README – Exercise & Training Effects on Heme and Hemopexin

Study Overview

This dataset reports serum heme and hemopexin levels in wild-type (WT) and hemopexin-deficient ($Hpx^{-/-}$) mice subjected to **acute exercise (one 90-minute treadmill running session)** and/or **endurance training (six weeks of treadmill running)**.
Data include measurements of circulating heme (μM) and hemopexin (ng/mL) at multiple time points before and after exercise, as well as during chronic training.

Experimental Design

Acute Exercise Protocol

- **Animals**: WT and $Hpx^{-/-}$ mice.
- **Protocol**: 90 min treadmill running at moderate intensity.
- **Sampling**: blood collected at:
    - Baseline (pre-exercise),
    - 0h (immediately post-exercise),
    - 3h, 6h, 16h, and 24h after exercise.
- **Outcomes**: serum heme and serum hemopexin levels.

Endurance Training Protocol

- **Animals**: WT and $Hpx^{-/-}$ mice.
- **Protocol**: treadmill running for 6 weeks, 5 days/week.
- **Sampling**: blood collected pre-training (Pre-TR) and 72 h post-training (Post-TR).
- **Outcomes**: serum heme and serum hemopexin levels.

File Descriptions

- **Hemopexin_serum_ELISA.xlsx**
  Raw ELISA values for serum hemopexin across timepoints and conditions.
- **TR6_PL.xlsx**

Gene expression data from muscle samples, analyzed by DataAssist v3.01. Contains Ct values, ΔCt, ΔΔCt, fold change, and adjusted p-values.

- **Ex_TR.jpg**
  Summary figure showing exercise and training effects on circulating heme and hemopexin in WT and $Hpx^{-/-}$ mice.

Notes

- Heme measured spectrophotometrically (μM).
- Hemopexin measured via ELISA (ng/mL).
- Gene expression analyzed by qPCR arrays and DataAssist software.
- Groups include **WT** and **$Hpx^{-/-}$**, with comparisons across acute exercise and training interventions.