Expression of *Plasmodium falciparum* cysteine protease 2 in *Escherichia coli* BL21 DE3 plysS: implications on purification and enzymatic activity

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Cysteine protease falcipain 2 (FP2) is a key enzyme in the establishment of a successful infection by *P. falciparum* parasite. This enzyme is involved in hemoglobin hydrolysis and also plays an important role in the further steps of parasite development. We successfully expressed FP2 in *E. coli* BL21 DE3 plysS. The inclusion bodies containing his-tagFP2 were lysed and purified by affinity chromatography. Protein samples were reduced with 10 mM DTT and further incubated for 20h at 4°C in refolding buffer. FP2 presented a gelatinase activity at pH 5.5 and kept most of its biochemical features. The effect of nitrosylation in the overall structure and protease activity were also evaluated. Apparently nitric oxide treatment increased the gelatinase activity, however this data need to be fully investigated.

Key words: malaria, *P. falciparum*, falcipain 2, cysteine protease 2 (FP2)

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