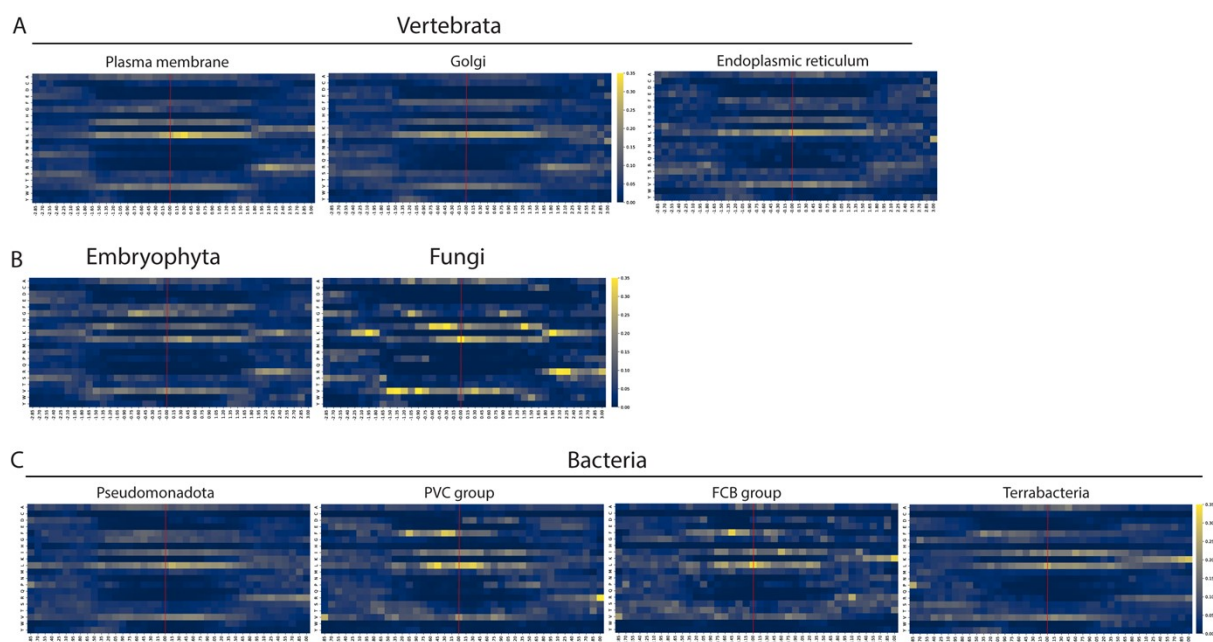
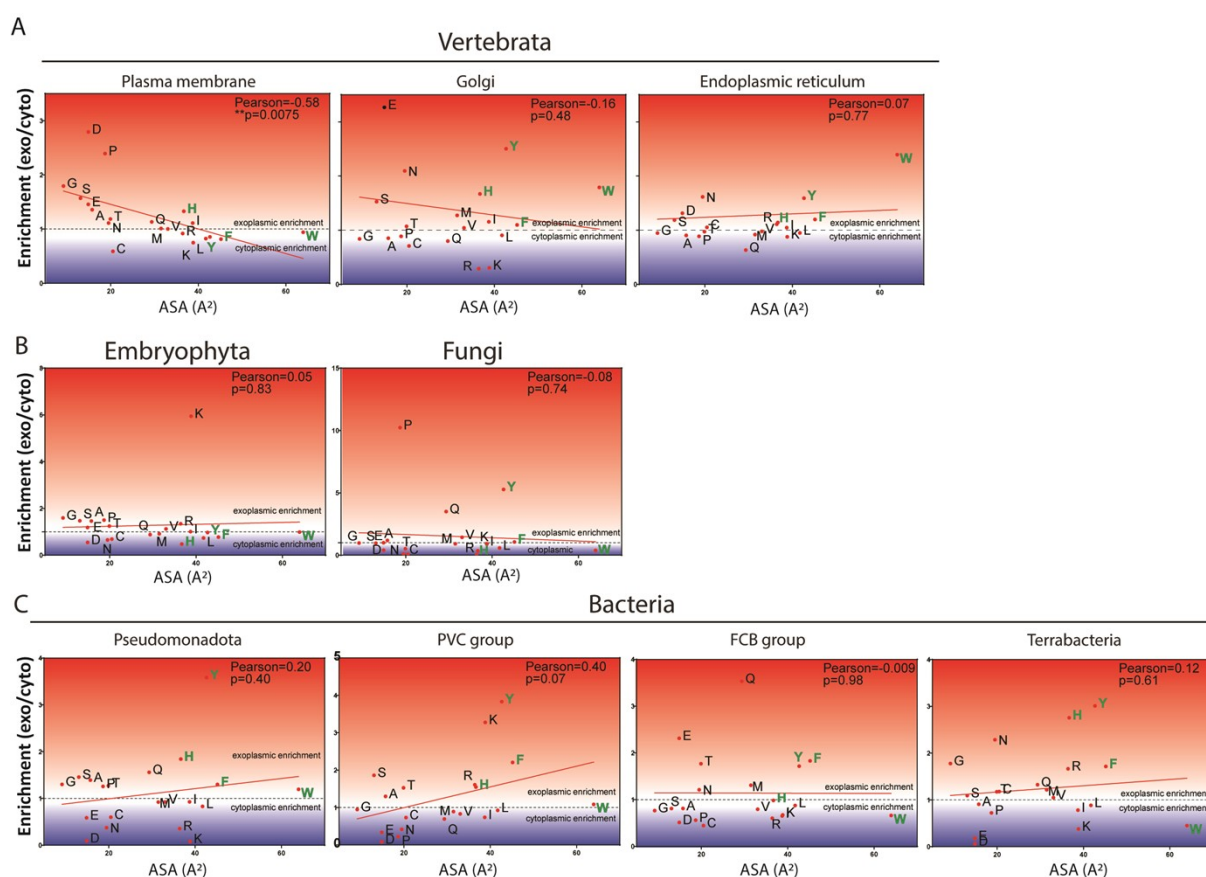


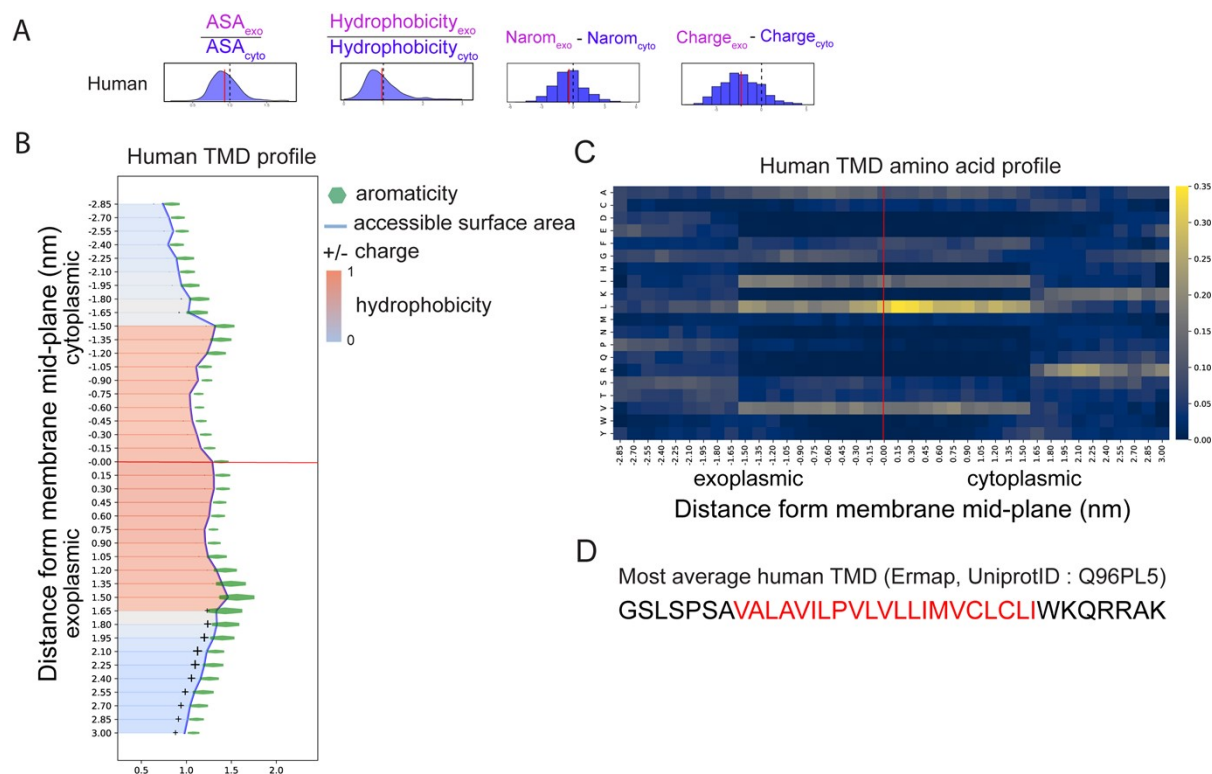
Supplementary figures



Supplementary Figure 1. Average profiles of amino acids upon different localizations in vertebrata (A), plasma membranes of embryophyte and fungi (B) and plasma membranes of bacteria (C). The red line is the membrane midplane. Distances from the mid-plane membrane center are indicated in nm from exoplasmic (negative values) to the cytoplasmic side (positive values).



Supplementary Figure 2 . Asymmetric enrichment of amino acids at the exo/cytoplasmic side of the TMD upon their respective ASA in vertebrates (**A**), green plants and fungi (**B**) and bacteria (**C**). The values displayed originate from ratios measured inside the TMD without their flanking residues. Charges might therefore not correspond to what is observed in Fig. S1.



Supplementary Figure 3. Properties of the human proteome. Average properties of the human TMD proteome (**A**). Normalized average transmembrane domain property profiles of aromaticity, accessible surface area, charge and hydrophobicity profiles plotted upon the membrane mid-plane (**B**). Transmembrane domains amino acid occurrence upon membrane mid-plane (**C**). Most similar TMD to average human TMD profiles as shown in (**A**) determined by three different methods (see materials and methods). Predicted TMD is shown in red (**D**). (n=990 single-pass TMPs).