

**Supplemental Figure 4:** For all proteins covered by the PeptideAtlas (PA) repository (October 2017) the most N-terminal peptides were extracted if they had semi-trypsin or Arg-C specificity (C-terminal specific, N-terminal flexible), corresponding to 11,282 PA trypsin and 7,868 PA Arg-C peptides.

(A) In comparison to our dataset (3,086 unique quantified N-terminal peptides with semi Arg-C specificity), the distribution of theoretical pl values shows no major differences. (B) The distribution of theoretical GRAVY values shows a slight shift of our dataset towards less hydrophobic peptides. This might be attributed to iTRAQ-8-plex labelling, that slightly increases the hydrophobicity of peptides and may improve the detection of hydrophilic peptides on pre-column C18 setups.