

**Figure S1.** Comparison of Vps22 amino acid sequences between *Homo sapiens*, *Saccharomyces cerevisiae* and *Entamoeba histolytica*.

<i>Entamoeba histolytica</i>	MSKRTIDLLCRQKEAMS-----TKGKEFCLVNQKERERQINLFKLKLEEFQNNRYEITN
<i>Homo sapiens</i>	MHRRGVGAGAIAKKKLAEAKYKERGTVLAEDQLAQMSKQLDMFKNLEEFASKHKQEIRK
<i>Saccharomyces cerevisiae</i>	MKQFGLAAF-----DELKDGKYNDVNKTILEKQSVELRDQLMVFQERLVEFAKKHNSQLQA
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<i>Entamoeba histolytica</i>	DVNIQNMLYILCRKMGVEPLTTEKSYFN---IFFGSNAFYNELTVQIIEECYKSRESNGG
<i>Homo sapiens</i>	NPEFRVQFQDMCATIGVDPLASGKGFWS---EMLGVGDFYYELGVQIIEVCLALKHRNGG
<i>Saccharomyces cerevisiae</i>	SPEFRSKFMHMCSSIGIDPL----SLFDRDKHLFTVNDFYEVCLKVIEICRQTKDMNGG
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<i>Entamoeba histolytica</i>	IIEINKLCELINKKR---KSIIRQNDIFKAINQAKCLGEGCLKVVTIYQQSYVISVPFELA
<i>Homo sapiens</i>	LITLEELHQQVLKGRGKFAQDVSQDDLIRAIKKLKALGTGFGIIPVGGTYLIQSVPAELN
<i>Saccharomyces cerevisiae</i>	VISFQELEKVHFR-----KLVNGLDDLEKSIDMLKSL-ECFEIFQIRGKKFLRSVPNELT
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<i>Entamoeba histolytica</i>	DDQQVVLTLNKKPYFLEDELLI-IGWSKERVKGTLVWLLNIGMLWVDDQFPLDGKTTRA
<i>Homo sapiens</i>	MDHTVVLQLAEKNGYVTVSEIKASLKWETERARQVLEHLLKEGLAWLDLQAPGEAH----
<i>Saccharomyces cerevisiae</i>	SDQTKILEICSIILGYSSISLLKANLGWEAVRSKSALDEMANGLLWIDYQGGAEAL----
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<i>Entamoeba histolytica</i>	YWTSLY--NLF-----
<i>Homo sapiens</i>	YNLPALFTDLYSQEITAEAREALP
<i>Saccharomyces cerevisiae</i>	YNDPSWITRQL-----
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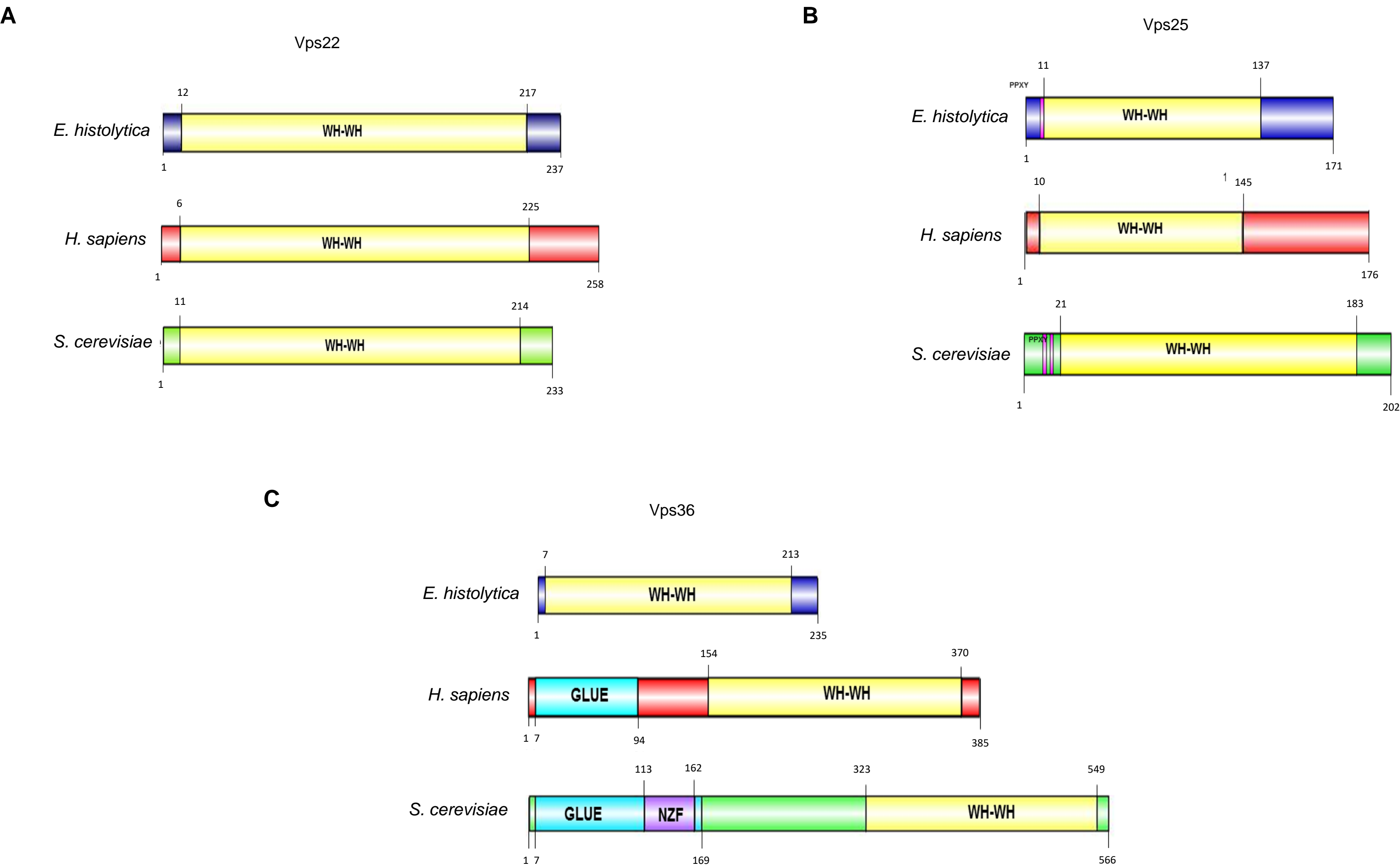




**Figure S3.** Comparison of Vps36 amino acid sequences between *Homo sapiens*, *Saccharomyces cerevisiae* and *Entamoeba histolytica*.



**Figure S4.** EhVps22, EhVps25, and EhVps36 proteins conserve the WH domains.





**Figure S5.** Predicted model of EhVps22, EhVps25, and EhVps36 MDS results

