

**Enzymatic anti-oxidative and proteolytic activities in laticifers of  
*Cryptostegia grandiflora*, *Plumeria rubra* and *Euphorbia tirucalli***

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Latex is a milky fluid composed by a liquid serum holding, in suspension or in solution, a complex mixture of constituents. Over 110 latices of different plant families are known to contain at least one proteolytic enzyme. In this study, proteins extracted from laticifer cells of three plants were examined by electrophoresis, mass spectrometry (MALDI-TOF) and characterized in respect of proteolytic and chitinolytic activity and anti-oxidative enzymes by means of zymography and colorimetric assays. Acidic proteins with molecular masses between 12.5 and 74.5 KDa predominated in laticifers of *P. rubra*. This profile was not found in laticifers of *C. grandiflora* and *E. tirucalli*. The later was poor in respect of proteins. Strong anti-oxidative activity of superoxide dismutase was detected in *P. rubra* and *C. grandiflora* lattices, and to a lesser extent ascorbate peroxidase and isoforms of peroxidase were seen. Catalase was detected only in laticifer cells of *C. grandiflora*. Chitinase was the sole activity found in laticifer cells of *E. tirucalli*, but was also detected in the other latices. The strong proteolytic activity of *C. grandiflora* was shown to be shared by at least three distinct cysteine proteinases. Serine, aspartic and metalloproteinases were not detected. In laticifer cells of *P. rubra*, four proteinases were detected, including cysteine and serine types. This study reports new protein data of laticifers from plants that have been poorly investigated in this respect and contributes to the understanding of biochemical and functional aspects of laticifers in plants.

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