

A New Serine Protease Inhibitor from *Caesalpinia echinata* (Pau-Brasil) Seeds

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Leguminous contain large amounts of protease and inhibitors, which are mainly found in different longevity stages of the seeds, and play an important role on their viability. We have already purified inhibitors of different proteases (CeKI, CeEI, CeCBI) from *Caesalpinia echinata* unviable seeds, but little is known about protease inhibitors from viable seeds. So, the aim of this work was to purify a serine protease inhibitor from *C. echinata* viable seeds. After storage at -18°C for 15 days, seeds had their proteins extracted by 0.9% NaCl. The inhibitor was purified from extracts of ketonic fractionation followed by ion exchange and reverse phase chromatographies, until homogeneity. The inhibitory activity was followed on the hydrolysis of H-D-Phe-Pip-Arg-pNan by bovine pancreatic trypsin. The fractions of the major peak with inhibitory activity, from the reverse phase chromatography, were pooled and evaluated by electrophoresis in polyacrilamide gel (SDS-PAGE). A single band of molecular mass around 38 kDa was obtained. Taking into account that the purification steps of CeKI and the recently found CeKI-like trypsin inhibitor are identical, but CeKI is only 20 kDa, we suggest that, during the loss of viability, there is a degradation process of this new trypsin inhibitor resulting in CeKI with a lower molecular mass. The obtained results together with further studies will contribute to enrichment of knowledge about the physiology of *C. echinata* seeds (Supported by FAPESP, CAPES and CNPq).