

Parathyroid hormone is critical for the acute adaption to oral or intravenous phosphate loading

Linto Thomas, Carla Bettoni, Thomas Knöpfel, Nati Hernando, Jürg Biber, and Carsten A. Wagner

Institute of Physiology, University of Zurich, Switzerland and National Centre for Competence in Research NCCR Kidney.CH, Switzerland

SUPPLEMENTARY DATA

SUPPLEMENTARY FIGURES**Supplementary Figure 1. Effect of different doses of intravenous Phosphate loading on several parameters in intact rats**

Rats were loaded with 50, 150, or 500 μ moles Pi intravenously (**A**) plasma Pi, (**B**) urinary Pi/creatinine, (**C**) plasma Ca^{2+} , (**D**) urinary Ca^{2+} /creatinine, (**E**) intact PTH. Three profiles are shown: 50 μ moles Pi (black), 150 μ moles Pi (blue), 500 μ moles Pi (red). Data are presented as the mean \pm SEM. * P < 0.05 or ** P < 0.01 or *** P < 0.001 vs. *time 0*. Anova test, n = 5-9/group and time point.

Supplementary Figure 2. Effect of different concentrations of intravenous and intragastric administration of NaCl on several parameters in intact rats

Rats were loaded with 150 or 500 μ moles NaCl intravenously or orally. (**A**) plasma Pi, (**B**) urinary Pi, (**C**) plasma Ca^{2+} , (**D**) urinary Ca^{2+} . Four profiles are shown: intravenous 150 μ moles NaCl (black), intravenous 500 μ moles NaCl (red), intragastric 150 μ moles NaCl (green), intragastric 500 μ moles NaCl (blue). Data are presented as the mean \pm SEM. * P < 0.05 vs. *time 0*. Anova test, n = 5-9/group and time point.

Supplementary Figure 3. Effect of intravenous and intragastric administration of Pi on fractional Pi excretion in intact and parathyroidectomized rats

Rats were loaded with 500 μ moles Pi or saline intragastrically or intravenously. (**A**) FE (%) for Pi in intact rats, (**B**) FE (%) for Pi in parathyroidectomized rats. Four profiles are shown: saline intravenous infusion (black), Pi intravenous infusion (red), saline intragastric gavage (green) and Pi intragastric gavage (blue). Data are presented as the mean \pm SEM. * P < 0.05 vs. *time 0*, Anova test, n = 4-9/group and time point.

Supplementary Figure 4. Effect of intravenous and intragastric administration of phosphate on body phosphate distribution in intact rats

Rats were loaded with 500 μ moles Pi or saline intravenously or orally. (**A**) Concentration of Pi in femur, (**B**) concentration of Pi in skeletal muscle, (**C**) concentration of Pi in liver. Data are presented as the mean \pm SEM. Anova test, n = 5-9/group and time point.

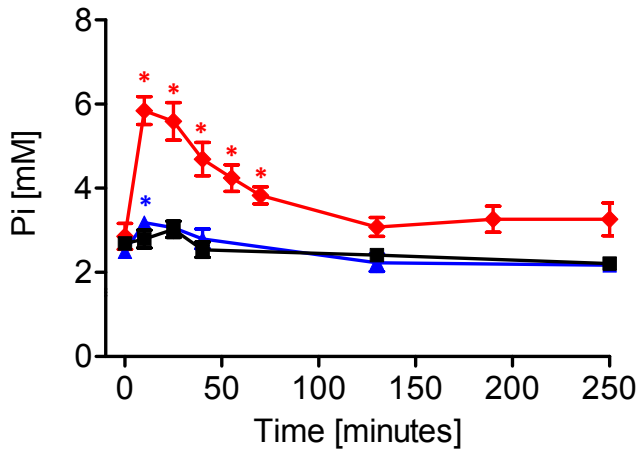
Supplementary Figure 5. Effect of intravenous and intragastric administration of phosphate on body phosphate distribution in parathyroidectomized rats

Parathyroidectomized rats were loaded with 500 μ moles Pi or saline intravenously or orally. **(A)** Concentration of Pi in femur, **(B)** concentration of Pi in skeletal muscle, **(C)** concentration of Pi in liver. Data are presented as the mean \pm SEM, Anova test, n = 4-6/group and time point.

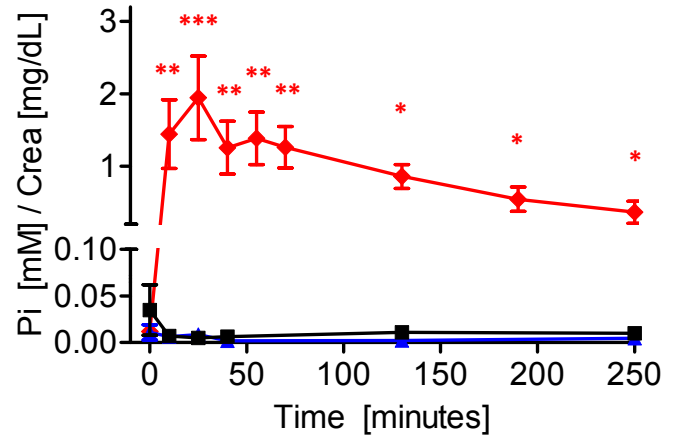
Supplementary Figure 1

■ 50 mM Pi infusion
▲ 150 mM Pi infusion
◆ 500 mM Pi infusion
Data 1

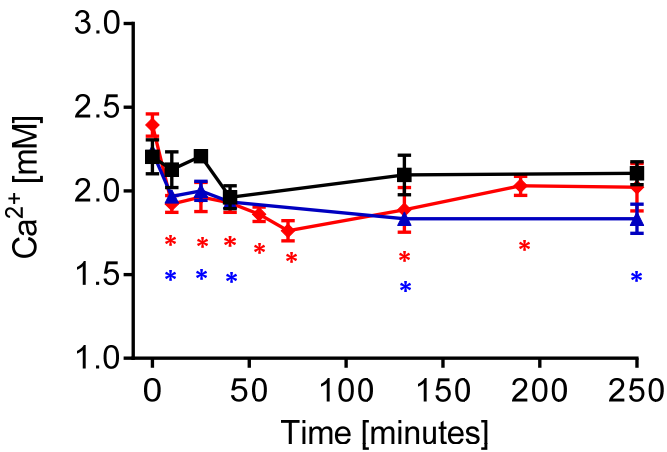
A : Plasma Pi



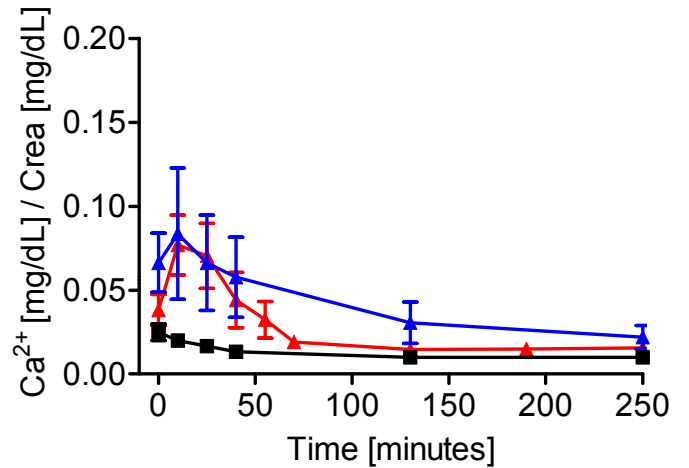
B : Urinary Pi



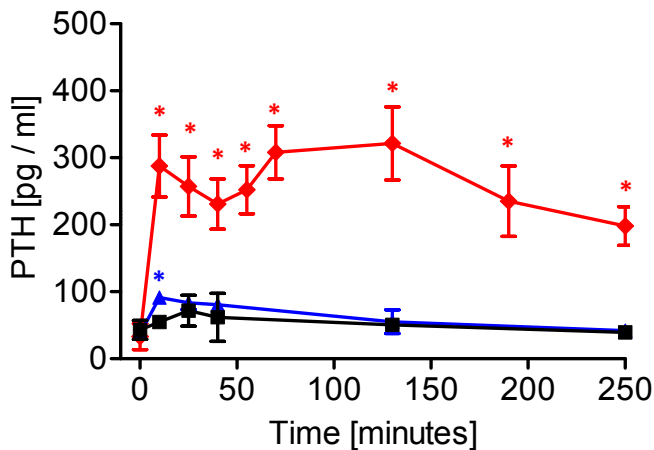
C : Plasma total Ca²⁺



D : Urinary Ca²⁺

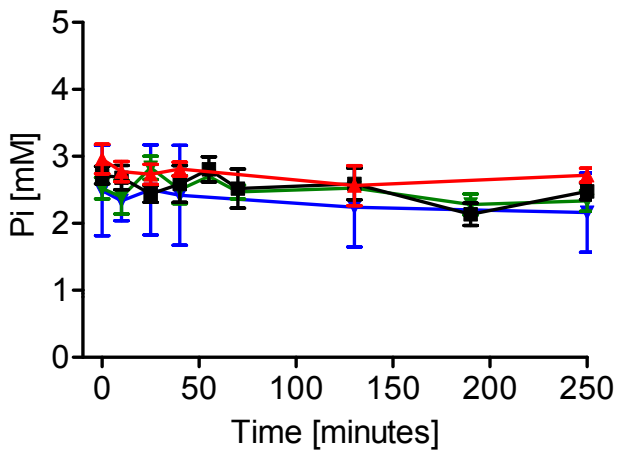


E : PTH

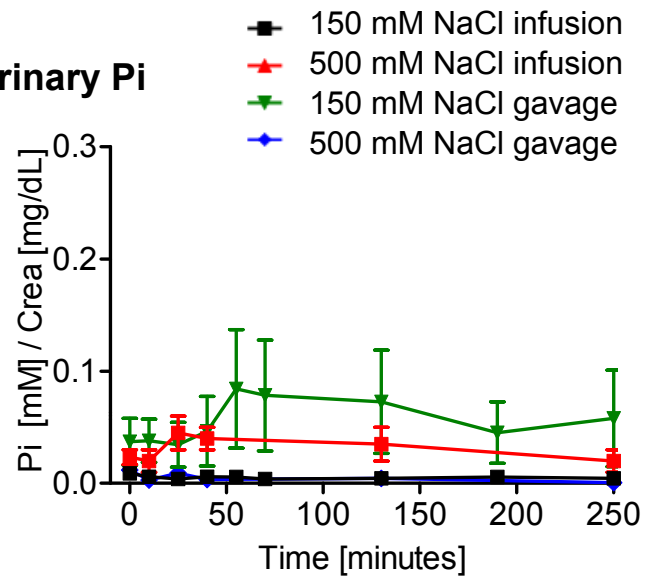


Supplementary Figure 2

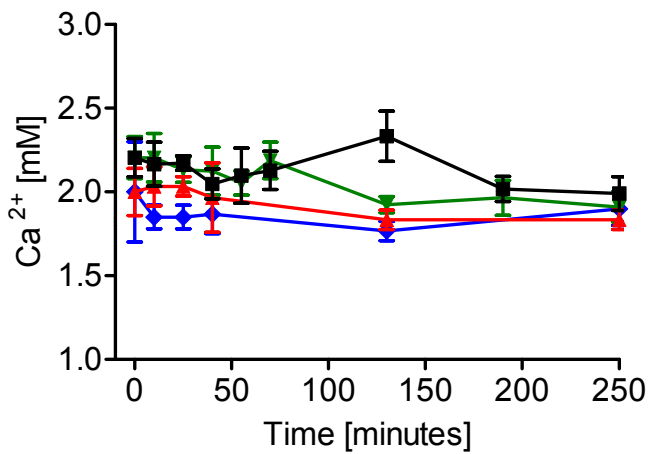
A : Plasma Pi



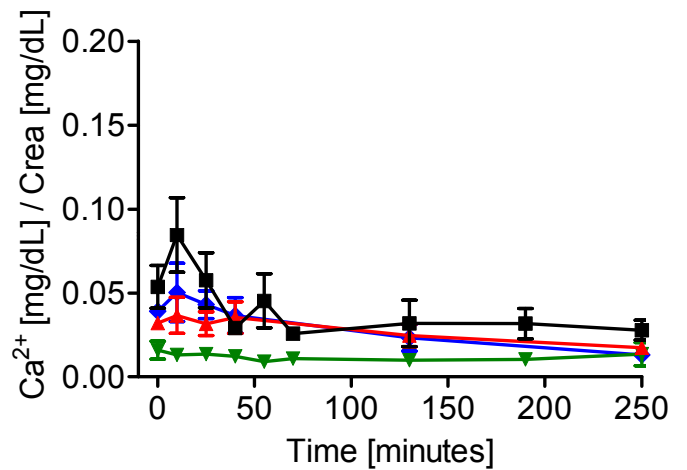
B : Urinary Pi



C : Plasma total Ca²⁺



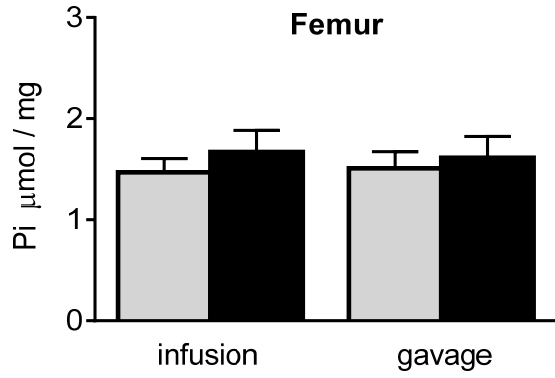
D : Urinary Ca²⁺



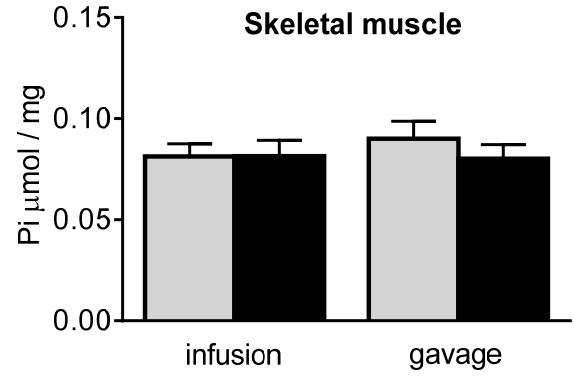
Supplementary Figure 3

Saline
Pi

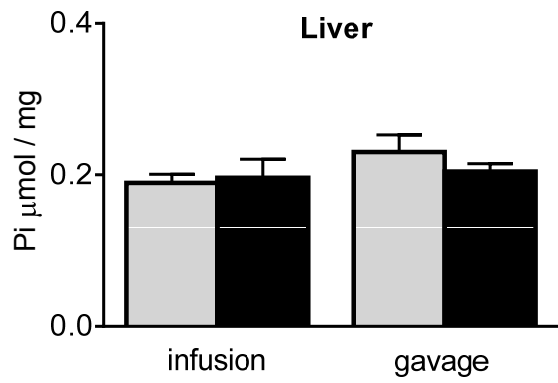
A



B



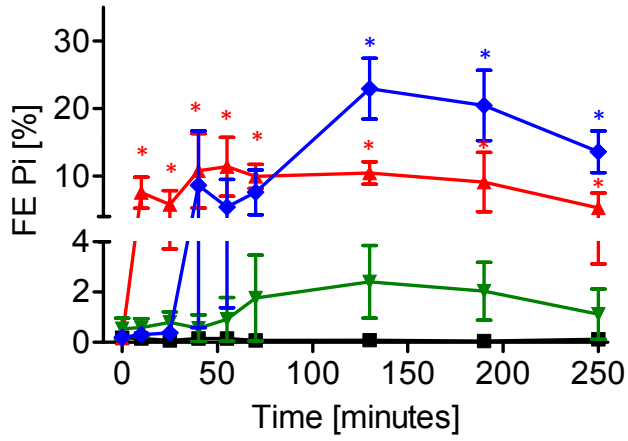
C



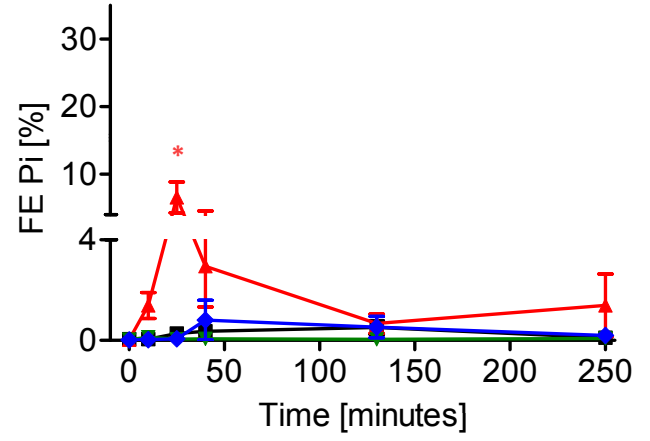
Supplementary Figure 4

- Saline infusion
- ▲ Pi infusion
- ▼ Saline gavage
- ◆ Pi gavage

A : Intact rats

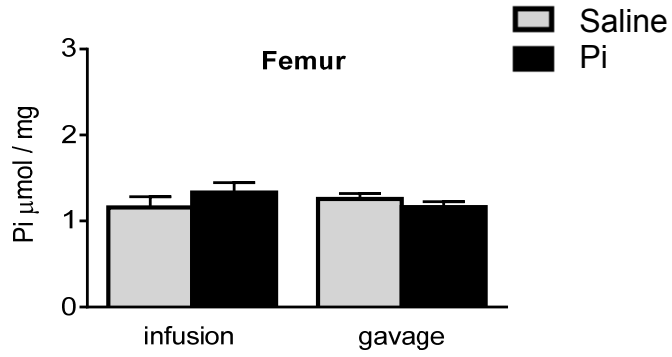


B : PTX rats

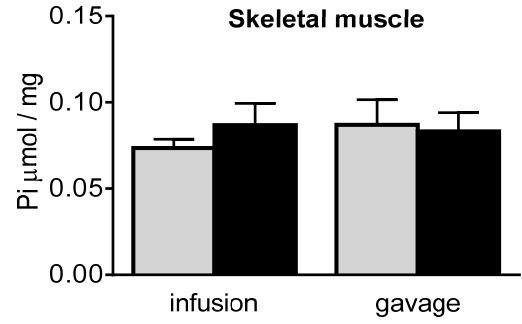


Supplementary Figure 5

A



B



C

