosterone; SC; Rat; 2002; 10 days; Animal info (male, Brown Norway, 3 or 11 or 28-29 months old); cardiovascular; for combined treatment, drugs delivered in same minipump; bp measured using radiotelemetry (DSI).

**ALZET Comments:** Aldosterone; SC; Mice; 4 weeks; Controls received mp w/ vehicle; animal info (male, C57BL6J, 8 weeks old, 20-23g); replacement therapy (uninephrectomy); cardiovascular; bp measured using tail cuff.


**ALZET Comments:** Aldosterone; NaCl; ethanol; Mice; 3 weeks; Controls received mp w/ vehicle; animal info (male, C57BL6, adult); 5% ethanol used; functionality of mp verified by plasma levels; cardiovascular; bp measured by tail cuff; 1 mg/kg/day.


**ALZET Comments:** Aldosterone; PEG 400; SC; Guinea pig; 2004; 28 days; Controls received mp w/ vehicle; animal info: Male adult guinea pigs weighing 200–250 g; functionality of mp verified by recording action potentials in papillary muscles and IKs in ventricular cardiomyocytes; cardiovascular; ECG used for electrophysiological recordings; Dose: 1 μg/hr.


**ALZET Comments:** Aldosterone; Ethanol; saline; Mice; 1 week; 4 weeks; Controls received mp w/ vehicle; animal info (male, B6D2, 4 months old); functionality of mp verified by: systolic blood pressure (SBP) via tail cuff plethysmography; post op. care (buprenorphine); injected SC 0.05 mg/kg day of; 0.025 mg/kg day after; cardiovascular; cardiovascular; Dose: aldosterone -- 72 μg/kg/day; eplerenone -- 100 mg/kg/day.

**Q4507:** W. Ding, C. Y. Xu, B. Wang, M. M. Zhang and M. M. Zhang. Rotenone Attenuates Renal Injury in Aldosterone-Infused Rats by Inhibiting Oxidative Stress, Mitochondrial Dysfunction, and Inflammasome Activation. MEDICAL SCIENCE MONITOR 2015;21(U1-U8

**ALZET Comments:** Aldosterone; Ethanol; SC; Rat; 2004; 2ML4; 4 weeks; Controls received mp w/ vehicle, Harlan Teklad 18% Protein Global Diet; animal info: wild-type male Wistar rats, weighing 250 g; functionality of mp verified by: systolic blood pressure (SBP) via tail cuff plethysmography; post op. care (buprenorphine); injected SC 0.05 mg/kg day of; 0.025 mg/kg day after; cardiovascular; cardiovascular; Dose: aldosterone -- 7 μg/kg/day; eplerenone -- 100 mg/kg/day.


**ALZET Comments:** Aldosterone; Eplerenone; NaCl; SC; Rat; 2004; 2ML4; 4 weeks; Controls received mp w/ vehicle, Harlan Teklad 18% Protein Global Diet; animal info: male, Sprague Dawley, 220-250g; 0.5% ethanol used; replacement therapy (uninephrectomy); cardiovascular; immunology;.


**ALZET Comments:** Aldosterone; Eplerenone; NaCl; SC; Rat; 2004; 2ML4; 4 weeks; Controls received mp w/ vehicle, Harlan Teklad 18% Protein Global Diet; animal info: male, Sprague Dawley, 180-220 g.

**Q4201:** M. Yang, B. Wang, M. Li, B. Jiang and M. Yang. Connexin 43 is Involved in Aldosterone-Induced Podocyte Injury. CELLULAR PHYSIOLOGY AND BIOCHEMISTRY 2014;34(1652-1662
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Bibliography

ALZET Comments: Aldosterone; SC; Rat; 2004; 4 weeks; Controls received no mp; animal info (male, Sprague Dawley, 260-290g); cardiovascular; bp measured using tail cuff;


ALZET Comments: Aldosterone; Ethanol; water; SC; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (Sprague-Dawley rats, aged 5 weeks); functionality of mp verified by biological parameters; .5% XXX used; dose-response (pg 27); Renal injury model; Dose (0.75ug/hr);


ALZET Comments: Aldosterone; Saline; DMSO; SC; Rat; 2001; 7 days; animal info (male Sprague-Dawley rats (150–200 g));


ALZET Comments: Aldosterone, D-; IP; Mice; 4 weeks; Controls received mp w/ saline; animal info (APNTG, 12 weeks old);


ALZET Comments: Aldosterone; uridine, bromodeoxy-; Ethanol; saline; SC; Mice; 5 days; Controls received mp w/ vehicle; animal info (10 mouse strains; BALB/cAnNCrl, 129S2/SvPasCrl, FVB/NCrl, C57BL/6NCrl, C3H/HeNCrl, CB17/ScNd-Prkdcscid/Icricrl, NOD.CB17-Prkdcscid/NCrCrl, CB17.Cg/Prkdcscid Lystbg/Crl, C57BL/6NTac, and C57BL/6NJ, carotid artery injury); 11% ethanol used; Multiple pumps per animal (2); post op. care (buprenorphine 0.05 mg/kg SC); behavioral testing (nesting behavior); cardiovascular;


ALZET Comments: Aldosterone; bromodeoxyuridine; Ethanol; SC; Mice; 3 days; 11% ethanol used; Multiple pumps per animal (2): one for aldosterone and one for BrdU; no stress: Minipump implantation surgery did not appear to affect TINT results, yet mice were more likely to fail the TINT the morning after CAI surgery. Mice required 2 full days to return to baseline TINT levels. This lag may be due to the fact that minipump implantation surgery is adequately treated with a single dose of buprenorphine whereas CAI surgery is not (see pg. 27); post op. care: Buprenorphine (0.05 mg/kg SC); Dose: Aldosterone (6 g/kg/d), BrdU (25 mg/kg/d);

Q4056: N. Queisser, P. I. Oteiza, S. Link, V. Hey, H. Stopper, N. Schupp and N. Queisser. Aldosterone Activates Transcription Factor Nrf2 in Kidney Cells Both In Vitro and In Vivo. ANTIOXIDANTS & REDOX SIGNALING 2014;21(2126-2142

ALZET Comments: Aldosterone; Rat; 2ML4; 4 weeks; Controls received mp w/ PBS; animal info (male, Sprague Dawley, 5-6 weeks); cardiovascular;

Q4055: N. Queisser, K. Happ, S. Link, D. Jahn, A. Zimnol, A. Geier, N. Schupp and N. Schupp. Aldosterone induces fibrosis, oxidative stress and DNA damage in livers of male rats independent of blood pressure changes. TOXICOLOGY AND APPLIED PHARMACOLOGY 2014;280(399-407

ALZET Comments: Aldosterone; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley RjHan:SD, 5-6 weeks old); toxicology; cardiovascular; bp measured using tail cuff;


**ALZET Comments**: Angiotensin II; aldosterone; SC; Mice; 2002; 14 days; animal info (male, 11 wks old, ATRAP-KO, wt); peptides; blood pressure measured via radiotelemetry.


**ALZET Comments**: Aldosterone; Saline; SC; Rat; 2004; 28 days; Control animals received mp w/ vehicle; animal info (male, Wistar).


**ALZET Comments**: Aldosterone; CSF, artificial; CSF/CNS (fourth ventricle); Rat; 2004; 28 days; Animal info (Wistar-Kyoto, 275g); tissue perfusion (fourth ventricle); cardiovascular.


**ALZET Comments**: Aldosterone, d-; Saline; ethanol; SC; Rat; 2004; 4 weeks; Animal info (Sprague Dawley, uninephrectomized, 6 wks old, male, inbred); replacement therapy (uninephrectomy); 0.5% ethanol used.


**ALZET Comments**: Aldosterone; SC; Rat; 6 weeks; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 220-250g, 6 weeks old); functionality of mp verified by increased bp; replacement therapy (uninephrectomy); immunology; bp measured using tail cuff; long-term study.

**Q4713**: S. C. Clayton, Z. M. Zhang, T. Beltz, B. J. Xue, A. K. Johnson and A. K. Johnson. CNS neuroplasticity and salt-sensitive hypertension induced by prior treatment with subpressor doses of ANG II or aldosterone 1523. AMERICAN JOURNAL OF PHYSIOLOGY-REGULATORY INTEGRATIVE AND COMPARATIVE PHYSIOLOGY 2014;306(R908-R917

**ALZET Comments**: Angiotensin II; aldosterone; CSF, artificial; SC; CSF/CNS; Rat; 2001; 1 week;


**ALZET Comments**: Aldosterone; Propylene glycol; ethanol; water; SC; Mice; 1004; 14 days; Controls received mp w/ vehicle; animal info (male, Nox2-/y or WT, 25 weeks or 70 weeks); functionality of mp verified by plasma levels; 9% ethanol used; 87% propylene glycol used; cardiovascular; bp measured using tail cuff.


**ALZET Comments**: Aldosterone; SC; Rat; 7 days; Animal info (male, Wistar); functionality of mp verified by blood plasma levels; immunology.

ALZET Comments: Valsartan; angiotensin II; aldosterone; IP; Mice; Animal info (C57BL/6J. male); peptides.


ALZET Comments: Propyl pyrazole triol; diarylpropionitrile; aldosterone; DMSO; saline; CSF/CNS; Rat; 2004; 21 days; Cardiovascular; animal info (Sprague-Dawley, female, 10-12 wks old); DPN - selective ERβ agonist, diaryl propionitrile, PPT-selective ERα agonist propyl-pyrazole-triol; 10% DMSO used.


ALZET Comments: Aldosterone; SC; Mice; 1003D; 3 days; Control animals received mp w/ vehicle; animal info (Nedd4L Pax8/LC1 KO).


ALZET Comments: Aldosterone; amiloride; PEG 300; SC; Rat; 2002; 2 days; Animal info (Sprague Dawley, female, wks old, 200-300 g).


ALZET Comments: Aldosterone; NaCl; Rat; 2ML4; 4 weeks; Control animals received mp w/ vehicle; animal info (Sprague Dawley, male, 5-6 wks old).


ALZET Comments: Aldosterone; Saline; ethanol; Mice; 1004; 8 weeks; Control animals received mp w/ vehicle; animal info (ApoE⁻/-, PIGF +/+., ApoE⁻/-, PIGF -/-, 9 wks old); post op care (buprenorphine); pumps replaced after 4 weeks; long-term study.

Q2800: H. Kusunoki, Y. Taniyama, H. Rakugi and R. Morishita. Cardiac and Renal Protective Effects of Irbesartan via Peroxisome Proliferator-Activated Receptorgamma-Hepatocyte Growth Factor Pathway Independent of Angiotensin II Type
ALZET Comments: Aldosterone; SC; Mice; 1002; 4 weeks; Animal info (8 wks old, AT1aRKO).

ALZET Comments: Aldosterone; DMSO; SC; Rat; 24 hours; Control animals received mp w/ vehicle; animal info (Sprague Dawley, male, 235-270 g); 25% DMSO used.

ALZET Comments: Aldosterone; SC; Mice; 2ML4; 56 days; Animal info (C57BLKS/J, db/db, female, 8 wks old); diabetes.

ALZET Comments: Aldosterone; Saline; ethanol; CSF/CNS; CSF/CNS (fourth ventricle); Rat; 2001; 7 days; Control animals received mp w/ vehicle; animal info (Wistar Hannover, male, 280-350 g); guide cannula used; infusion rate incorrectly listed as 2 ul/hr; 1% ethanol used; dose response (table 1).

ALZET Comments: Aldosterone; PEG 400; SC; Rat; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (Male Wistar rats (48 rats, mean body weight 211 g±18 g); Dose (1 μg/h); Functionality of mp verified by Serum Aldosterone levels measured using an aldosterone radioimmunoassay kit.

ALZET Comments: Aldosterone; NaCl; ethanol; Mice; 3 weeks; Control animals received mp w/ vehicle; animal info (wt, Gal-3 KO); 5% ethanol used.

ALZET Comments: Aldosterone, dehydrocorticosterone, 11-; DMSO; SC; Mice; 7 days; Controls received mp w/ (DMSO) (sham operated); animal info (C57BL/6 mice weighing 20-25 g); Cardiovascular (Aldosterone exposure); Therapeutic indication (Cardiovascular); Aldosterone (8 ug/kg/day); 11-dehydrocorticosterone (800 ug/kg/day).

ALZET Comments: Aldosterone; SC; Mice; 7 days; Animal info (C57BL/6, 25-30 g, 8 wks old); functionality of mp verified via plasma drug levels.

ALZET Comments: Angiotensin II; aldosterone; SC; CSF/CNS; Rat; 2001; 2002; 1, 2 weeks; Control animals received mp w/ vehicle; animal info (Sprague Dawley, male, 10-12 wks old); peptides; multiple pumps used (2).
**ALZET Comments:** Aldosterone; Saline, isotonic; SC; Mice; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (TK -/-, wt).

**ALZET Comments:** Aldosterone; Propylene glycol; SC; Rat; 2002; Control animals received mp w/ vehicle; animal info (Sprague Dawley, male, 15 wks old, 370 g); replacement therapy (adrenalectomy).

**ALZET Comments:** Aldosterone; Rat; 4 days; Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 15 wks old); replacement therapy (adrenalectomy).

**ALZET Comments:** Aldosterone; SC; Rat; 8 days; Control animals received mp w/ vehicle; animal info (Sprague Dawley, male, 15 wks old); replacement therapy (adrenalectomy).

**ALZET Comments:** Aldosterone; DMSO; saline, isotonic; SC; Rat; 2002; 10 days; Control animals received mp w/ vehicle; animal info (Sprague Dawley, male, wks old, 160-170 g).

**ALZET Comments:** Aldosterone; Ethanol; SC; Rat; 2002; Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 150-200 g, uniphrectomized); replacement therapy (nephrectomy); 0.5% ethanol used.

**ALZET Comments:** Aldosterone; Ethanol; SC; Mice; 2004; 4 weeks; Controls received mp w/ vehicle; animal info (male, GC-A KO, 28 g); replacement therapy (nephrectomy); 2% ethanol used.

**ALZET Comments:** Aldosterone; angiotensin II; Mice; 2 weeks; Animal info (MR KO); peptides.


Q2735: C. Bay-Richter, L. Hallberg, F. Ventorp, S. Janelidze and L. Brundin. Aldosterone synergizes with peripheral inflammation to induce brain IL-1beta expression and depressive-like effects. Cytokine 2012;60(3):749-754