References on the Administration of Epinephrine Using ALZET® Osmotic Pumps

Agents: Epinephrine Vehicle: Saline; Route: SC; Species: Rat; Pump: 2004; Duration: 2 weeks;
ALZET Comments: Dose (5.4 mg/0.25 mL/h); Controls received mp w/ vehicle; animal info (adult male Sprague-Dawley rats, weighing 250 to 400 g (approximatel 8-12 weeks old)); antisense (intrathecal b2-adrenergic receptor antisense);

Agents: epinephrine, macrophage-activating lipopeptide-2; ICI-118,551 Vehicle: Not Stated; Route: SC; Species: mice;
Pump: 1002; Duration: 7 days; 11 days;
ALZET Comments: animal info (Jax Mice, male, 8-10 weeks of age); peptides; macrophage-activating lipopeptide-2 aka MALP-2; Dose (7mg/kg body weight/day EPI; .7 mg/kg body weight/day ICI);

Agents: Epinephrine; antagonist, beta adrenergic receptor Vehicle: Saline; Route: SC; Species: Mice (transgenic); Pump: 1002; Duration: 8 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (female, EGFP-lys); functionality of mp verified by plasma levels; dose-response (pg. 810); immunology;

Agents: Epinephrine; macrophage-activating lipopeptide-2; ICI-118,551 Vehicle: Not Stated; Route: SC; Species: mice;
Pump: 1002; Duration: 7 days; 11 days;
ALZET Comments: animal info (Jax Mice, male, 8-10 weeks of age); peptides; macrophage-activating lipopeptide-2 aka MALP-2; Dose (7mg/kg body weight/day EPI; .7 mg/kg body weight/day ICI);

Agents: Epinephrine Vehicle: Saline, buffered; Route: SC; Species: Mice; Pump: 2001; Duration: 4 days;
ALZET Comments: Controls received mp w/ vehicle; animal info (BALB/c)

Agents: Epinephrine Vehicle: Not Stated; Route: SC; Species: Rat; Pump: 2004; Duration: 14 days;
ALZET Comments: Animal info (adrenal medullectomy, adult, male, Sprague Dawley, 300-400 g); functionality of mp verified by plasma drug levels

Agents: Epinephrine Vehicle: Saline; Route: SC; Species: Mice; Pump: Not Stated; Duration: 5 days;
ALZET Comments: Half-life (p. G1227) "very short"; animal info (male, C57BL/6, 4-6 wks old); "Owing to the very short half-life of epinephrine, the hormone was infused instead of injected to maintain a low-grade elevated plasma level over a prolonged period which better mimics the effect of ethanol." pg. G1227

Agents: Epinephrine  
Vehicle: Saline; Ascorbic acid;  
Route: SC;  
Species: Rat;  
Pump: 2004;  
Duration: 3 weeks;

**ALZET Comments:** Replacement therapy (adrenal medullectomy); animal info (male, Sprague Dawley, 250-450g.)


**Agents:** Epinephrine  
**Vehicle:** Saline; Ascorbic acid;  
**Route:** Not Stated;  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** Not Stated;

**ALZET Comments:** Animal info (male, Sprague Dawley, 270-450 g.)


**Agents:** Epinephrine bitartrate  
**Vehicle:** Saline; Ascorbic acid;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** Not Stated;

**ALZET Comments:** Controls received no treatment; animal info (male, Sprague-Dawley 250-380 g); pain


**Agents:** Epinephrine  
**Vehicle:** Saline; Ascorbic acid;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 1007D; 2002;  
**Duration:** 7, 14 days;

**ALZET Comments:** Functionality of mp verified by plasma epinephrine levels; replacement therapy (adrenal medullectomy, adrenal gland denervation); dose-response (Fig 3)


**Agents:** Epinephrine  
**Vehicle:** Saline; Ascorbic acid;  
**Route:** SC;  
**Species:** Sheep (fetus);  
**Pump:** 2ML1;  
**Duration:** 4 days;

**ALZET Comments:** Teratology


**Agents:** ICI-118,551; epinephrine  
**Vehicle:** Saline; Ascorbic acid; ethanol;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 1007D; 2004;  
**Duration:** 3, 7, 14 days;

**ALZET Comments:** Controls received mp w/ vehicle; dose-response (p. 911); ICI-118, 55 dissolved in ethanol and saline and infused for 7 days via 1007D pumps; epinephrine dissolved in saline and ascorbic acid and delivered for 3, 7, or 14 days via 2004 pumps.


**Agents:** Epinephrine; Angiotensin II  
**Vehicle:** Not Stated;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** Not Stated;  
**Duration:** 6 days;

**ALZET Comments:** Controls received mp w/ saline; plasma levels reported; cardiovascular; pump rate 0.5 ul hr (p.15)


**Agents:** Epinephrine; Angiotensin II  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 1007D;  
**Duration:** 6 days;

**ALZET Comments:** Controls received mp w/ vehicle; functionality of mp verified by epinephrine plasma levels; cardiovascular; peptides; various methods of inducing hypertension explored


**Agents:** Epinephrine  
**Vehicle:** Saline;  
**Route:** SC;  
**Species:** Chinchilla;  
**Pump:** Not Stated;  
**Duration:** 1,2,3, or 4 weeks;

**ALZET Comments:** controls received mp w/ vehicle;


**Agents:** Epinephrine; Corticosterone  
**Vehicle:** Ethanol; NaCl;  
**Route:** SC;  
**Species:** Rat;  
**Pump:** 2ML1;  
**Duration:** 6 days;
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Bibliography

ALZET Comments: controls received mp w/vehicle; replacement therapy (adrenalectomy)

Agents: Epinephrine; Angiotensin II Vehicle: Ascorbic acid; Route: SC; IA (carotid); Species: Rat; Pump: 2ML4; 1007D; Duration: 6 days;
ALZET Comments: controls received saline infusion; functionality of mp verified by plasma levels; stability verified by analyzing residual solution

Agents: Epinephrine Vehicle: Water, distilled; Route: IP; Species: Rat; Pump: Not Stated; Duration: 6 days;
ALZET Comments: comparison of short-term iv infusion vs. mp

Agents: Epinephrine bitartrate Vehicle: Saline; Ascorbic acid; Route: SC; Species: Rat; Pump: 2002; Duration: 5-6 weeks;
ALZET Comments: long-term study, pumps replaced every 2 weeks; mp implanted in flank region

Agents: Nicotine free base; Epinephrine acid tartrate Vehicle: Saline; Ascorbic acid; Water, distilled; Route: SC; Species: Rat (pregnant); Pump: 2ML1; Duration: no duration posted;
ALZET Comments: controls received mp w/ saline; toxicology; teratology

Agents: Epinephrine bitartrate; Clentiazem Vehicle: Saline; Ethanol; DMSO; Route: SC; Species: Rat; Pump: 2ML2; Duration: 2 weeks;
ALZET Comments: no comment posted

Agents: Epinephrine Vehicle: Saline; Ascorbic acid; Route: SC; Species: Rat; Pump: Not Stated; Duration: 6 days;
ALZET Comments: no comment posted

Agents: Epinephrine Vehicle: Ascorbic acid; Route: Not Stated; Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: English with German summary

Agents: Epinephrine Vehicle: Ascorbic acid; Saline; Water; Route: IV (jugular); Species: Rat; Pump: 2001; Duration: 7 days;
ALZET Comments: dose-response; functionality of mp verified by plasma levels; no stress

Agents: Epinephrine Vehicle: Ascorbic acid; Saline; Route: SC; Species: Rat; Pump: 2002; Duration: 8 weeks;
ALZET Comments: long-term study, pump replaced every 14 days

Agents: Epinephrine Vehicle: Ascorbic acid; Saline; Route: SC; Species: Rat; Pump: 2001; Duration: 6 days;
ALZET Comments: controls received mp w/ vehicle; propranolol used to examine influence of beta adrenoceptors and phentolamine for alpha adrenoceptors


Agents: Epinephrine Vehicle: Ascorbic acid; Water; Route: IV (femoral); Species: rabbit; Pump: 2002; Duration: 10 days;
ALZET Comments: dose-response; pump embedded in thigh muscle; functionality of mp verified by plasma levels


Agents: Nicotine base; Epinephrine bitartrate Vehicle: Ascorbic acid; Saline; Route: SC; Species: Guinea pig; Rat; Pump: 2002; Duration: 2, 8 weeks;
ALZET Comments: dose-response; functionality of mp verified by plasma levels; long-term study; pump replaced every 2 weeks


Agents: Epinephrine bitartrate Vehicle: Ascorbic acid; Saline; Route: SC; Species: Rat; Pump: 2001; Duration: 6 days;
ALZET Comments: controls received mp w/ vehicle; hypertension


Agents: Angiotensin II; Epinephrine Vehicle: Water; Route: SC; Species: Rat; Pump: 2001; Duration: 6 and 12 days;
ALZET Comments: mp primed in distilled water 24 hours prior to implant; peptides


Agents: Epinephrine HCl, l- Vehicle: HCl; Saline; Route: SC; Species: Rat; Pump: 2001; Duration: 1 week;
ALZET Comments: states in error that mp will deliver up to 10 days; mp primed 3 hr prior to implant; bioavailability of EPI determined by plasma level increase


Agents: Epinephrine bitartrate Vehicle: Ascorbic acid; Saline; Route: CSF/CNS; Species: Rat; Pump: 2001; Duration: 5 days;
ALZET Comments: 2 day delay of mp Epi achieved by filling connecting tubing with vehicle; some tubing externalized to allow immediate cutoff of infusion; dose-response data; delayed delivery;


Agents: Angiotensin II; Epinephrine, l- Vehicle: Ascorbic acid; HCl; Saline; Route: SC; Species: Rat; Pump: 2001; 2002; Duration: 6 or 13 days, or 4 weeks;
ALZET Comments: comparison of agents effects; 2002 mp replaced after 2 weeks; saline used as vehicle w/ AngII, HCl & ascorbic acid w/Epi; controls received vehicle; mp primed in saline before use; peptides