

PURIFICATION AND PARCIAL CHARACTERIZATION OF AN α -AMYLASE INHIBITOR PEPTIDE ISOLATED FROM *RICINUS COMMUNIS* LEAVES

Crespo-Neto, H.A., Nascimento, V.V., and Machado, O.L.T.
LQFPP - CBB - Universidade Estadual do Norte Fluminense (UENF), Campos dos Goytacazes - RJ

Plants growing in natural habitats, are normally exposed to a broad variety of microorganisms and insect pests. Plants have evolved effective defense mechanisms to restrict the attack of microorganism and insects. Enzyme inhibitor peptide could be involved in such mechanisms. In this work, an α -amylase inhibitor peptide from *R. communis* leaves was extracted with water. This peptide was purified by reverse phase chromatography (C18 sephasil peptide column) and it's named Rc-AI 2. The α -amylase inhibitory activity was verified and the results indicate that Rc-AI 2 inhibits the α -amylase activity of insect larvae of *Zabrotes subfasciatus* and *Callosobruchus maculatus* and human salivary. The inhibition was more effective against *C. maculates* α -amylase. The amino acid composition was determined after hydrolyses with HCl 6N, 72 hours at 110°C. The peptide Rc-AI 2 was denaturated, reduced and carboxymethylated. After these treatments, the peptide was submitted to a selective acid hydrolysis. The hydrolysisate was fractionated by reverse phase chromatography (C18 column) and three peaks were detected. These were analysed by mass spectrometry. The selective inhibitory potential of Rc-AI 2 on the digestive enzymes of crop pests could be exploited for making transgenic plants with improved resistance against major pests.

Supported by: CNPq and FAPERJ