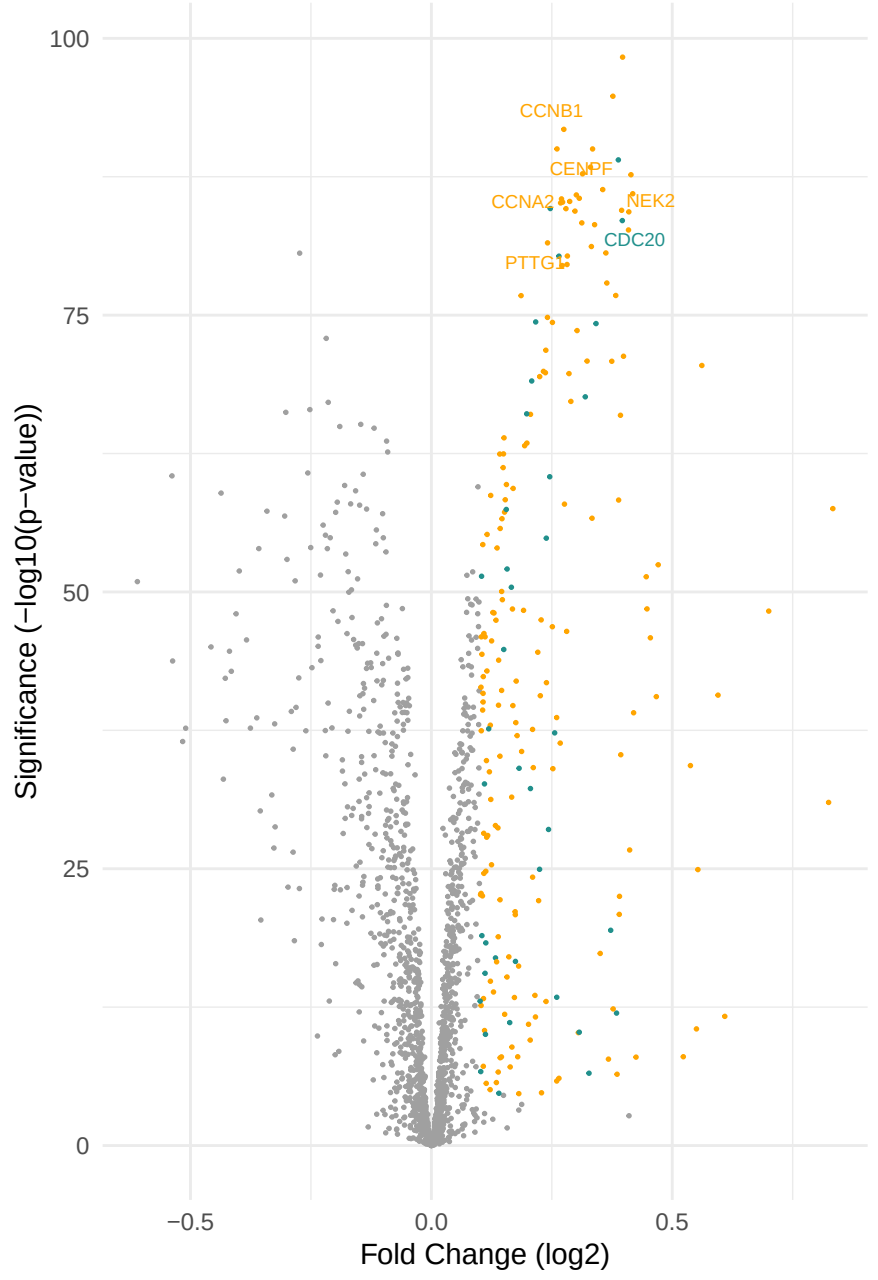
Perturbed E3 Ligases and their Substrates in Lung Squamous Cell Carcinoma



Genes

- Significant E3s
- Significant Substrates
- Insignificant E3s and Substrates

Figure 1 uses fold change, a measure of gene expression difference between normal and tumor samples, and the p-values from t-tests between control and tumor samples to show which E3 ligases and their substartes are over-expressed in lung squamous cell carcinoma. The significance cutoff is at a Bonferonni adjusted p-value and log transformed. The fold change cutoff is at the upper quartile of positive fold change values. These cutoffs help highlight genes that have potential use in PROTAC development for cancer therapy. The labeled points show the most significant E3 ligase that is paired with significant substrates, as examples that could be effective in treating lung squamous cell carcinoma. Equivalent figures were generated for each cancer type in our study and are included as supplemental figures.

Our code can be found at: https://github.com/dstone42/PROTACTherapy/blob/main/Code/volcano.R