README – Metabolomics of Tibialis Anterior (HO-1/HO-2 KO)

Study Overview

This dataset contains metabolomics measurements from tibialis anterior (TA) muscles of mice with double knockout of HO-1 and HO-2 (HO1/2-/-) compared to heterozygous controls (HO1/2+/-). The study was designed to assess metabolic alterations in skeletal muscle associated with loss of heme oxygenase activity, and whether CO treatment modulates these profiles.

Metabolites were measured using high-resolution mass spectrometry, and results are reported as normalized peak intensities.

Experimental Design

- **Genotypes**:
    - **HO1/2+/- oil**: heterozygous animals (controls).
    - **HO1/2-/- tam**: double knockout animals (tamoxifen-induced).
- **Interventions**:
    - **Oil**: vehicle treatment.
    - **Tam**: tamoxifen induction of knockout.
    - **+ CO**: carbon monoxide treatment in HO1/2-/- mice.
- **Groups**:
    - HO1/2+/- Oil
    - HO1/2-/- Tam
    - HO1/2-/- + CO
- **Endpoints**: Relative abundance of metabolites across pathways including amino acid metabolism, nucleotide metabolism, glycolysis, TCA cycle, lipid metabolism, and redox-related intermediates.