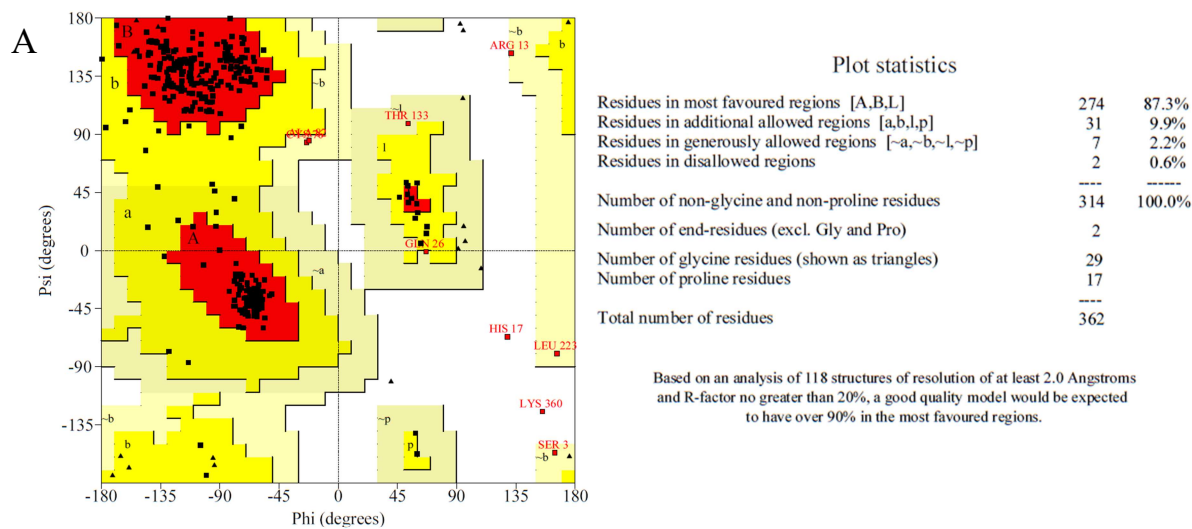


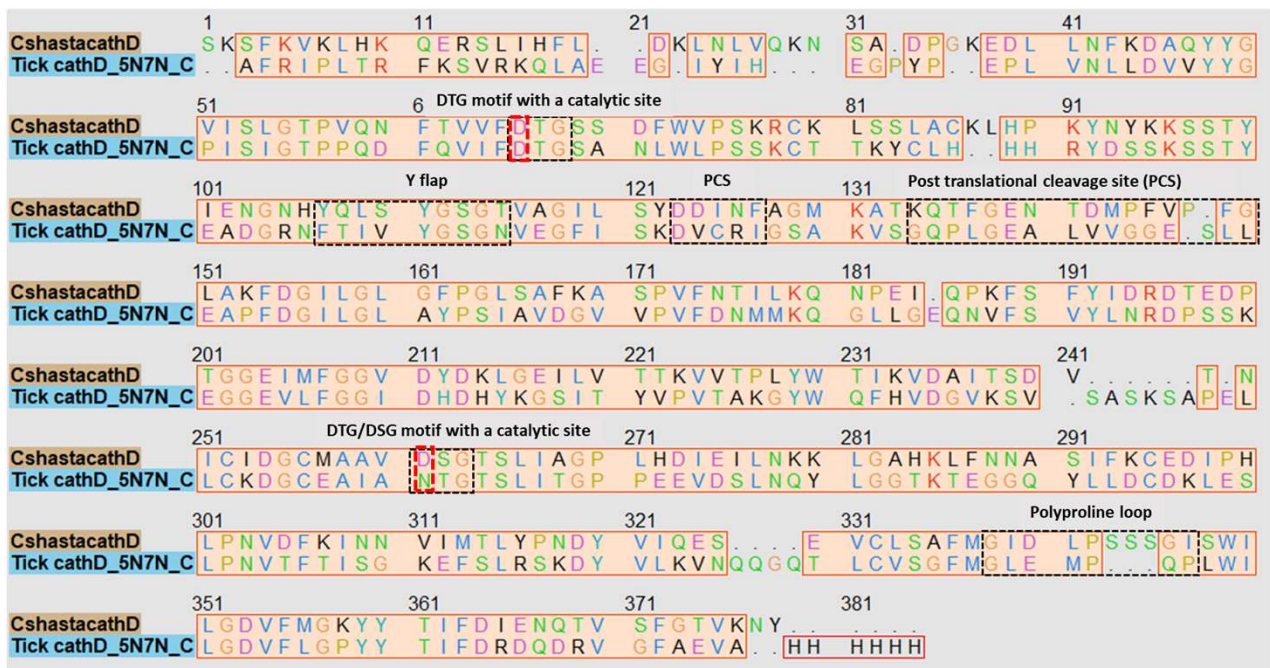
Supplementary Figure 1.- *Ceratonova shasta* IIR cathepsin D. A) Stereo-chemical quality analysis: Ramachandran plot and statistics using PROCHECK; B) Superposition of *C. shasta* cathepsin D and tick *Ixodes ricinus* cathepsin D zymogen (PDB: 5N7N) and C) Structural alignment of *C. shasta* cathepsin D and tick cathepsin D (PDB: 5N7N) using Phyre2 modelling and UCSF Chimera for visualization (in red: aspartic catalytic sites).



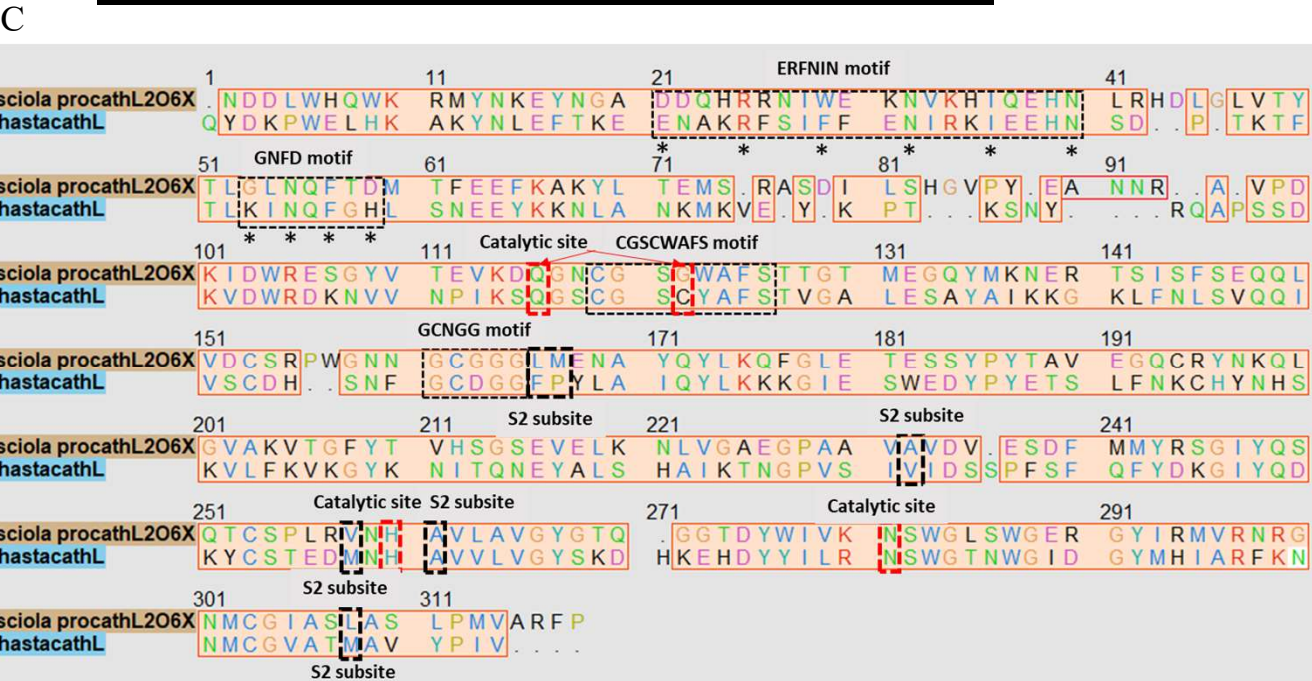
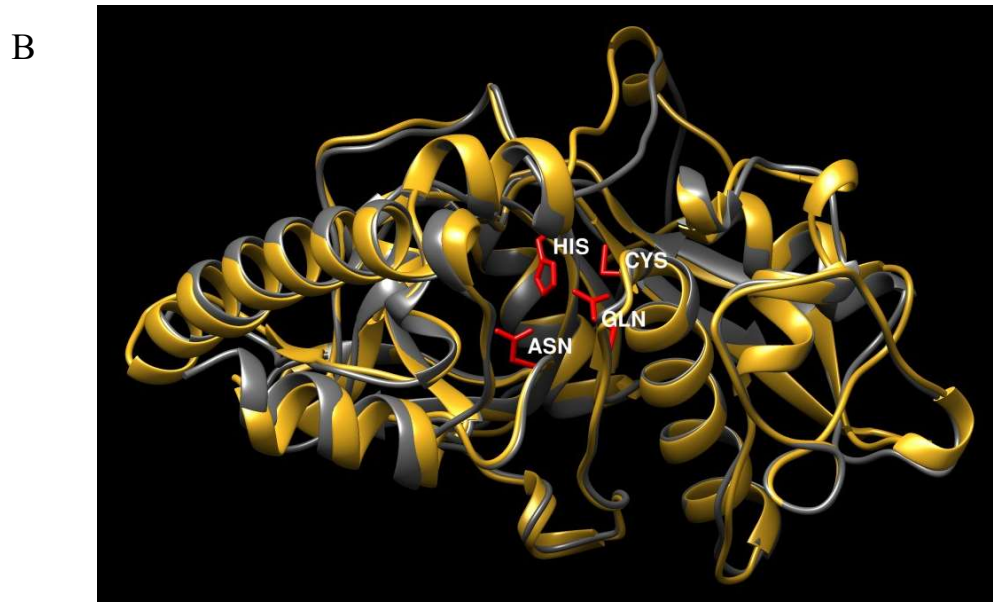
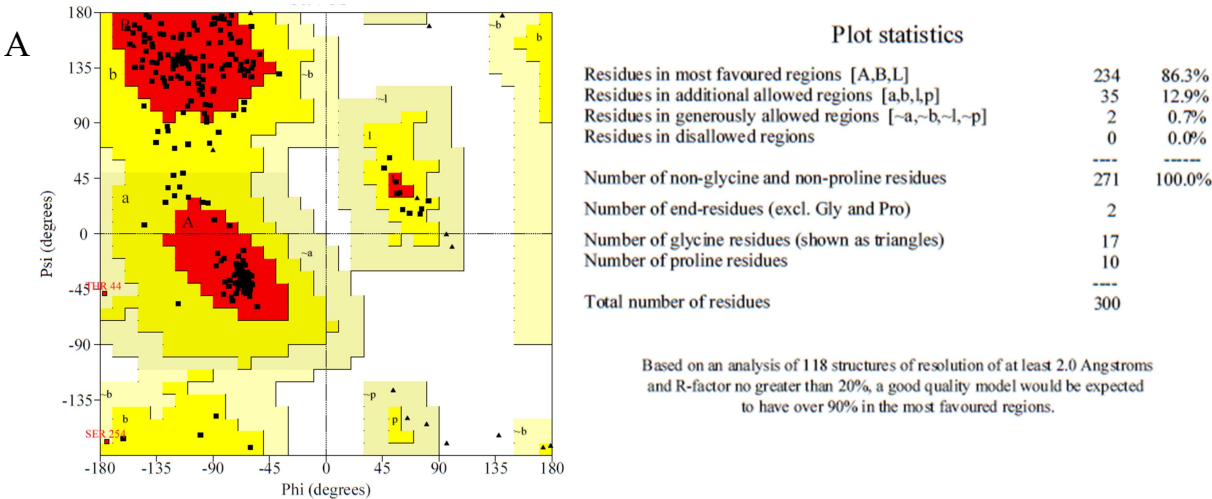
B



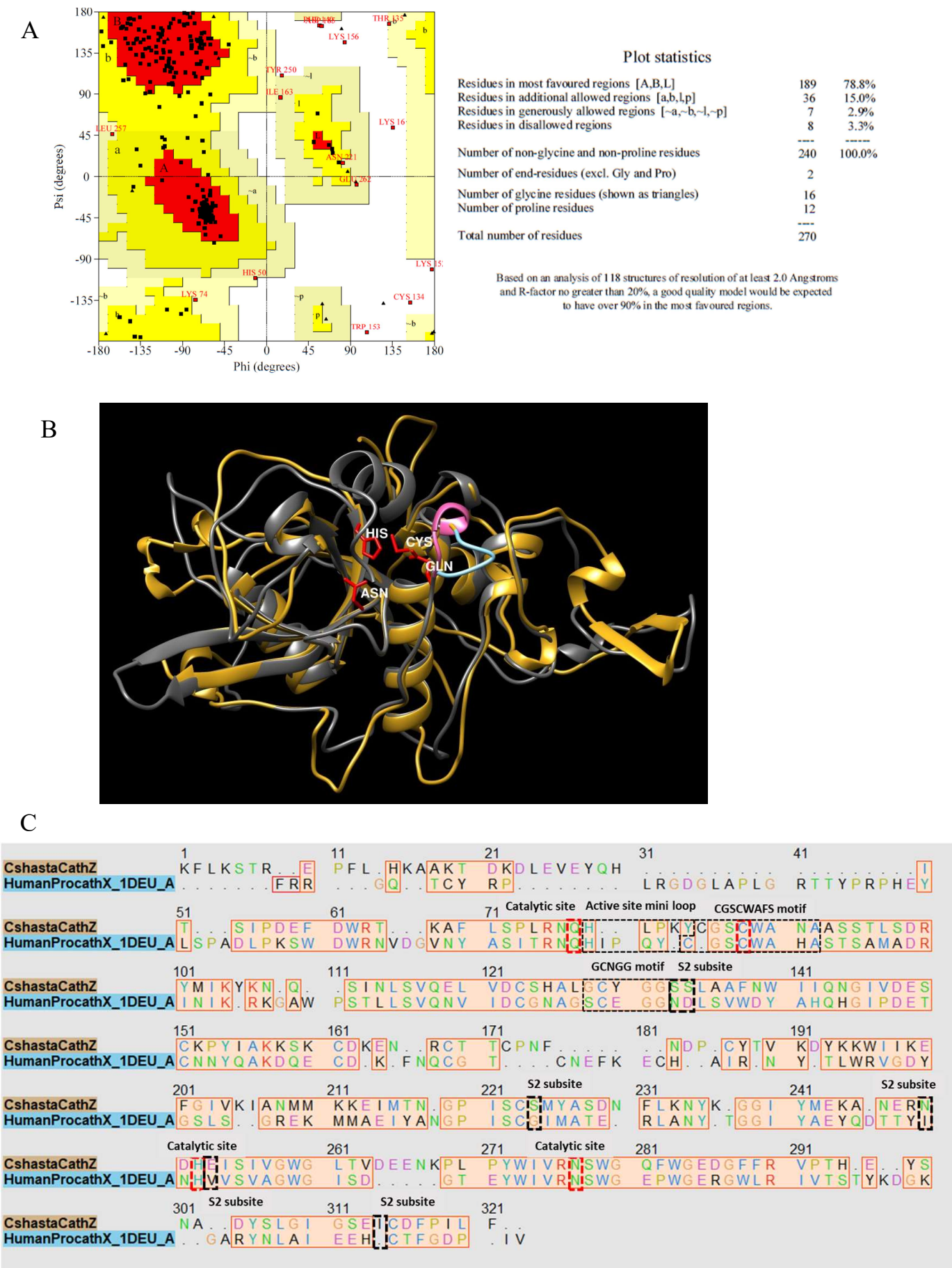
C



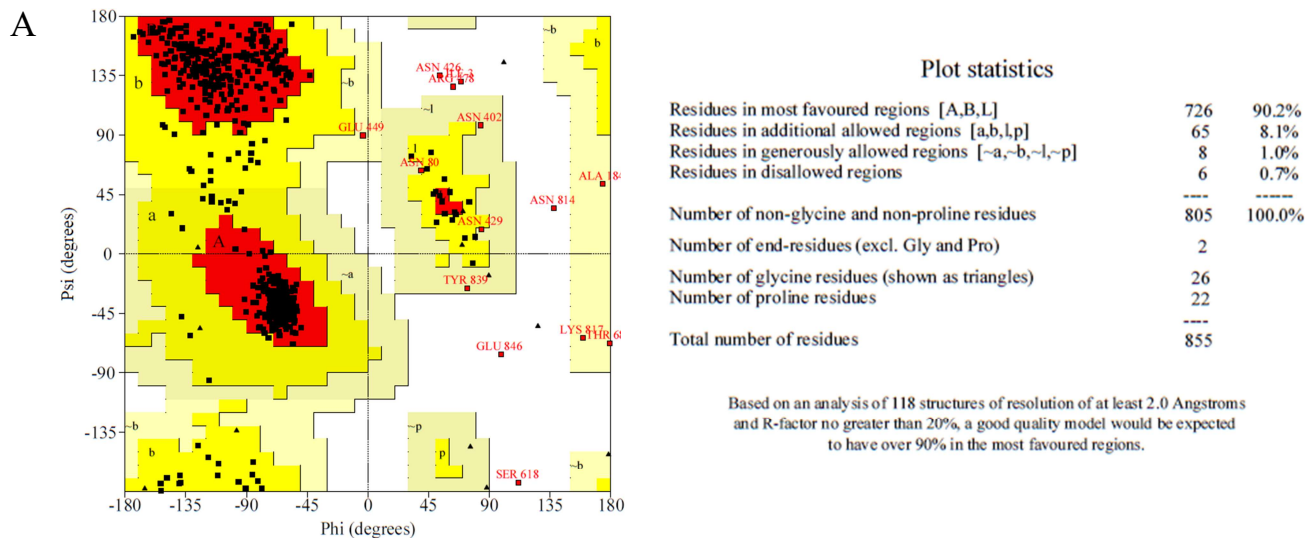
Supplementary Figure 2.- *Ceratonova shasta* IIR cathepsin L. A) Stereo-chemical quality analysis: Ramachandran plot and statistics using PROCHECK; B) Superposition of *C. shasta* cathepsin L and *Fasciola hepatica* procathepsin L (PDB: 2O6X) and C) Structural alignment of *C. shasta* cathepsin L and *F. hepatica* procathepsin L (PDB: 2O6X) using Phyre2 modelling and UCSF Chimera for visualization (in red: catalytic sites; asterisks: conserved residues in the corresponding ERFNIN and GNFD motifs).



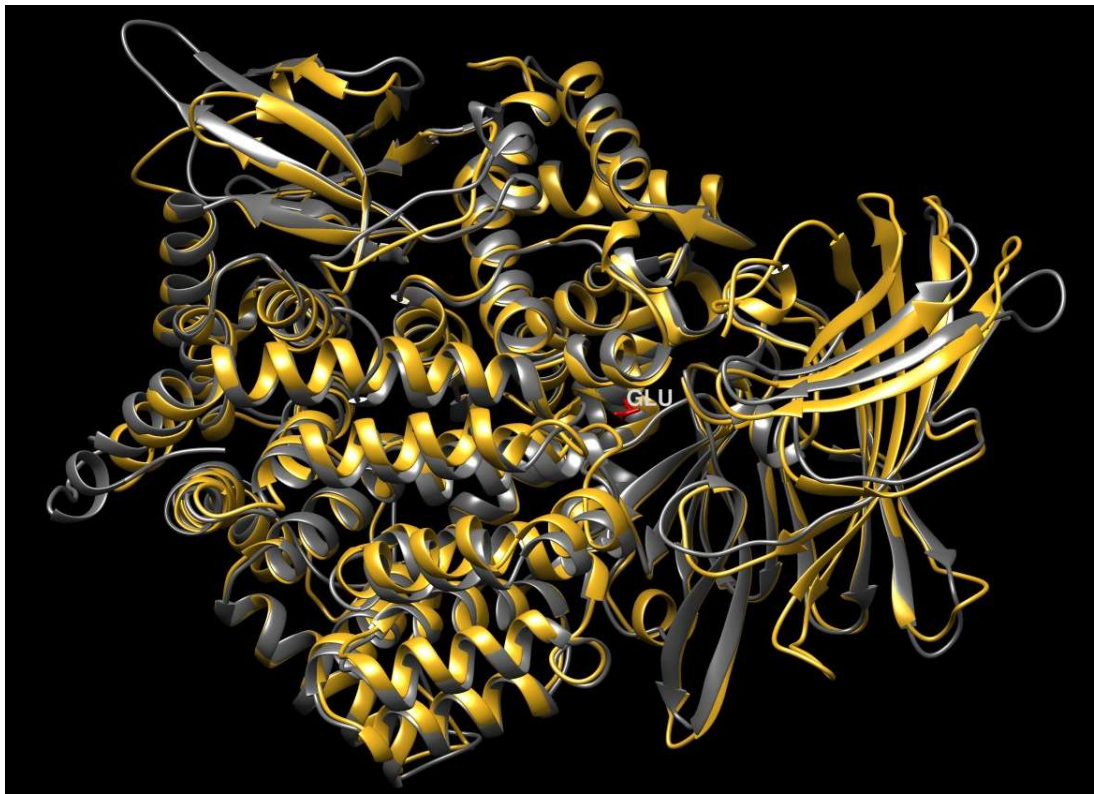
Supplementary Figure 3.- *Ceratonova shasta* IIR cathepsin Z. A) Stereo-chemical quality analysis: Ramachandran plot and statistics using PROCHECK; B) Superposition of *C. shasta* cathepsin Z and *H. sapiens* procathepsin X (PDB: 1DEU) and C) Structural alignment of *C. shasta* cathepsin Z and *H.sapiens* procathepsin X (PDB: 1DEU) using Phyre2 modelling and UCSF Chimera for visualization (in red: catalytic sites).



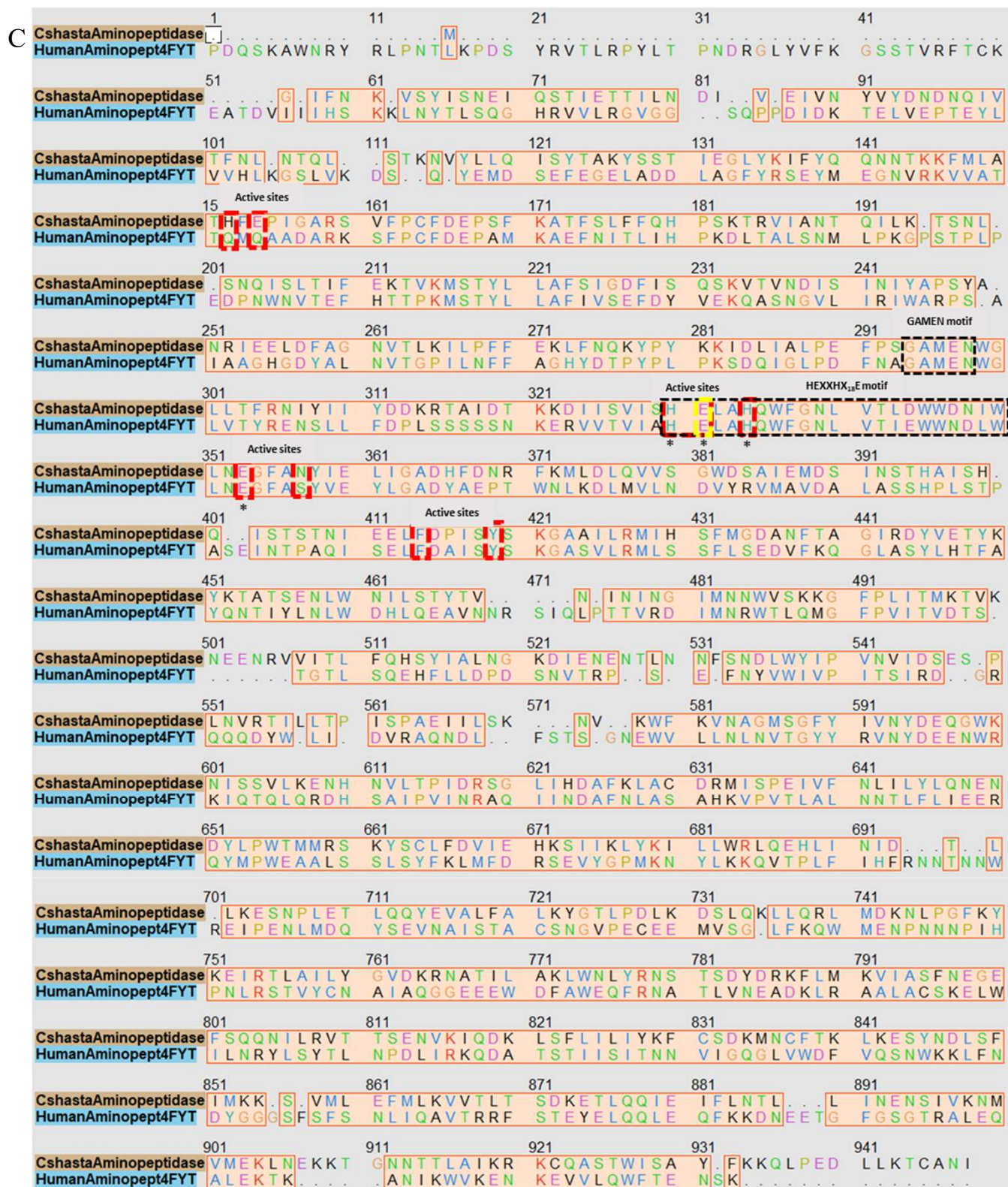
Supplementary Figure 4.- *Ceratonova shasta* IIR aminopeptidase-N. A) Stereo-chemical quality analysis: Ramachandran plot and statistics using PROCHECK; B) Superposition of *C. shasta* aminopeptidase-N and *H. sapiens* aminopeptidase-N (PDB: 4FYT) and C) Structural alignment of *C. shasta* aminopeptidase-N and *H. sapiens* aminopeptidase-N (PDB: 4FYT) using Phyre2 modelling and UCSF Chimera for visualization (in red: active sites, in yellow: Glutamyl residue required for catalytic activity, asterisks: active sites also annotated as zinc binding sites).



B



Supplementary Figure 4.- cont.



Supplementary Figure 5.- *Ceratonova shasta* IIR stefin. A) Stereo-chemical quality analysis: Ramachandran plot and statistics using PROCHECK; B) Superposition of *C. shasta* stefin and *Clonorchis sinensis* stefin (PDB: 5ZC1) and C) Structural alignment of *C. shasta* stefin and *C. sinensis* stefin (PDB: 5ZC1) using Phyre2 modelling and UCSF Chimera for visualization.

