



References on the Administration of Parathyroid Hormone Using ALZET® Osmotic Pumps

Q7419: T. Sato, *et al.* Disrupted tubular parathyroid hormone/parathyroid hormone receptor signaling and damaged tubular cell viability possibly trigger postsurgical kidney injury in patients with advanced hyperparathyroidism. *Clinical Kidney Journal* 2019;

Agents: Parathyroid Hormone, 1-34 **Vehicle:** Vehicle not stated; **Route:** SC; **Species:** Rat; **Pump:** 2002; **Duration:** Duration not stated;

ALZET Comments: "Dose (0.1 mg/kg/h); animal info (13-week-old male Sprague Dawley rats weighing 350 g); replacement therapy (parathyroidectomy); "

Q7537: J. Y. Li, *et al.* IL-17 Receptor Signaling in Osteoblasts/Osteocytes Mediates PTH-Induced Bone Loss and Enhances Osteocytic RANKL Production. *J Bone Miner Res* 2019;34(2):349-360

Agents: Parathyroid Hormone 1-34, human **Vehicle:** Not Stated; **Route:** Not Stated; **Species:** Mice; **Pump:** 1002; **Duration:** 2 weeks;

ALZET Comments: Dose (80 ug/kg/day); Controls received mp w/ vehicle; animal info (16-week-old female IL-17RADOXY mice); replacement therapy (hyperparathyroidism);

Q7327: K. Yukata, *et al.* Continuous infusion of PTH1-34 delayed fracture healing in mice. *Sci Rep* 2018;8(1):13175

Agents: Parathyroid hormone 1-34 **Vehicle:** Saline; **Route:** SC; **Species:** Mice; **Pump:** 2002; **Duration:** 2 weeks;

ALZET Comments: Dose (40µg/kg/day); Controls received mp w/ vehicle; animal info (8 week old, male, C57BL/6J); replacement therapy (parathyroid hormone);

Q6906: T. Nakatani, *et al.* The Deletion of Hdac4 in Mouse Osteoblasts Influences Both Catabolic and Anabolic Effects in Bone. *J Bone Miner Res* 2018;33(7):1362-1375

ALZET Comments: Parathyroid hormone (1-34); Saline; SC; Mice; 1002; 14 days; Dose (80 mg/kg/d); Controls received mp w/ vehicle; animal info (8 week-old female Hdac4ob-/- mice);

Q7011: Koduru SV, *et al.* The contribution of cross-talk between the cell-surface proteins CD36 and CD47-TSP-1 in osteoclast formation and function. *The Journal of Biological Chemistry* 2018;293(39):15055-15069

ALZET Comments: Parathyroid hormone (1-34), human; Acetic acid; mouse serum; SC; Mice; 5 days; Dose (0.67 pmol/g of body weight/h); 10 mM acetic acid containing 2% heat inactivated mouse serum used; Controls received mp w/ vehicle; functionality of mp verified by hypercalcemia;

Q6543: M. Wu, *et al.* Elevated PTH induces endothelial-to-chondrogenic transition in aortic endothelial cells. *Am J Physiol Renal Physiol* 2017;312(3):F436-F444

ALZET Comments: Parathyroid hormone (1-34), human; PBS; SC; Mice; 2ML4; 8 weeks; Dose (0.11 ug•100g⁻¹•h⁻¹); Controls received mp w/ vehicle; animal info (Tie2-Cre mice); cardiovascular.

Q6515: N. Tokonami, *et al.* Endothelin-1 mediates natriuresis but not polyuria during vitamin D-induced acute hypercalcaemia. *J Physiol* 2017;595(8):2535-2550

ALZET Comments: Parathyroid Hormone (1-34), Human; Saline; SC; Mice; 1002; Dose (11 µg/kg/day); Controls received mp w/ vehicle; animal info (8-week-old, parathyroid hormone-supplemented, C57BL6J male mice); Parathyroid Hormone (1-34), human aka hPTH(1-34); peptides;

Q6118: J. A. Siddiqui, *et al.* Catabolic Effects of Human PTH (1-34) on Bone: Requirement of Monocyte Chemoattractant Protein-1 in Murine Model of Hyperparathyroidism. *Sci Rep* 2017;7(1):15300

ALZET Comments: Parathyroid hormone, human; Saline; SC; Mice; 1002; 2 weeks; Dose (80 µg/kg/day); Controls received mp w/ vehicle; animal info (8-week-old female wild-type and MCP-1-/- mice);

Q5943: Y. Alippe, *et al.* Bone matrix components activate the NLRP3 inflammasome and promote osteoclast differentiation. *Sci Rep* 2017;7(1):6630



ALZET Comments: Parathyroid hormone; SC; Mice; 1002; 2 weeks; Controls received mp w/ vehicle; animal info (4 months) Therapeutic indication (Osteoclast differentiation); Dose (80 ug/kg/day);.

Q4861: S. Maudsley, *et al.* Informatic deconvolution of biased GPCR signaling mechanisms from in vivo pharmacological experimentation. *Methods* 2016;92(51-63

ALZET Comments: Parathyroid hormone (1-34), human; parathyroid hormone (7-34), bovine; PBS; SC; Mice; 1004; 28 days; Controls received mp w/ vehicle; animal info (male, C57Bl6J, 11 weeks old); Dose (all PTH 40 ug/kg/day);.

Q5946: O. Andrukhova, *et al.* Fgf23 and parathyroid hormone signaling interact in kidney and bone. *Mol Cell Endocrinol* 2016;436(224-39

ALZET Comments: Human parathyroid hormone; PBS, acetic acid; SC; Mice; 5 days; Controls received mp w/ vehicle; animal info (3 months old); Dose (40 ug/kg/day);.

Q4529: S. Maudsley, *et al.* Delineation of a Conserved Arrestin-Biased Signaling Repertoire In Vivo. *MOLECULAR PHARMACOLOGY* 2015;87(706-717

ALZET Comments: Parathyroid hormone (1-34), human; parathyroid hormone (7-34), bovine; PBS; SC; Mice; 1004; 28 days; Controls received mp w/ vehicle; animal info (male, WT or congenic arrestin3 null, 11 weeks old);.

Q5222: J. Y. Li, *et al.* IL-17A Is Increased in Humans with Primary Hyperparathyroidism and Mediates PTH-Induced Bone Loss in Mice. *Cell Metab* 2015;22(5):799-810

ALZET Comments: Parathyroid hormone, human (1-34); SC; mice; 1002; 2 weeks; Controls received mp w/ vehicle; animal info: 16-week-old female mice, C57BL/6 WT; functionality of mp verified by flow cytometry; dose-response (pg 808); replacement therapy (human parathyroid hormone); immunology; peptides; Dose: 80 mg/kg/day.

Q4487: V. Lam, *et al.* The Vitamin D, Ionised Calcium and Parathyroid Hormone Axis of Cerebral Capillary Function: Therapeutic Considerations for Vascular-Based Neurodegenerative Disorders. *PLoS One* 2015;10(U4547-U4566

ALZET Comments: Parathyroid hormone (1-34); Saline, isosmotic; cysteine; SC; Rat; 6 weeks; 12 weeks; Controls received mp w/ vehicle; animal info (female, Sprague Dawley, 7 weeks old); functionality of mp verified by residual volume and serum levels; 2% cysteine used; replacement therapy (parathyroid replacement); used wound clips; used 2ML size pumps; pumps primed; long-term study;.

Q5214: Y. Iwasaki, *et al.* Altered material properties are responsible for bone fragility in rats with chronic kidney injury. *Bone* 2015;81(247-54

ALZET Comments: Parathyroid hormone, rat; SC; Rat; 2002; 16 weeks; Controls received sham operation; animal info: 12-week-old male Sprague-Dawley; functionality of mp verified by urine samples; pumps replaced every 2 weeks; pumps replaced every 2 weeks; long-term study; Dose: 0.1 ug/kg/h.

Q4378: S. Choudhary, *et al.* Cyclooxygenase-2 Suppresses the Anabolic Response to PTH Infusion in Mice. *PLoS One* 2015;10(U2183-U2203

ALZET Comments: Parathyroid hormone (1-34), human; HCl; BSA, PBS; SC; Mice; 1004; 12 days; 21 days; Controls received mp w/ vehicle; animal info (male, Cox2KO or wt, 3 months old); 0.1% BSA used; pumps primed for 6 hours in 37C saline;.

Q4313: M. Babey, *et al.* Gender-Specific Differences in the Skeletal Response to Continuous PTH in Mice Lacking the IGF1 Receptor in Mature Osteoblasts. *JOURNAL OF BONE AND MINERAL RESEARCH* 2015;30(1064-1076

ALZET Comments: Parathyroid hormone (1-34); NaCl; HCl; serum, heat-inactivated mouse; SC; Mice; 1004; 4 weeks; Controls received mp w/ vehicle; animal info (FVN/B12 weeks old); functionality of mp verified by serum PTH levels; cardiovascular;.

Q3715: A. Shimomura, *et al.* Dietary L-Lysine Prevents Arterial Calcification in Adenine-Induced Uremic Rats. *Journal of the American Society of Nephrology* 2014;25(1954-1965

ALZET Comments: Parathyroid hormone (1-34); Rat; 50 days; animal info (6 wks old, male, Wistar); induction of nephrocalcinosis.



Q4069: B. Roche, *et al.* Parathyroid Hormone 1-84 Targets Bone Vascular Structure and Perfusion in Mice: Impacts of Its Administration Regimen and of Ovariectomy. *Journal of Bone and Mineral Research* 2014;29(1608-1618)

ALZET Comments: Parathyroid hormone (1-84); SC; Mice; 14 days; Controls received mp w/ vehicle; animal info (female, C57BL6, 4 months old, ovariectomized); comparison of injection vs mp; cardiovascular;.

Q3883: T. Fumoto, *et al.* Lanthanum carbonate stimulates bone formation in a rat model of renal insufficiency with low bone turnover. *JOURNAL OF BONE AND MINERAL METABOLISM* 2014;32(484-493)

ALZET Comments: Parathyroid hormone (1-34), rat; Rat; 2004; 8 weeks; Controls received sham surgery; animal info (male, Sprague Dawley, 8 weeks old); long-term study;.

Q4711: T. Chaichanasakul, *et al.* Diverse Osteoclastogenesis of Bone Marrow From Mandible Versus Long Bone 1116. *JOURNAL OF PERIODONTOLOGY* 2014;85(829-836)

ALZET Comments: Parathyroid hormone (1-34), human; vitamin D3, 1,25-dihydroxy; SC; Rat; 3 days; Controls received mp w/ vehicle; animal info (male, Sprague Dawley, 3 months old);.

Q3818: M. Bozic, *et al.* High phosphate diet increases arterial blood pressure via a parathyroid hormone mediated increase of renin. *Journal of Hypertension* 2014;32(1822-1832)

ALZET Comments: Parathyroid hormone (1-34), recombinant rat; SC; Rat; 2002; 4 weeks; Animal info (Sprague Dawley, 200-225g); functionality of mp verified by calcium serum levels; replacement therapy (parathyroidectomy); cardiovascular;.

Q2929: V. Saini, *et al.* Parathyroid Hormone (PTH)/PTH-related Peptide Type 1 Receptor (PPR) Signaling in Osteocytes Regulates Anabolic and Catabolic Skeletal Responses to PTH. *Journal of Biological Chemistry* 2013;288(28):20122-20134

ALZET Comments: Parathyroid hormone; SC; Mice; 1002; 2 weeks; Animal info (8-12 week old).

Q2709: I. Matsui, *et al.* Retention of fetuin-A in renal tubular lumen protects the kidney from nephrocalcinosis in rats. *American Journal of Physiology-Renal Physiology* 2013;304(6):F751-F760

ALZET Comments: Parathyroid hormone (1-34); Saline, acidified; serum, rat, heat-activated; Rat; 48 hours; Animal info (Wistar, male, 6 wks old);.

Q3100: D. S. Krause, *et al.* Differential regulation of myeloid leukemias by the bone marrow microenvironment. *Nature Medicine* 2013;19(11):1513-+

ALZET Comments: Parathyroid hormone, human (1-34); Saline; Mice (NSG); 4 weeks; 14 weeks; Controls received mp w/ vehicle; animal info (NSG; BALB/c); pumps replaced every 2 weeks; cancer (leukemia); immunology; peptides.

Q3088: Y. Iwasaki, *et al.* Accumulated uremic toxins attenuate bone mechanical properties in rats with chronic kidney disease. *Bone* 2013;57(2):477-483

ALZET Comments: Parathyroid hormone (1-34); SC; Rat; 2002; Animal info (male, Sprague Dawley, 13 weeks old, 350g); peptides.

Q2760: J. Guo, *et al.* Activation of a Non-cAMP/PKA Signaling Pathway Downstream of the PTH/PTHrP Receptor Is Essential for a Sustained Hypophosphatemic Response to PTH Infusion in Male Mice. *Endocrinology* 2013;154(5):1680-1689

ALZET Comments: Parathyroid hormone (1-34), human; NaCl; HCl; serum, mouse, heat-activated; SC; Mice; 1002; 8 days; Control animals received mp w/ vehicle; animal info (wt, DD, Npt 2a -/-, Npt2c -/-).

Q3068: V. David, *et al.* Calcium Regulates FGF-23 Expression in Bone. *Endocrinology* 2013;154(12):4469-4482

ALZET Comments: Parathyroid hormone (1-34); SC; Mice; 4 weeks; Controls received mp w/ vehicle; animal info (Gcm2-/-); functionality of mp verified by PTH serum levels;.

Q2008: Q. Yuan, *et al.* Deletion of PTH Rescues Skeletal Abnormalities and High Osteopontin Levels in Klotho(-/-) Mice. *PLoS Genetics* 2012;8(5):U694-U703



ALZET Comments: Parathyroid hormone (1-34); Saline, sterile; Mice; 1004; 3 weeks; Controls received mp w/ vehicle; animal info (KI -/-, PTH +/- 3 wks old); peptides.

Q2295: H. Qing, *et al.* Demonstration of osteocytic perilacunar/canalicular remodeling in mice during lactation. *Journal of Bone and Mineral Research* 2012;27(5):1018-1029

ALZET Comments: Parathyroid hormone, related peptide (1-36); SC; Mice; 2002; 12 days; Animal info (CD-1, 12 wks old); peptides.

Q1809: M. R. Custodio, *et al.* Parathyroid hormone and phosphorus overload in uremia: impact on cardiovascular system. *NEPHROLOGY DIALYSIS TRANSPLANTATION* 2012;27(4):1437-1445

ALZET Comments: Parathyroid hormone (1-34), rat; Cysteine; SC; Rat; 2ML4; 8 weeks; Controls received mp w/ vehicle; animal info (Wistar, male, 280-320 g); pumps replaced after 28 days; long-term study.

Q2287: D. K. Atchison, *et al.* Parathyroid hormone-related protein stimulates plasma renin activity via its anorexic effects on sodium chloride intake. *AMERICAN JOURNAL OF PHYSIOLOGY-ENDOCRINOLOGY AND METABOLISM* 2012;303(4):E457-E463

ALZET Comments: Parathyroid hormone related protein (1-34), rat; Cysteine HCl; saline; SC; Rat; 2001; 5 days; Controls received mp w/ vehicle; animal info (Sprague Dawley, male, 200-250 g); wound clips used.

Q1497: Q. Yuan, *et al.* PTH Ablation Ameliorates the Anomalies of Fgf23-Deficient Mice by Suppressing the Elevated Vitamin D and Calcium Levels. *Endocrinology* 2011;152(11):4053-4061

ALZET Comments: Parathyroid hormone (1-34); Saline, sterile; SC; Mice; 1004; 3 weeks; Controls received mp w/ vehicle; animal info (Fgf -/-, Pth -/-, wt); peptides.

Q1448: M. Otto-Duessel, *et al.* Interdependence of cardiac iron and calcium in a murine model of iron overload. *Translational Research* 2011;157(2):92-99

ALZET Comments: Parathyroid hormone; SC; Mice; 6 weeks; Controls received mp w/ no treatment; animal info (8 wks old, HJVKO); no stress "Animals in all groups seemed to tolerate treatments well." pg 94; stress/adverse effects "One animal with a PTH pump implant died unexpectedly 2 weeks postsurgery" pg 94.

Q1225: S. Lympieri, *et al.* Inhibition of osteoclast function reduces hematopoietic stem cell numbers in vivo. *Blood* 2011;117(5):1540-1549

ALZET Comments: Parathyroid hormone (1-34); PBS, sterile; acetic acid; SC; Mice; 1004; 28 days; Controls received mp w/ vehicle; animal info (C57BL/6, female, 8-12 wks old); functionality of mp verified by PTH 1-34 levels in the blood serum; post op. care (Baytril and Rimadyl).

Q1216: I. Lopez, *et al.* Direct and indirect effects of parathyroid hormone on circulating levels of fibroblast growth factor 23 in vivo. *Kidney International* 2011;80(5):475-482

ALZET Comments: Parathyroid hormone; Saline, isosmotic; SC; Rat; 2ML4; 28 days; Controls received mp w/ vehicle; animal info (male, Wistar, 200 g); replacement therapy (parathyroidectomy).

Q0709: N. Kurio, *et al.* Anti-tumor effect in human breast cancer by TAE226, a dual inhibitor for FAX and IGF-IR in vitro and in vivo. *Experimental Cell Research* 2011;317(8):1134-1146

ALZET Comments: Parathyroid hormone-related peptide (1-34); Saline, physiological; cysteine, L-; SC; Mice (nude); 1007D; Controls received mp w/ vehicle; animal info (5 wks old, male, BALB/c); cancer; peptides.

Q1737: S. Kudo, *et al.* Cartilaginous repair of full-thickness articular cartilage defects is induced by the intermittent activation of PTH/PTHrP signaling. *OSTEOARTHRITIS AND CARTILAGE* 2011;19(7):886-894

ALZET Comments: Parathyroid hormone (1-84), recomb. human; Saline, sterile; Knee (articular cavity); Rabbit; 2002; 14 days; Controls received mp w/ vehicle; animal info (male, white, adolescent, Japanese, 3-3.4 kg); pulsatile delivery; "The program consisted of alternating segments of 5 ul PTH (50 ug/ml) solution and 5 ul sterile saline interrupted by 1 ul air bubbles." pg 888.



- Q1708:** Y. Iwasaki, *et al.* Changes in chemical composition of cortical bone associated with bone fragility in rat model with chronic kidney disease. *Bone* 2011;48(6):1260-1267
ALZET Comments: Parathyroid hormone (1-34); SC; Rat; 2002; 6 weeks; Animal info (Sprague Dawley, male, 13 wks old, 350 g); pumps replaced every 2 weeks.
- Q1473:** A. J. Brown, *et al.* The Vitamin D Analog 1-alpha,25-Dihydroxy-2-beta-(3-Hydroxypropyloxy) Vitamin D₃ (Eldecalcitol) is a Potent Regulator of Calcium and Phosphate Metabolism. *Calcified Tissue International* 2011;89(5):372-378
ALZET Comments: Parathyroid hormone (1-34); SC; Rat; Animal info (female, Sprague-Dawley, 225-250 g); replacement therapy (parathyroidectomy); functionality of mp verified by plasma PTH levels.
- Q1618:** R. T. Turner, *et al.* The Role of Mast Cells in Parathyroid Bone Disease. *Journal of Bone and Mineral Research* 2010;25(7):1637-1649
ALZET Comments: Parathyroid hormone, human, (1-34); thymidine, methyl-3H; Ethanol; SC; Rat; mice; 12 days; 1 week; Controls received mp w/ vehicle; animal info (Sprague Dawley, 6 wks to 6 mo; DBA, adult); 2% ethanol used.
- Q0349:** H. Tawfeek, *et al.* Disruption of PTH Receptor 1 in T Cells Protects against PTH-Induced Bone Loss. *PLoS One* 2010;5(8):U56-U69
ALZET Comments: Parathyroid hormone (1-34), human; Mice; 1002; 2 weeks; Controls received mp w/ vehicle; animal info (male, female, 16 wks old, C57BL/6 WT, TNF -/-).
- Q0079:** B. Morte, *et al.* Thyroid Hormone Regulation of Gene Expression in the Developing Rat Fetal Cerebral Cortex: Prominent Role of the Ca²⁺/Calmodulin-Dependent Protein Kinase IV Pathway. *Endocrinology* 2010;151(2):810-820
ALZET Comments: Parathyroid hormone (1-84); calcitonin, rat; Acetate buffer; SC; Rat; 2001; Controls received mp w/ vehicle; animal info (female, Wistar, adult, 250-300 g); replacement therapy (parathyroidectomy).
- Q1558:** J. Michaud, *et al.* Reduced Hepatic Synthesis of Calcidiol in Uremia. *Journal of the American Society of Nephrology* 2010;21(9):1488-1497
ALZET Comments: Parathyroid hormone (1-34); Cysteine hydrochloride; IV (jugular); Rat; 1003D; 48 hours; animal info (Sprague Dawley, male, 176-255 g, parathyroidectomy); replacement therapy (parathyroidectomy).
- Q0324:** V. Lavi-Moshayoff, *et al.* PTH increases FGF23 gene expression and mediates the high-FGF23 levels of experimental kidney failure: a bone parathyroid feedback loop. *American Journal of Physiology-Renal Physiology* 2010;299(4):F882-F889
ALZET Comments: Parathyroid hormone (1-34), rat; Cysteine, L-; SC; Mice; 2002; 3 days; Controls received mp w/ vehicle; animal info (C57BL/J6, male, 5-6 wks old).
- Q1106:** J. Guo, *et al.* Suppression of Wnt Signaling by Dkk1 Attenuates PTH-Mediated Stromal Cell Response and New Bone Formation. *Cell Metabolism* 2010;11(2):161-171
ALZET Comments: Parathyroid hormone (1-34), human; NaCl; serum, mouse, heat-activated; SC; Mice (transgenic); 2 weeks; Controls received mp w/ vehicle; animal info (C57BL/6, Dkk1 Tg, male, 12 wks old).
- Q0877:** M. Etoh, *et al.* Repetition of continuous PTH treatments followed by periodic withdrawals exerts anabolic effects on rat bone. *JOURNAL OF BONE AND MINERAL METABOLISM* 2010;28(6):641-649
ALZET Comments: Parathyroid hormone; SC; Rat; 1007D; 1003D; 4 weeks; 7 days; 24 hours; Controls received mp w/ vehicle; animal info (9 wks old, Sprague-Dawley, female); pumps replaced every 1 week; comparison of once a week and 3-times a week injections vs sc mp; "Continuous PTH treatment as well as intermittent PTH treatment stimulates bone formation, but the former treatment enhances osteoclastic bone resorption that exceeds the stimulated bone formation." pg 647.
- Q0003:** P. Berbel, *et al.* Role of Late Maternal Thyroid Hormones in Cerebral Cortex Development: An Experimental Model for Human Prematurity. *Cerebral Cortex* 2010;20(6):1462-1475
ALZET Comments: Parathyroid hormone, rat (1-84); calcitonin, rat; thyroxine; Acetate buffer; SC; Rat (pregnant); 2001; 4-8 days; Teratology; peptides; animal info (Female, Wistar, 250-300 g); replacement therapy (parathyroidectomy).



Q0002: D. G. Batista, *et al.* The Bone Histology Spectrum in Experimental Renal Failure: Adverse Effects of Phosphate and Parathyroid Hormone Disturbances. *Calcified Tissue International* 2010;87(1):60-67

ALZET Comments: Parathyroid hormone, recomb. rat (1-34); Cysteine; SC; Rat; 2ML4; 56 days; Controls received mp w/ vehicle; peptides; animal info (male, Wistar, 280-330 g); functionality of mp verified by hormone serum levels; replacement therapy (parathyroidectomy, nephrectomy (5/6)); pumps replaced after 28 days; long-term study.

Q1549: L. Ardeshipour, *et al.* Increased PTHrP and Decreased Estrogens Alter Bone Turnover but Do Not Reproduce the Full Effects of Lactation on the Skeleton. *Endocrinology* 2010;151(12):5591-5601

ALZET Comments: Parathyroid hormone-related protein (1-36); Water, sterile; cysteine, L-, sterile; SC; Mice; 2002; 12 days; Controls received mp w/ vehicle; animal info (female, 10-13 wks old, CD1, virgin, ovariectomy).

P9945: L. Kantham, *et al.* The calcium-sensing receptor (CaSR) defends against hypercalcemia independently of its regulation of parathyroid hormone secretion. *AMERICAN JOURNAL OF PHYSIOLOGY-ENDOCRINOLOGY AND METABOLISM* 2009;297(4):E915-E923

ALZET Comments: Parathyroid hormone (1-34); human; PBS; acetic acid; cysteine; SC; Mice; 1002; 14 days; Post op.care (analgesia).

P9662: F. G. Gracioli, *et al.* Phosphorus overload and PTH induce aortic expression of Runx2 in experimental uraemia. *NEPHROLOGY DIALYSIS TRANSPLANTATION* 2009;24(5):1416-1421

ALZET Comments: Parathyroid hormone (1-34); Cysteine; SC; Rat; 2ML4; 56 days; Controls received mp w/vehicle; replacement therapy (parathyroidectomy); pumps replaced after 28 days; animal info (male, Wistar, 300-330g); long-term study.

P9492: C. Galli, *et al.* Commitment to the Osteoblast Lineage Is Not Required for RANKL Gene Expression. *Journal of Biological Chemistry* 2009;284(19):12654-12662

ALZET Comments: Parathyroid hormone (1-84), human; NaCl; acetic acid; BSA; SC; Mice; 1003D; 24 hours; Controls received mp w/ vehicle; animal info (female, Swiss Webster).

P8779: B. Yuan, *et al.* Aberrant Phex function in osteoblasts and osteocytes alone underlies murine X-linked hypophosphatemia. *Journal of Clinical Investigation* 2008;118(2):722-734

ALZET Comments: Parathyroid hormone; Mice; 1003D; 24 hours; Animal info (C57BL/6J, wt, Hyp, Cre-Phex-d-flox/y, OC-Cre-Phex-d-flox/y).

P9693: R. Samadfam, *et al.* Exogenous PTH and endogenous 1,25-dihydroxyvitamin D are complementary in inducing an anabolic effect on bone. *Journal of Bone and Mineral Research* 2008;23(8):1257-1266

ALZET Comments: Parathyroid hormone (1-34), recomb. human; SC; Mice; 1, 2, 4, 6, 20 days; Pumps replaced after 10 days; peptides; animal info (3 months old, male C57BL/6).

P9160: M. B. Lowry, *et al.* Osteitis Fibrosa Is Mediated by Platelet-Derived Growth Factor-A Via a Phosphoinositide 3-Kinase-Dependent Signaling Pathway in a Rat Model for Chronic Hyperparathyroidism. *Endocrinology* 2008;149(11):5735-5746

ALZET Comments: Parathyroid hormone (1-34), human; SC; Rat; 1, 3, 5, 7, 14, 28 days; Controls received mp w/ vehicle; peptides; animal info (mature, female, Sprague Dawley, 3 or 6 months old).

Q5672: X. Li, *et al.* In Vivo Parathyroid Hormone Treatments and RNA Isolation and Analysis. *Methods in Molecular Biology* 2008;455(79-87)

ALZET Comments: Parathyroid hormone (1-34), synthetic human; Saline, 1% heat inactivated sera; SC; Rat; animal info (Sprague-Dawley); Dose (4 mg/100 g/day);

P9111: Y. Gao, *et al.* T cells potentiate PTH-induced cortical bone loss through CD40L signaling. *Cell Metabolism* 2008;8(2):132-145



ALZET Comments: Parathyroid hormone (1-34), human; Mice (nude); 1002; 2 weeks; Controls received mp w/ vehicle; peptides; animal info (female, C57BL/6, 10 wks old, wt, nu/nu).

P9321: E. J. Chang, *et al.* Brain-type creatine kinase has a crucial role in osteoclast-mediated bone resorption. *Nature Medicine* 2008;14(9):966-972

ALZET Comments: Parathyroid hormone (1-34) human; PBS; SC; Mice; 5 days; Controls received mp w/ vehicle; peptides; animal info (Ckb -/-, wt, 8 wks old).

P7986: W. Wang, *et al.* Vacuolar H⁺-ATPase expression is increased in acid-secreting intercalated cells in kidneys of rats with hypercalcaemia-induced alkalosis. *ACTA PHYSIOLOGICA* 2007;189(4):359-368

ALZET Comments: Parathyroid hormone, human; SC; Rat; 1003D; 48 hours; Controls received mp w/ vehicle; animal info (male, Munich-Wistar, 230-260 grams).

P8650: M. Usatii, *et al.* Parathyroid hormone fragments inhibit active hormone and hypocalcemia-induced 1,25(OH)₂D synthesis. *Kidney International* 2007;72(11):1330-1335

ALZET Comments: Parathyroid hormone, human 1-34; parathyroid hormone, human 1-84; parathyroid hormone, rat 1-34; parathyroid hormone, rat 1-84; parathyroid hormone, rat 7-84; parathyroid hormone, rat 39-84; Saline; cysteine HCl, L-; IV (jugular); Rat; 1003D; 48 hours; Controls received mp w/ vehicle; replacement therapy (parathyroidectomy); peptides; animal info (male, Sprague-Dawley, 125-150g).

P8740: X. Li, *et al.* Parathyroid hormone stimulates osteoblastic expression of MCP-1 to recruit and increase the fusion of pre/osteoclasts. *Journal of Biological Chemistry* 2007;282(45):33098-33106

ALZET Comments: Parathyroid hormone, human 1-34; Saline, physiological; SC; Rat; 2001; 3, 6, 14 days; 6 hours; Controls received mp w/ vehicle; comparison SC injections vs. mp; peptides; animal info (female, Sprague-Dawley, 3 months old, 250 g).

P9883: X. Li, *et al.* Determination of dual effects of parathyroid hormone on skeletal gene expression in vivo by microarray and network analysis. *Journal of Biological Chemistry* 2007;282(45):33086-33097

ALZET Comments: Parathyroid hormone (1-34); parathyroid hormone (3-34); parathyroid hormone (1-31); Saline; SC; Rat; 2001; 6, 14 days; Functionality of mp verified by hPTH (1-34) levels; peptides; animal info (female, Sprague Dawley, 3 months old, 250 g.).

P8578: J. Fuentes, *et al.* A PTH/PTHrP receptor antagonist blocks the hypercalcemic response to estradiol-17 beta. *Am J Physiol Regul Integr Comp Physiol* 2007;293(R956-R960)

ALZET Comments: Parathyroid hormone-related protein (7-34); IP; Fish (sea bream); Controls received mp w/ vehicle; peptides; animal info (Sparus auratus, juvenile).

P8974: H. Mizuta, *et al.* Expression of the PTH/PTHrP receptor in chondrogenic cells during the repair of full-thickness defects of articular cartilage. *OSTEOARTHRITIS AND CARTILAGE* 2006;14(9):944-952

ALZET Comments: Parathyroid hormone (1-84), recomb. human; Saline, sterile; Knee (articular cavity); Rabbit; 2002; 2, 4 weeks; Controls received mp w/ vehicle; pumps replaced after 2 weeks; peptides; animal info (male, Japanese White, 3-3.4 kg., adolescent).

P8239: G. S. Bounoutas, *et al.* Impact of impaired receptor internalization on calcium homeostasis in knock-in mice expressing a phosphorylation-deficient parathyroid hormone (PTH)/PTH-related peptide receptor. *Endocrinology* 2006;147(10):4674-4679

ALZET Comments: Parathyroid hormone, rat 1-34; Acetic acid; serum, mouse, heat-inactivated; SC; Mice; 1003D; 3 days; Controls received mp w/ vehicle; dose-response (table 3); peptides; animal info (male, 12 weeks old, C57BL/J6).

P9008: Y. Asaba, *et al.* Urinary gamma-glutamyltransferase (GGT) as a potential marker of bone resorption. *Bone* 2006;39(6):1276-1282



ALZET Comments: Parathyroid hormone (1-34), human; Cysteine, L-; SC; Mice; 4 days; Controls received mp w/ vehicle; peptides; animal info (female, BALB/cA, 8 wks old).