

CRYSTAL STRUCTURES OF TWO LECTINS FROM *Cymbosema roseum*
SEEDS

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Although lectins from Leguminosae family were so well studied, sequences of Diocleinae sub tribe lectins have been shown that the circular permutation of peptide chains do not occur in some legume lectins. Amino acid sequence and tridimensional structures determinations of some legume lectins can help to understand the carbohydrate affinity differences in lectins from the same subfamily and to obtain information about the evolutive origin of the lectins. In these studies, can be observed the binding property of lectins in interacting with non-protein amino acids and the existence of lectins with chitinase activity, both of them related to plant defence mechanisms against pathogens. This work shows structural features of two lectins purified from seeds of *Cymbosema roseum*. The mannose- (CRL) and lactose- (CRLII) specific lectins present distinct primary, tertiary and quaternary structures. The overall structures of native CRLI and CRLII have been refined at 1.7 Å and 2.5 Å resolution, respectively. The different binding properties of these lectins reveals that even being isolated from the same plant source they developed different ways to response against pathogens. CRLI even can interact with a non-protein amino acid related to this response and the CRLII assemble suggests a possible new type of quaternary structure in this group of proteins.

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