

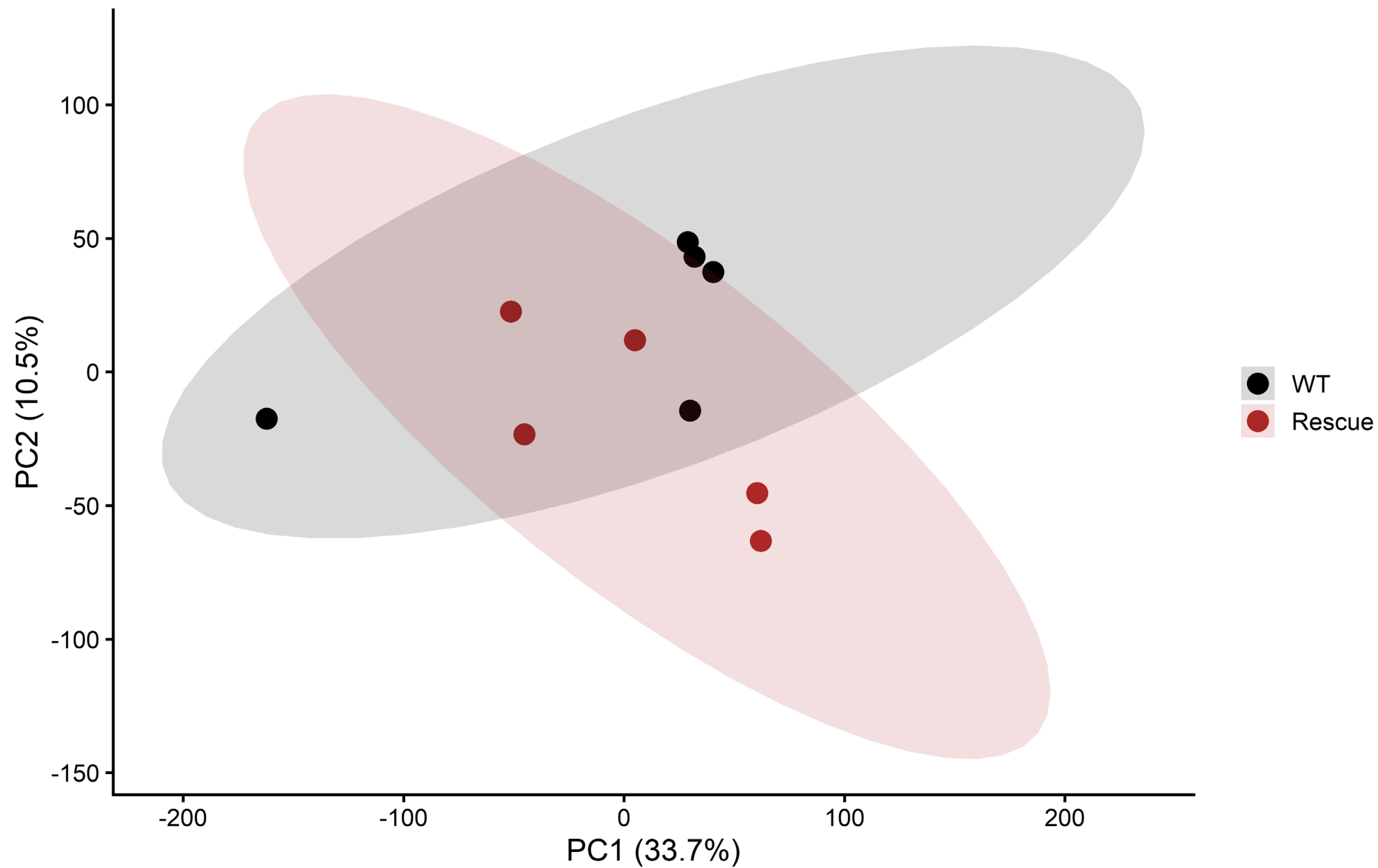
Supplementary Data S4. Integrated multi-omics comparison between "Rescue" and WT HCT116 cells. PCA, heatmaps of the top 50 most variable features, and volcano plot-based differential expression analyses are shown for RNA-seq, proteomics, metabolomics, and lipidomics datasets comparing "Rescue" vs. WT cells. PCA plots illustrate sample clustering based on the first two principal components. Heatmaps display relative expression levels (row-scaled) of the top 50 most variable genes, proteins, metabolites, or lipids across samples. Volcano plots show differential expression between "Rescue" and WT conditions, with $\log_2$ fold change plotted against $-\log_{10}$ adjusted p-values (FDR for transcriptomics and proteomics; p-value for metabolomics and lipidomics). Thresholds applied for significance are indicated on each plot (fold change ≥ 1.2 or ≥ 1.5 ; FDR or p-value ≤ 0.05). Points are colored according to significance (upregulated, downregulated, or not significant).

Rescue vs WT

RNA Seq

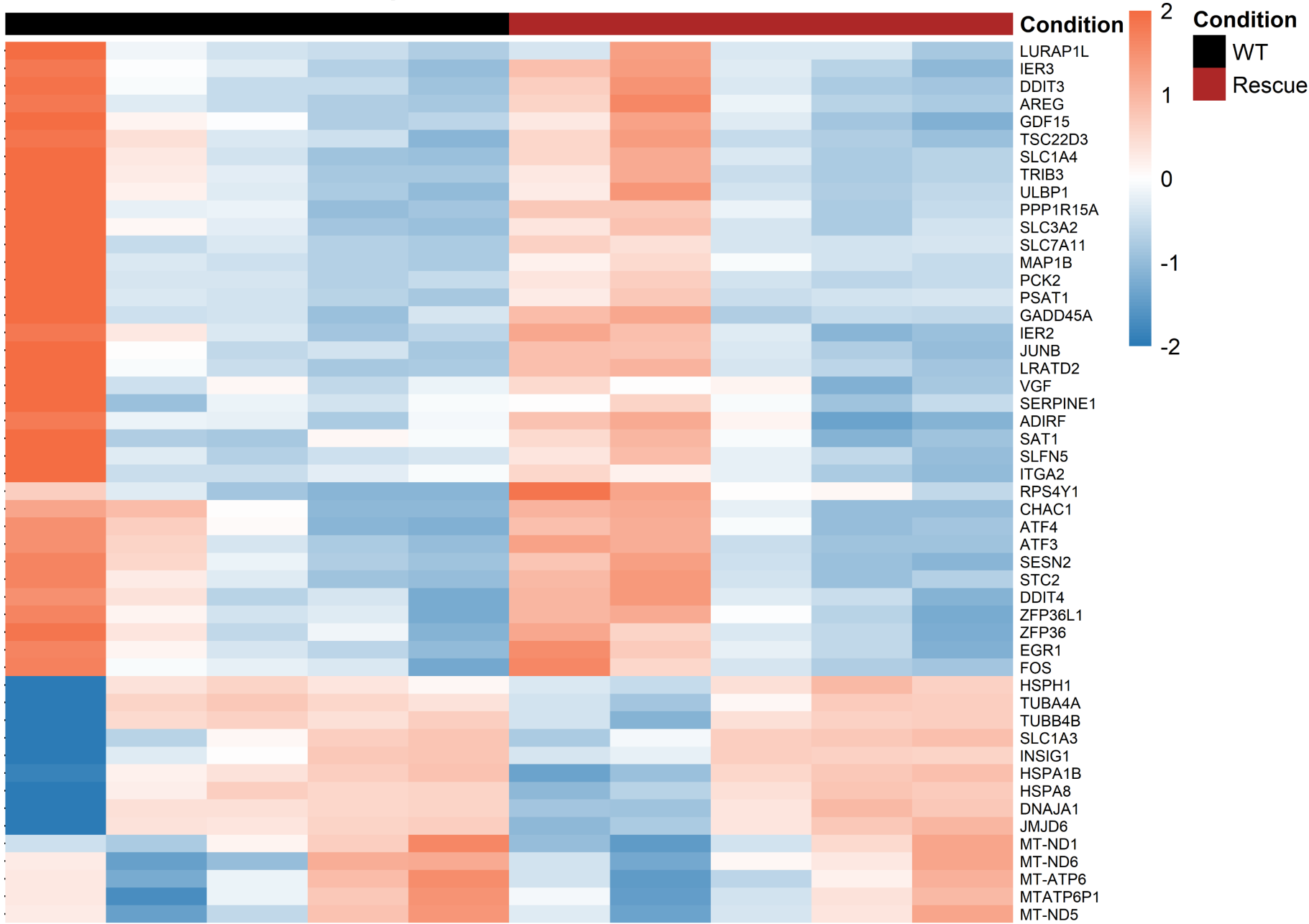
Rescue vs WT

PCA – RNA-seq



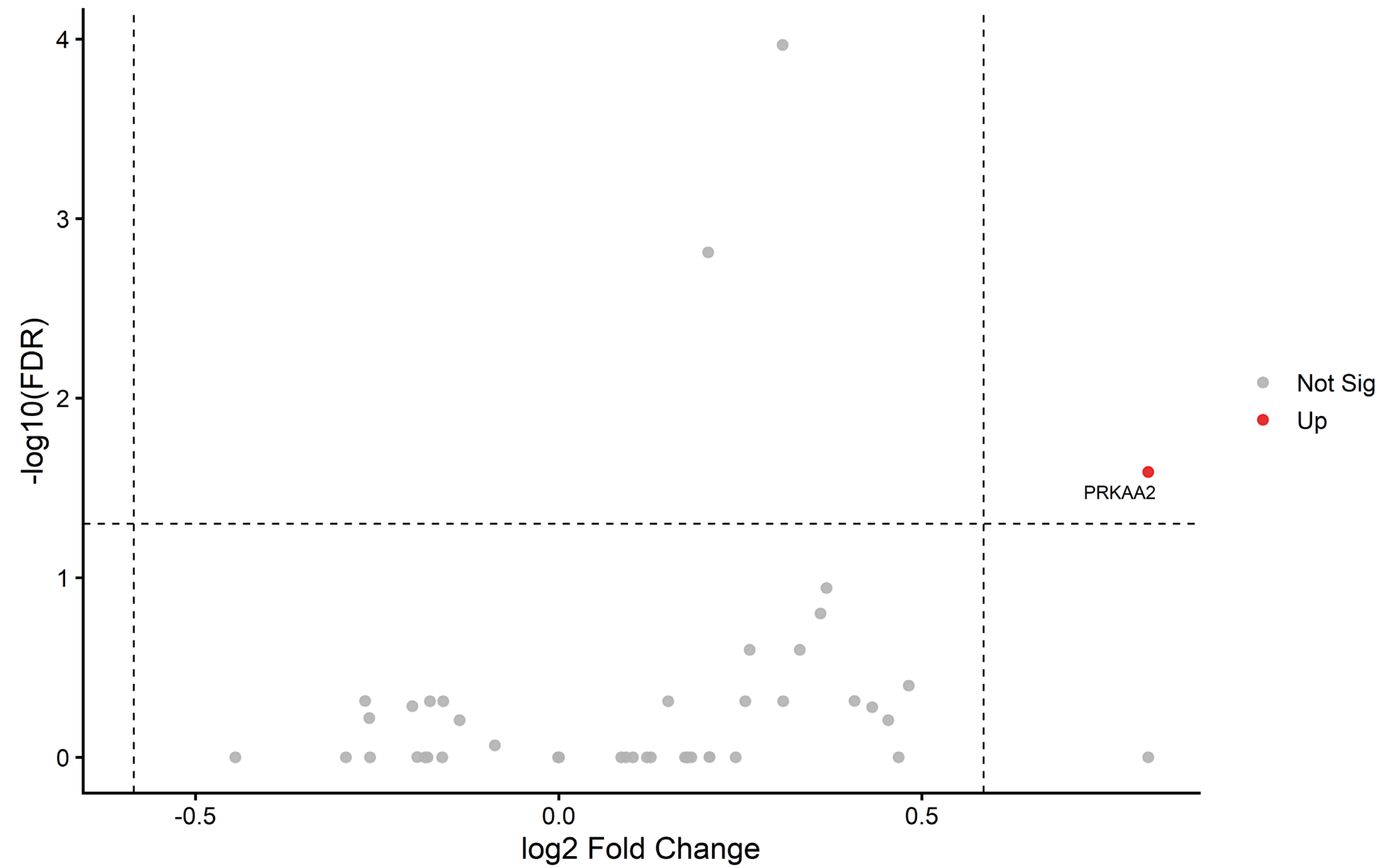
Rescue vs WT

Top 50 Variable Genes



Rescue vs WT

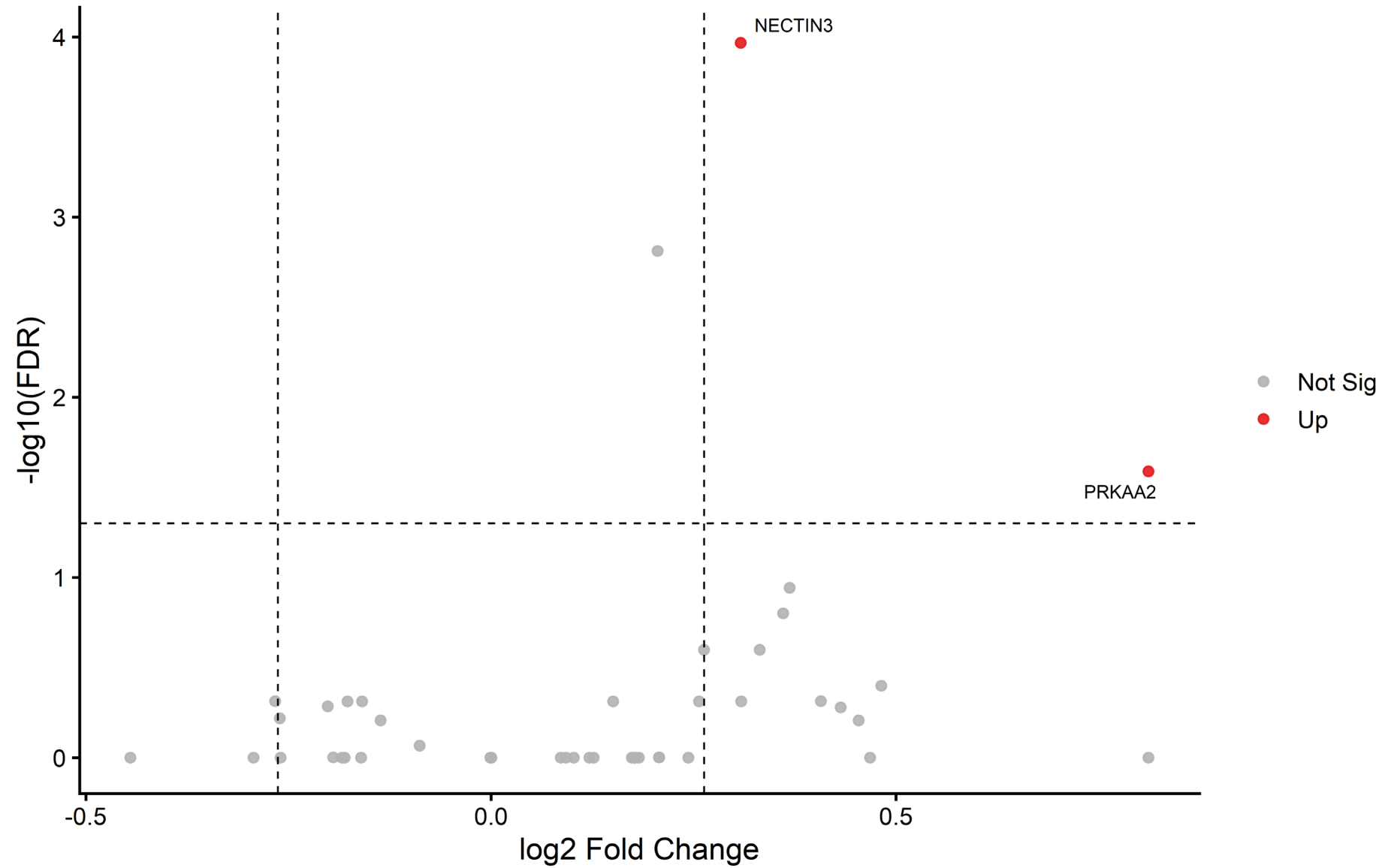
Rescue vs WT



Fold change (FC) threshold: **1.5**
FDR cutoff: 0.05

Rescue vs WT

Rescue vs WT



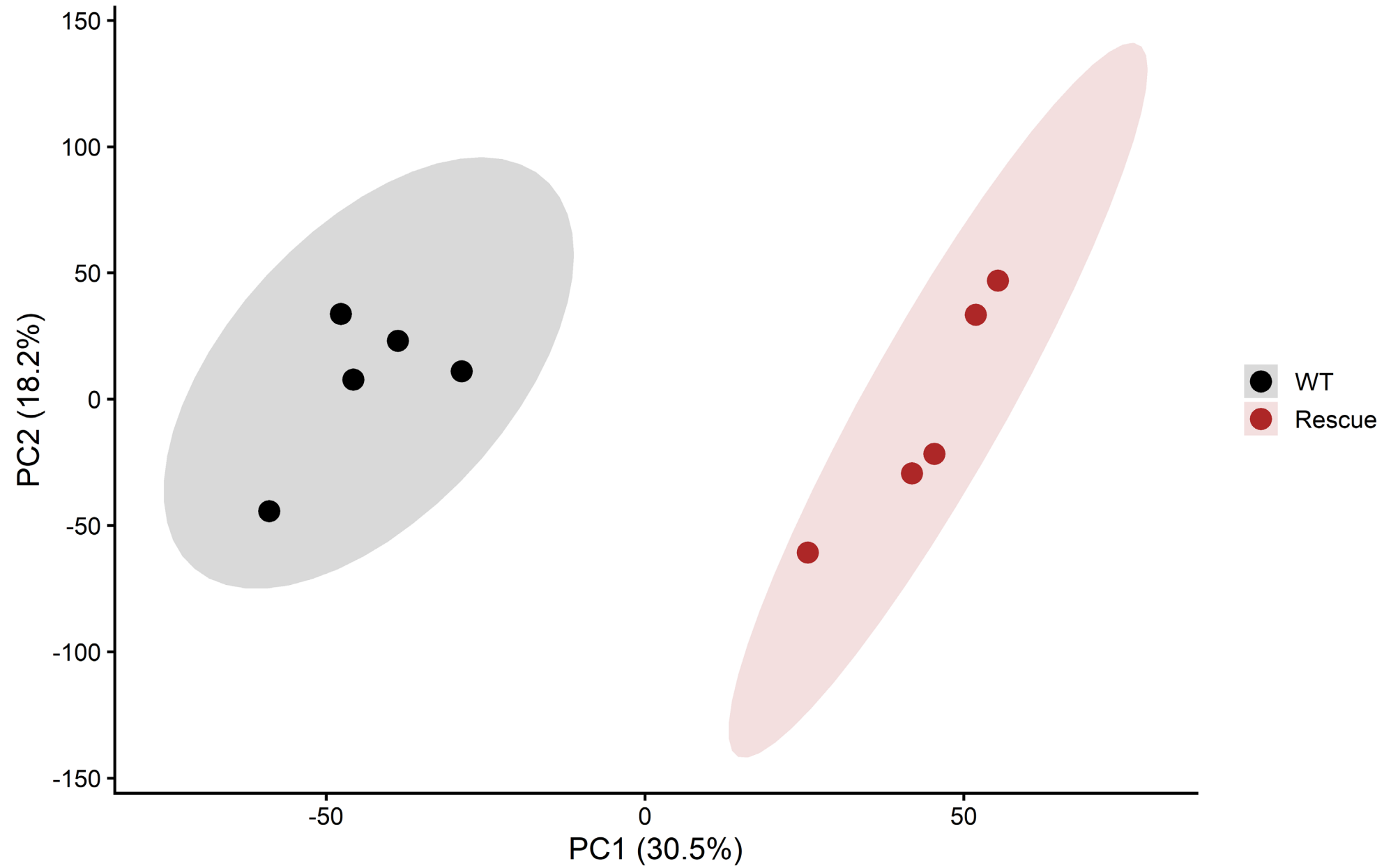
Fold change (FC) threshold: **1.2**

FDR cutoff: 0.05

Rescue vs WT Proteomics

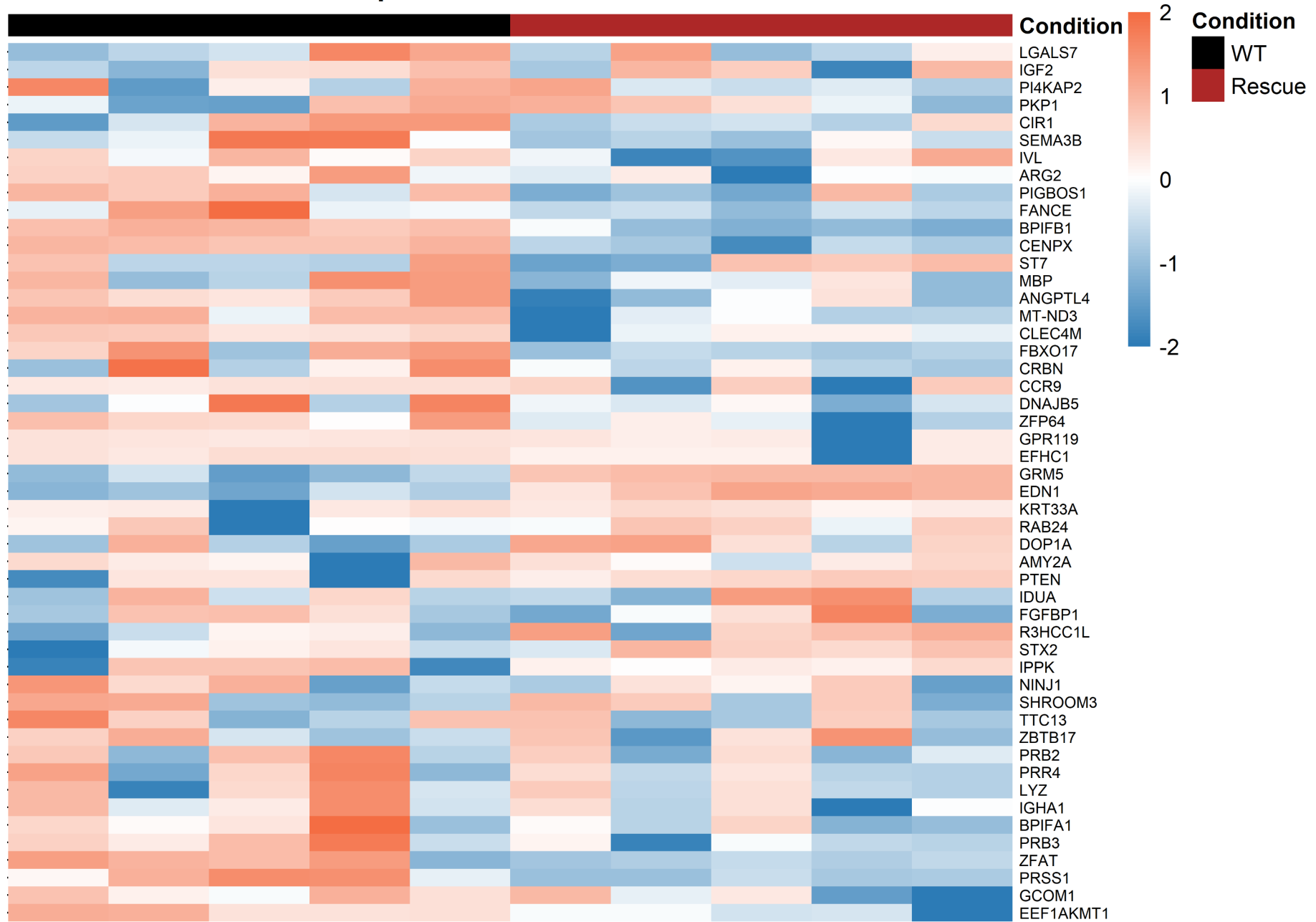
Rescue vs WT

PCA – Proteomics



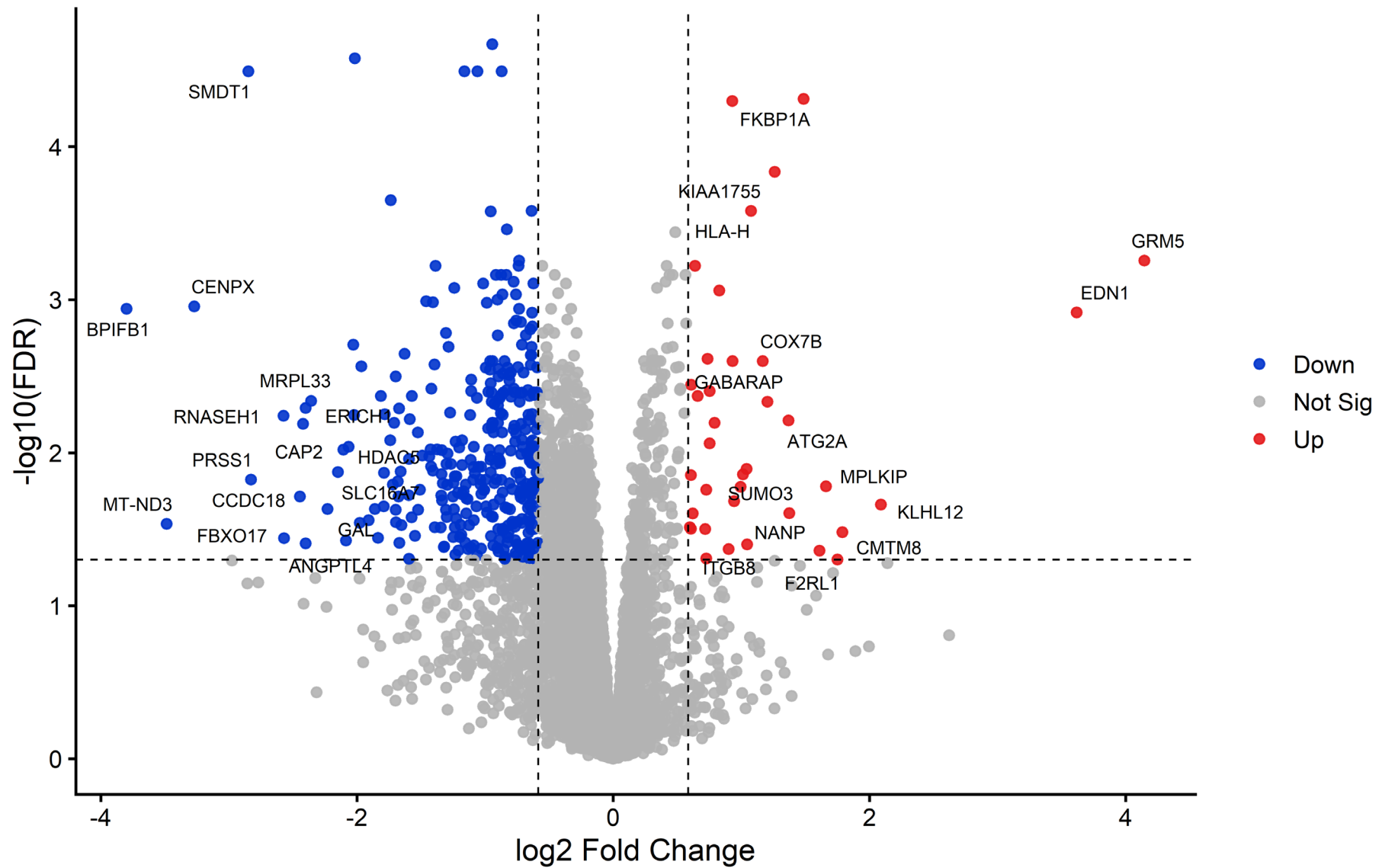
Rescue vs WT

Top 50 Variable Proteins



Rescue vs WT

Rescue vs WT

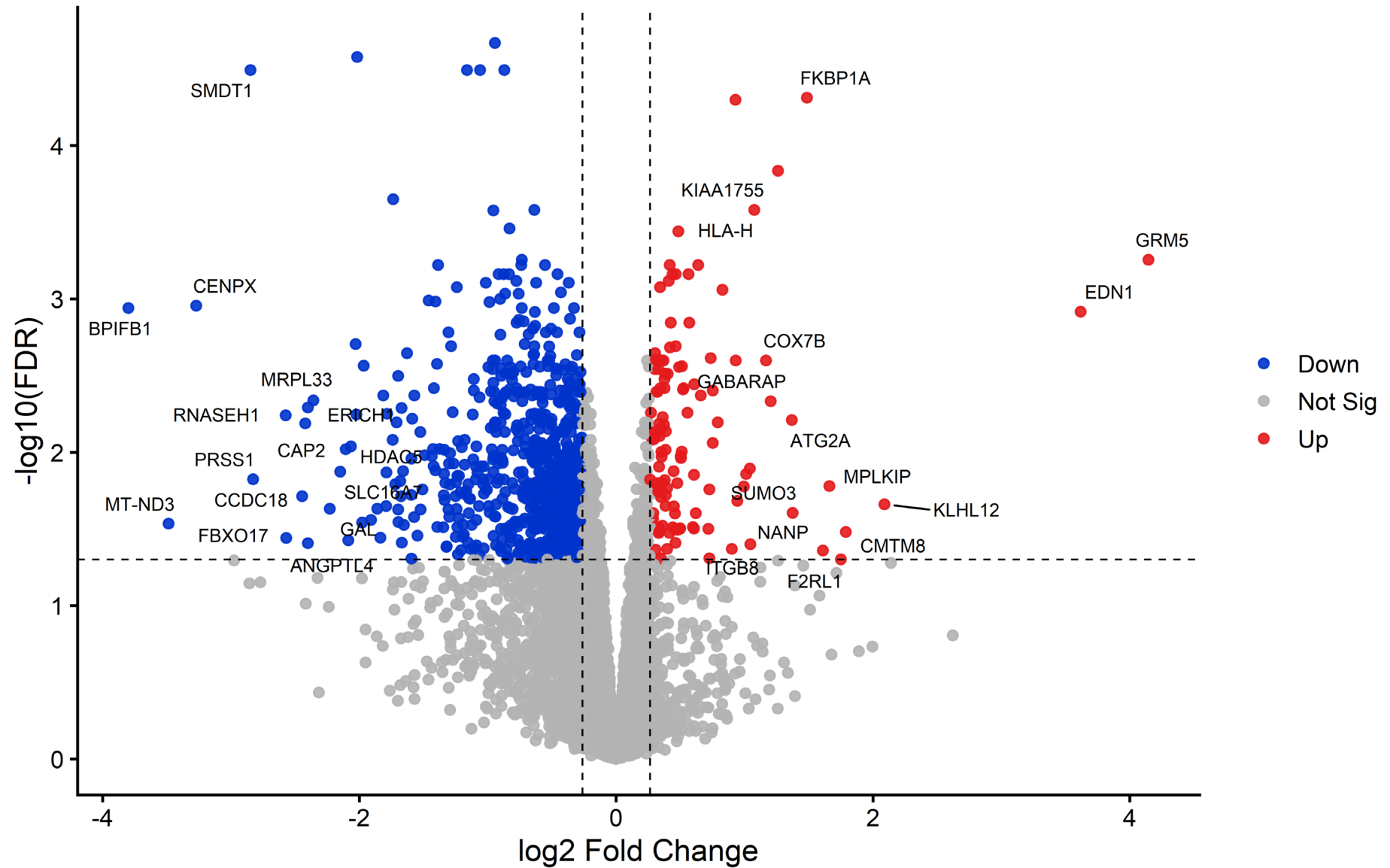


Fold change (FC) threshold: **1.5**

FDR cutoff: 0.05

Rescue vs WT

Rescue vs WT



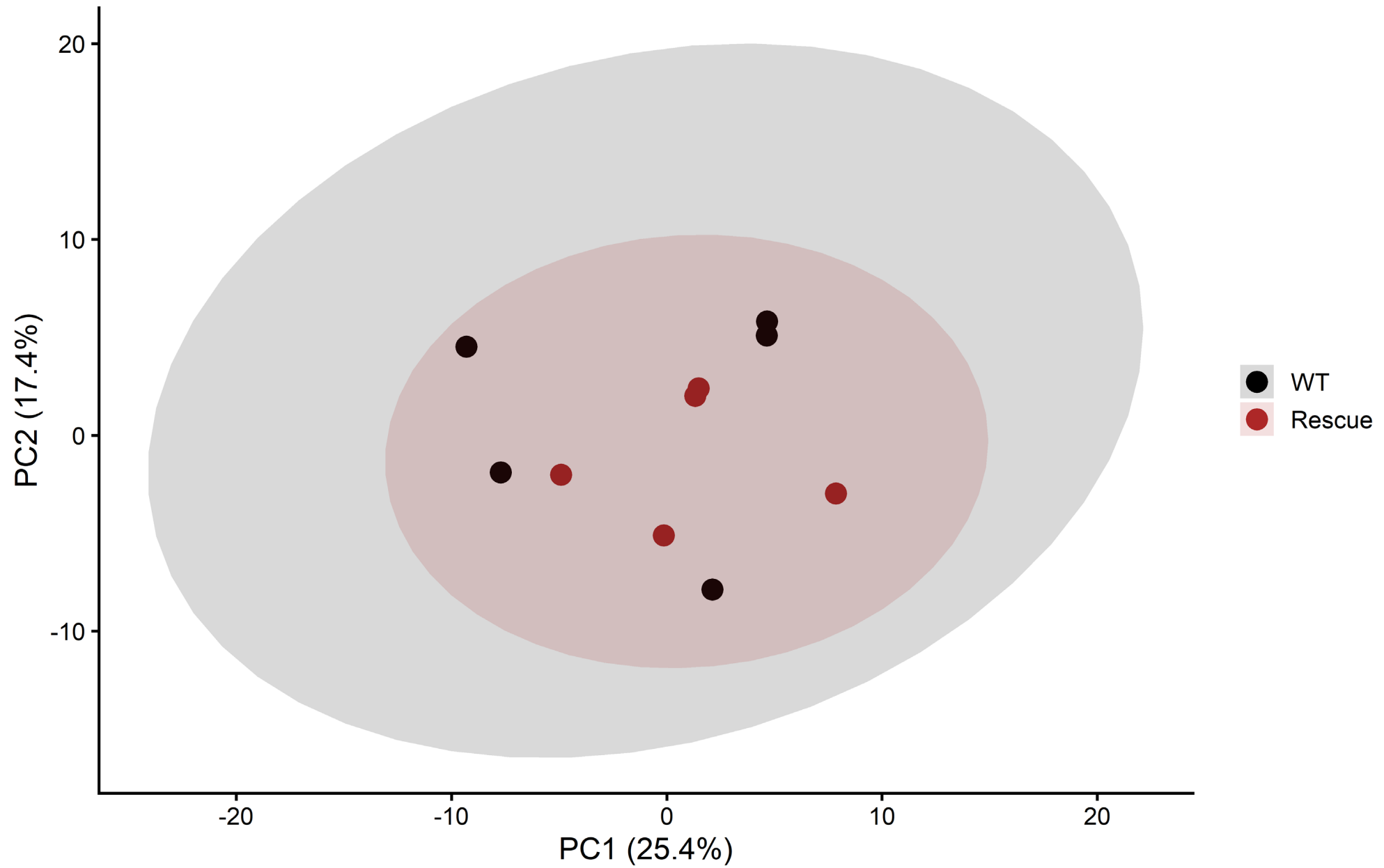
Fold change (FC) threshold: **1.2**

FDR cutoff: 0.05

Rescue vs WT Metabolomics

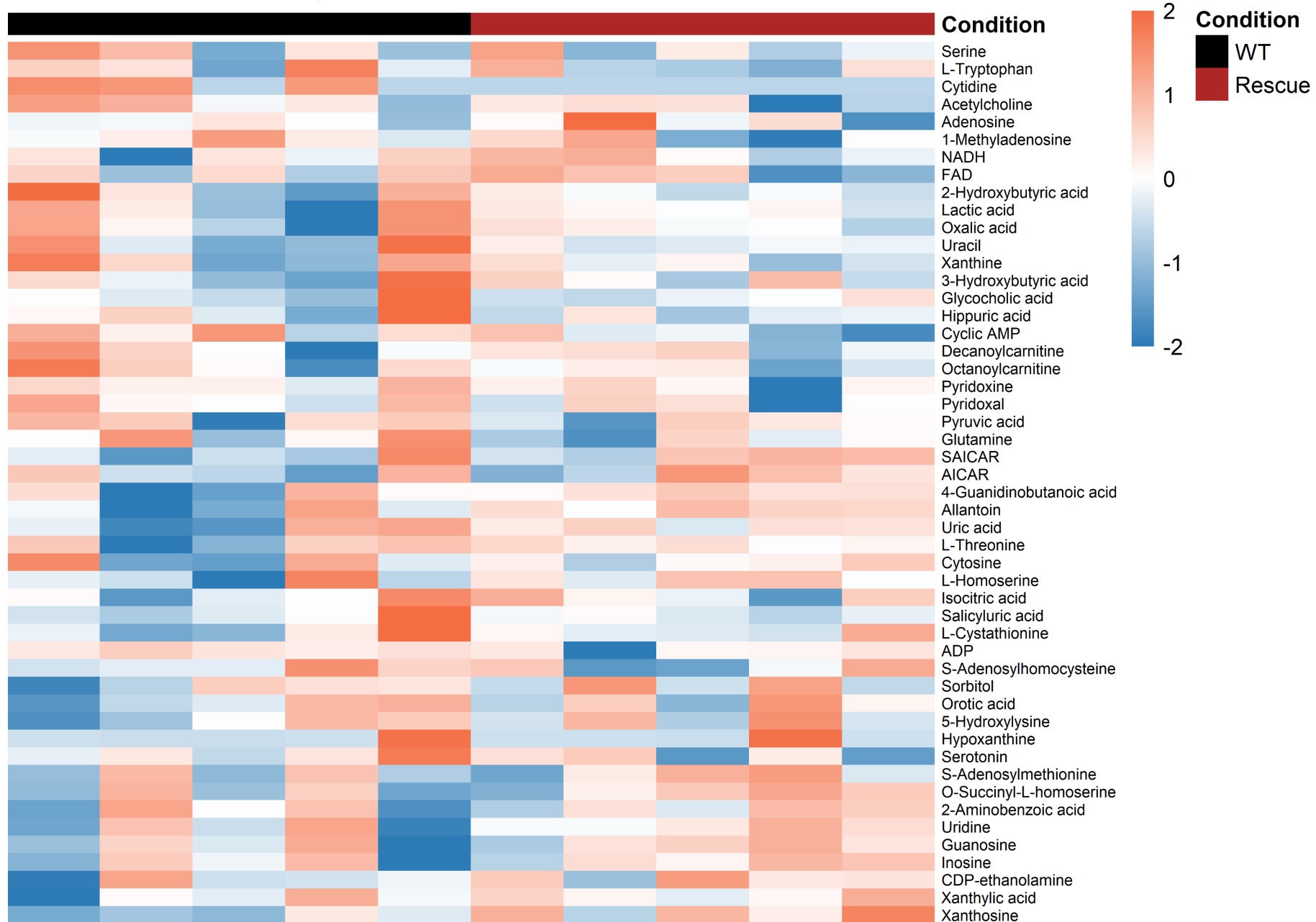
Rescue vs WT

PCA – Metabolomics



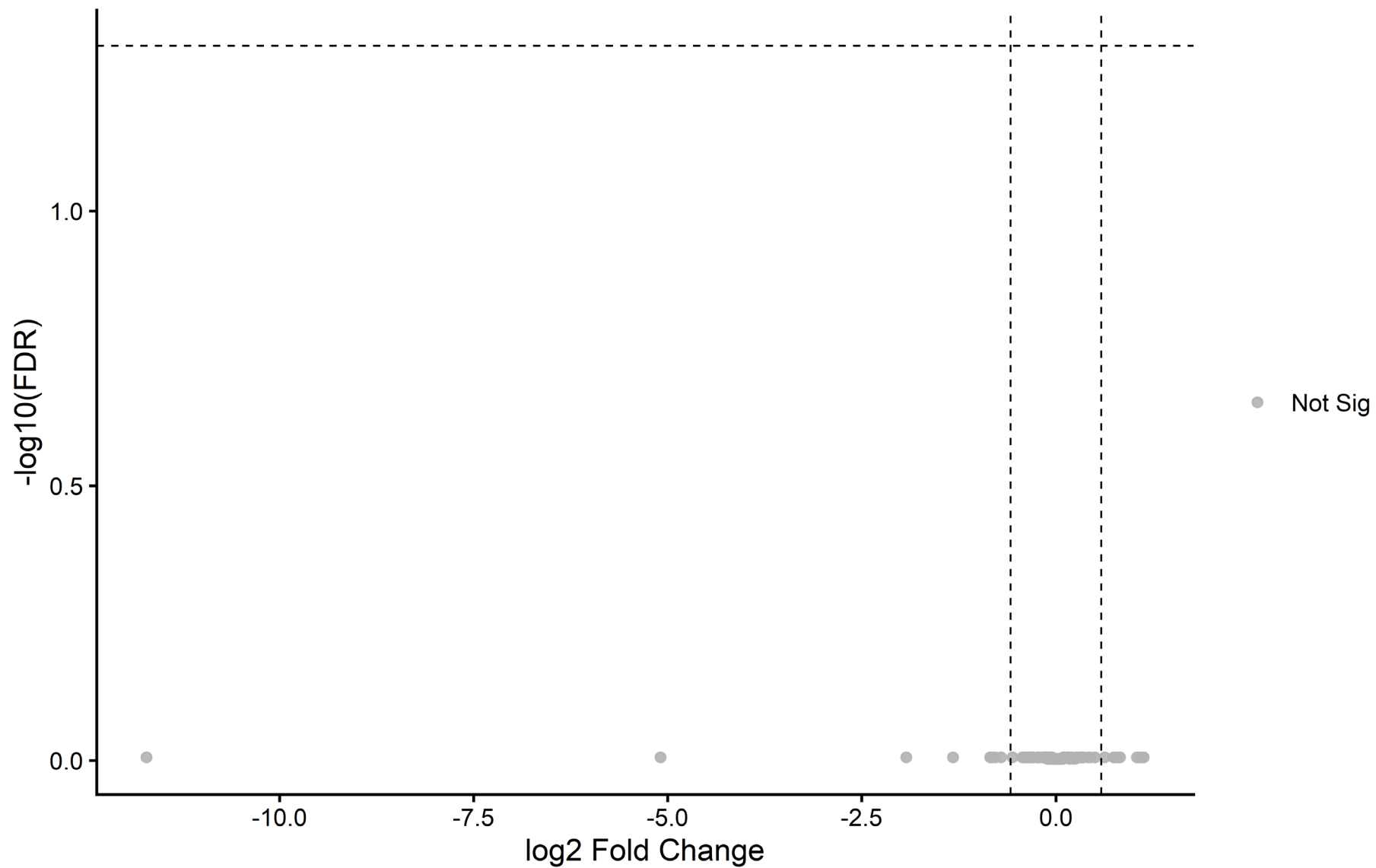
Rescue vs WT

Top 50 Variable Metabolites



Rescue vs WT

Rescue vs WT

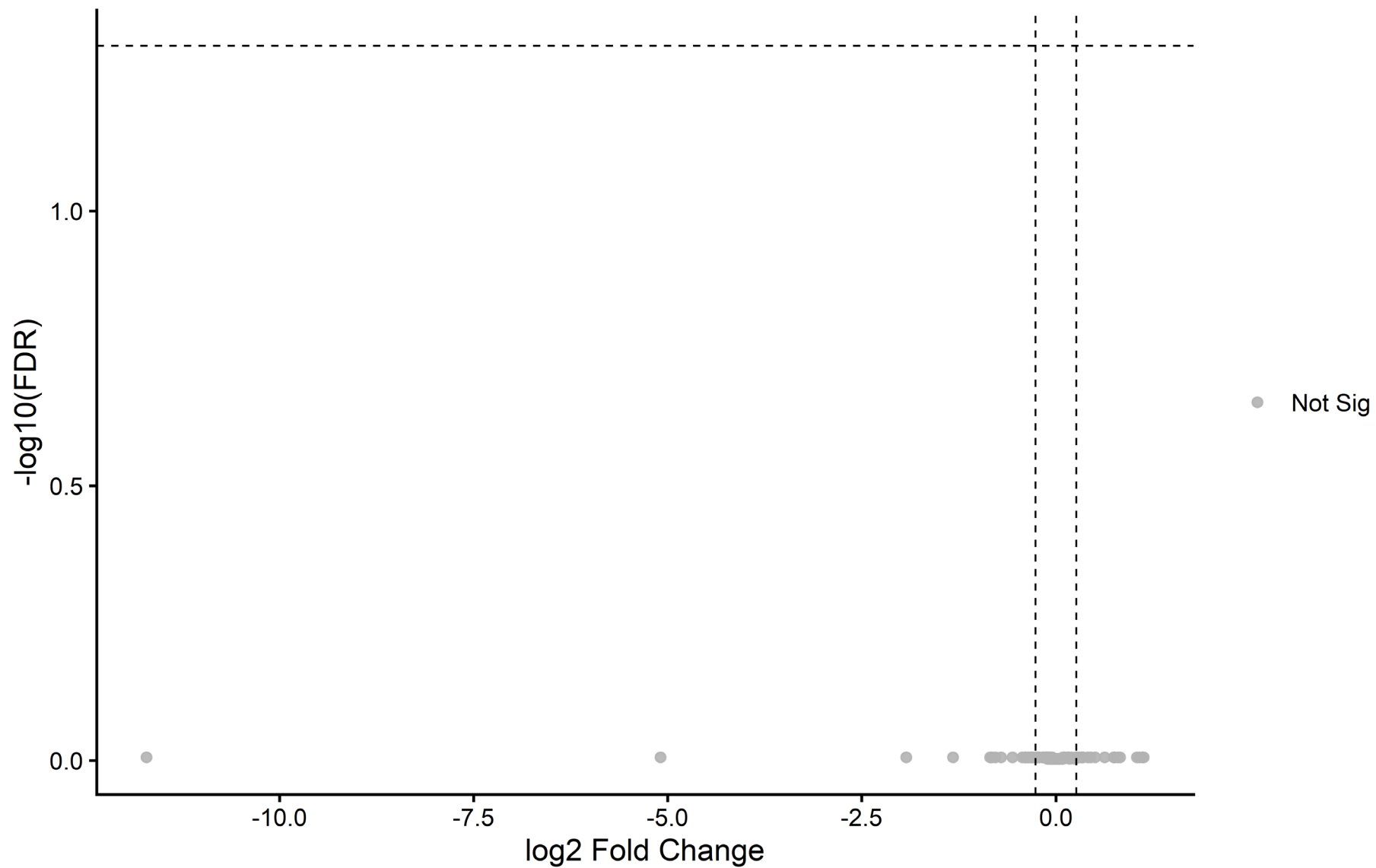


Fold change (FC) threshold: **1.5**

P-value threshold: 0.05

Rescue vs WT

Rescue vs WT



Fold change (FC) threshold: **1.2**

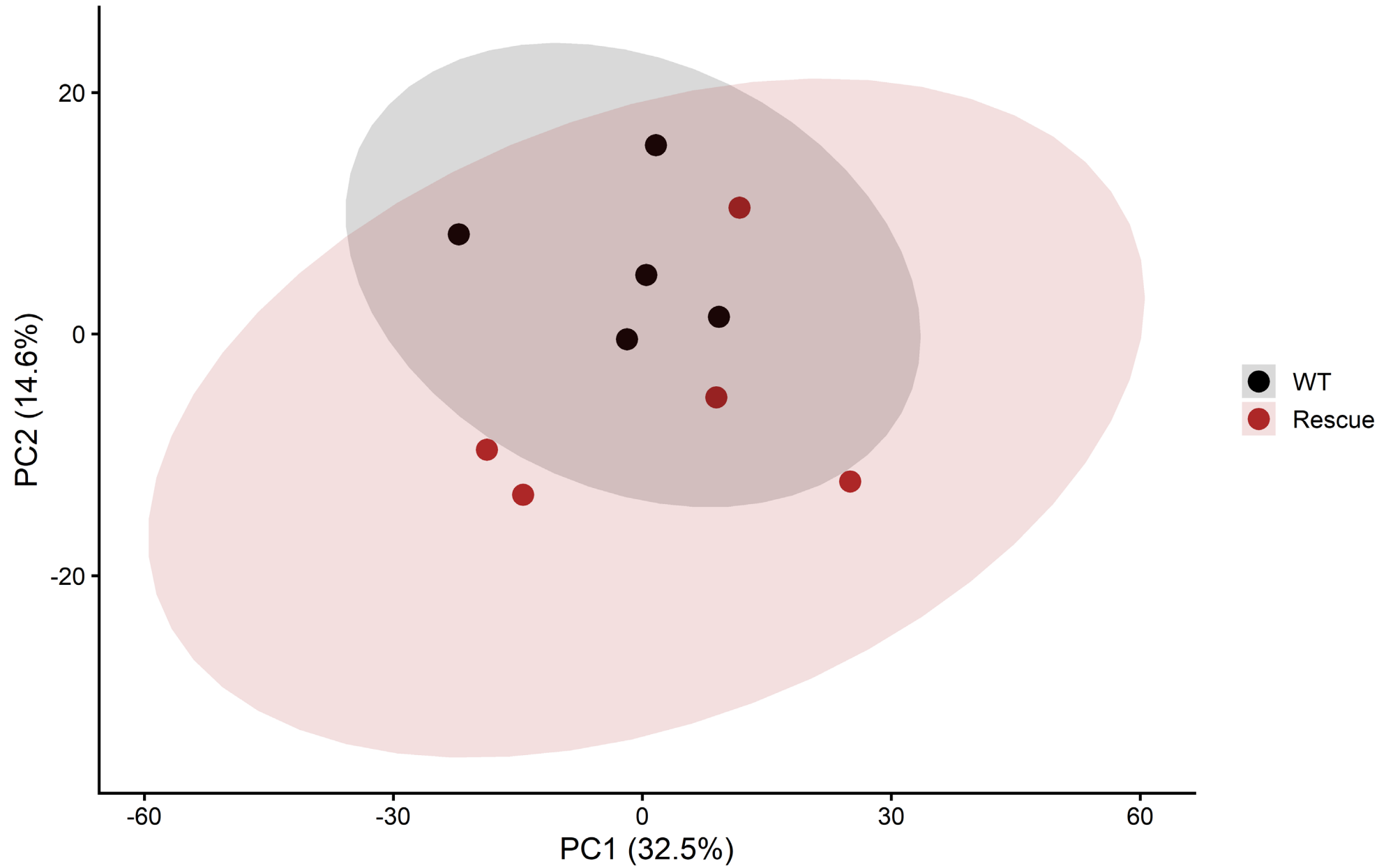
P-value threshold: 0.05

Rescue vs WT

Lipidomics

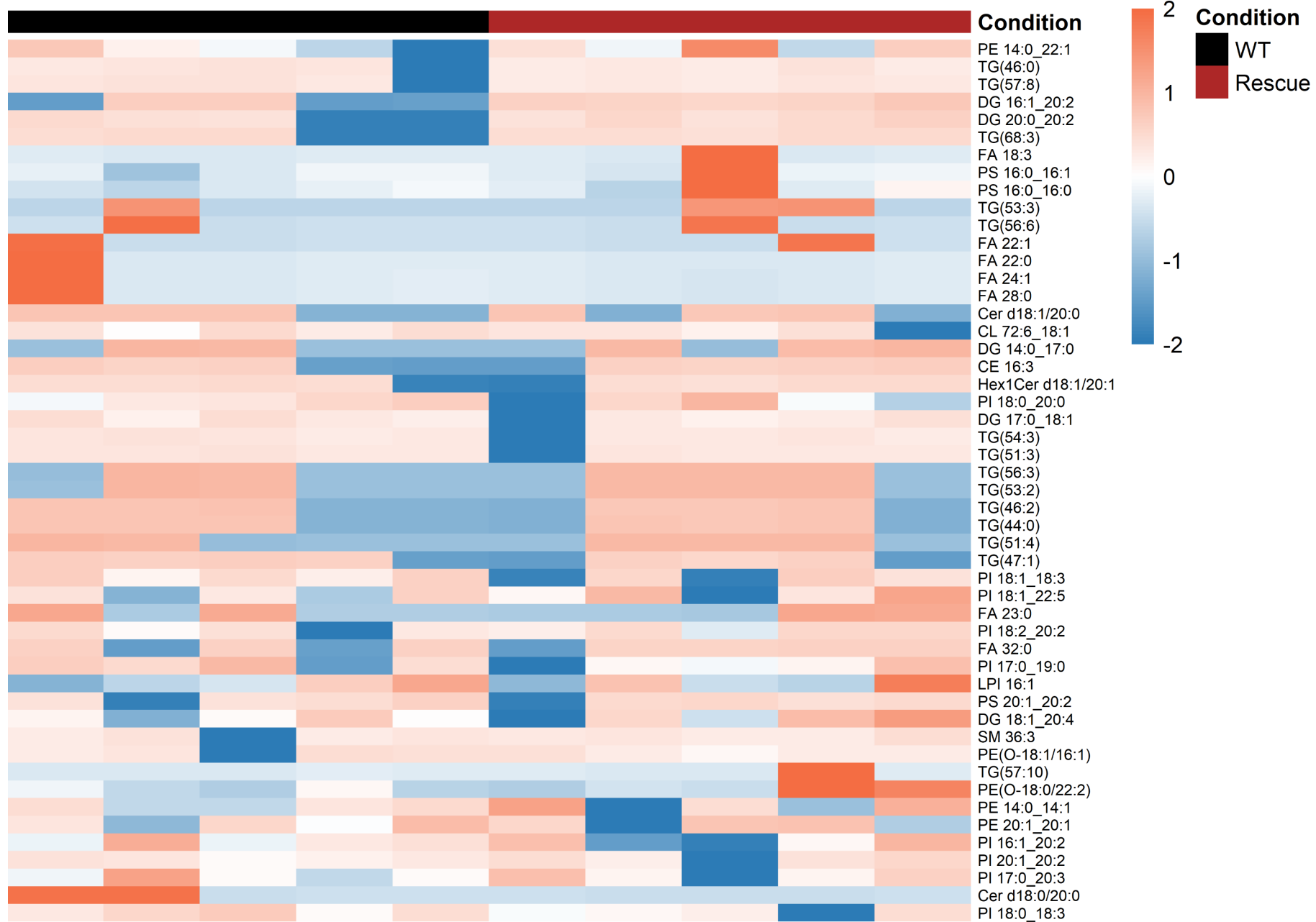
Rescue vs WT

PCA – Lipidomics



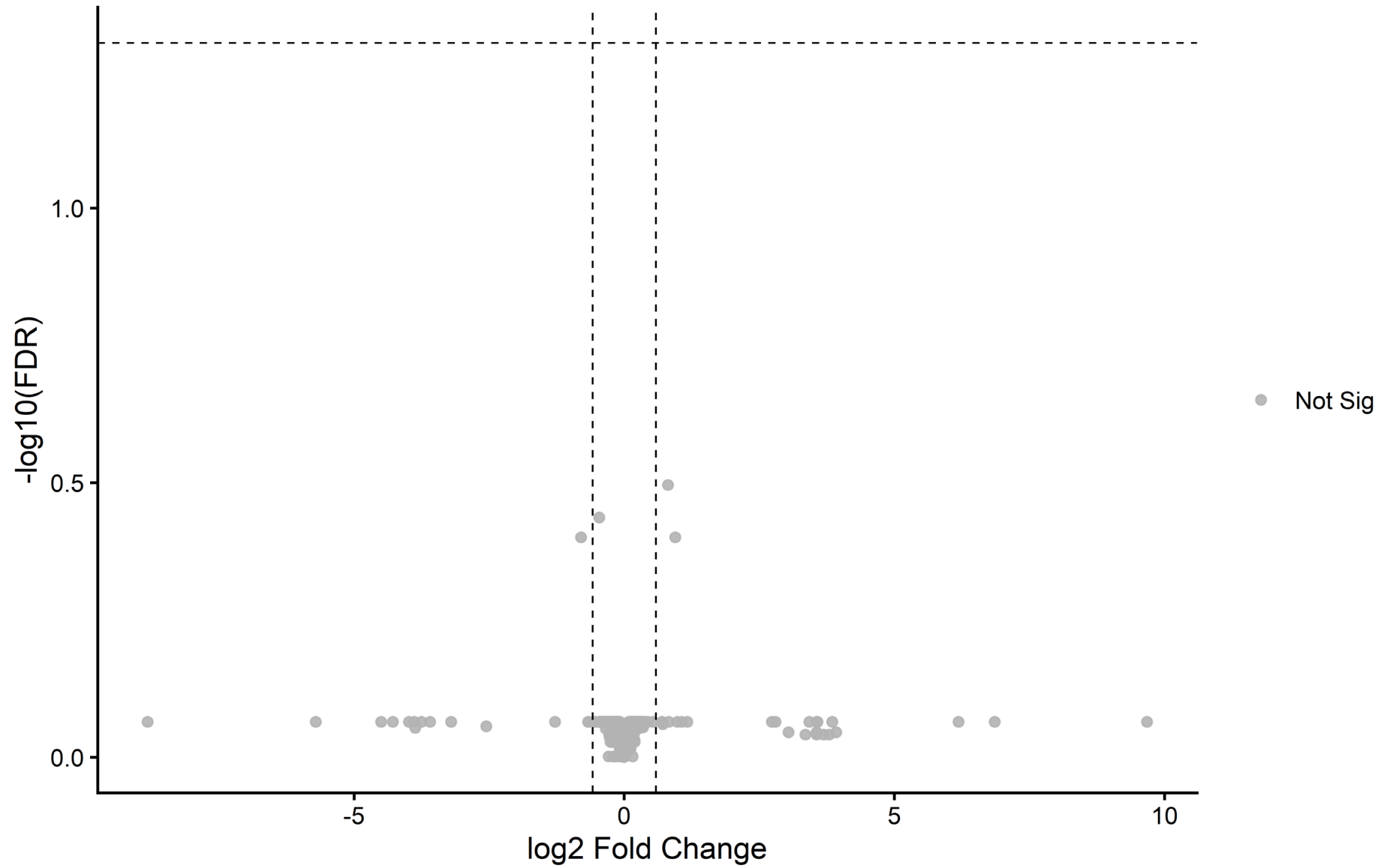
Rescue vs WT

Top 50 Variable Lipids



Rescue vs WT

Rescue vs WT

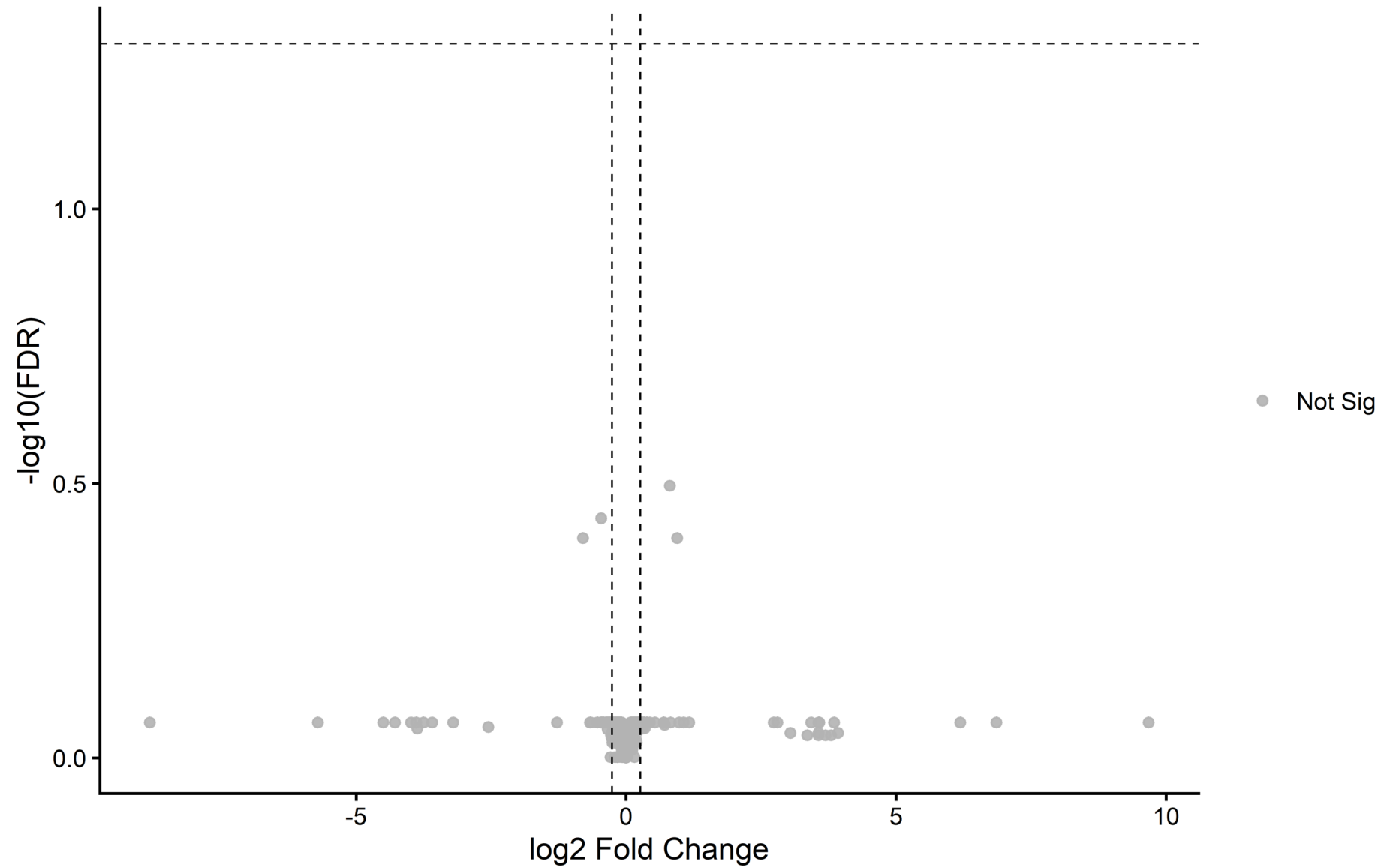


Fold change (FC) threshold: **1.5**

P-value threshold: 0.05

Rescue vs WT

Rescue vs WT



Fold change (FC) threshold: **1.2**

P-value threshold: 0.05