Stability of Recombinant Lectin *Cratylia mollis* (rCramoll) Facing Mechanical Stirring and Ultrasound

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Lectins are proteins or glycoproteins able to bind reversibly to carbohydrates without altering the covalent structure of any of the recognized ligands. *Cratylia mollis* (camaratu bean – Fabaceae family) is a native leguminous forage from the Semiarid Region of the Northeast of Brazil. Several studies have demonstrated its biological activity with immunomodulatory profile, characterization of human cancerous tissues, mitogenic activity on human lymphocytes and antitumor activity. Aiming to obtain large amounts of CRAMOLL \(^1\), without any seasonal interference, was recently synthesized the recombinant protein rCramoll. Liposomes are spherical nanoparticles composed of one or more phospholipid bilayers enclosing an aqueous compartment and have emerged as a promising delivery system of drugs. The encapsulation of pCra produced a decrease in its tissue toxicity and improved its antitumor activity. A preliminary assay was performed to ascertain the effect of two steps for formulation of liposomes, ultrasound and mechanical agitation on rCra–HA activity using glutaraldehyde-treated rabbit erythrocytes. Cra in solution (5mL- 150 µg/mL) was submitted to continuous mode ultrasonication using an ultrasound probe (Vibra Cell, BRASON, USA) operating at 200W, 40 Hz and 4 °C. Samples of Cra solution (5mL- 150 µg/mL) were submitted to mechanical agitation using a shaker (Polytest® 20 Bioblock Scientific, France) operating at 180 strokes per min at 37 °C for 24 or 48 h. After these, hemagglutinating activity was performed. The samples submitted for sonication at 100s and 250s didn't showed alterations of rCra–HA activity 256\(^1\), however, above 300s were detected alterations rCra–HA activity 128\(^1\). The rCra–HA activity was altered at 48 h of mechanical agitation for 128\(^1\). This results is in agreement with found at Andrade, 2004 for pCramoll. This study showed that rCramoll offers the same stability against agitation and ultrasound as pCramoll

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