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Physico-chemical characterization and partial sequence of a lectin from *Canavalia bonariensis* Lindl seeds

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Lectins are (glycol) proteins that bind specifically and reversibly to carbohydrates. These proteins, in particular those from plant, are important tools in glycobiochemistry and glycobiology. *Canavalia bonariensis* Lindl is a species of Leguminosae family, Papilionoideae subfamily, tribe Phaseoleae, subtribe Diocleinae, native of the southern region of the country. The objective of this work was to purify a lectin from *C. bonariensis* (CaBo) seeds through affinity chromatographic. The process of purification of CaBo (*Canavalia bonariensis* Lectin) was monitored by SDS-PAGE and hemagglutinating activity and showed that the purified lectin is characterized by an electrophoretic profile consists of a higher band with approximately 26 kDa, and two bottom bands with apparent molecular mass of 14 and 12 kDa. The analysis by mass spectrometry indicated that CaBo has a chain with molecular mass of 25,512 kDa and and two subunits (β and γ chains) with molecular mass of 12,999 Da and 12,537 Da, respectively. CaBo also had its primary sequence partially determined by tandem mass spectrometry, obtaining 61% of the total sequence of the protein. CaBo was tested for the thermostability of their hemagglutinating activity after incubation for one hour at different temperatures (40° to 80° C), losing activity only at 80° C after one hour. Regarding its stability at different pH (4.0 to 10.0), CaBo was stable in a pH range between 7.0 and 9.0. The CaBo activity was also affected after serial dilution in the presence of the chelating agent EDTA and it was recovered significantly after addition of $CaCl_2$ and $MnCl_2$ 0,005 mol/L, proving to be dependent of divalent metal cations.

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