Effect of the lectin from the venom of Bothrops jararacussu (BjcuL) on the activation of mice peritoneal macrophages

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Lectins from the venom of Bothrops snakes belong to the C-type family. The lectin of *B. jararacussu* (BjcuL) can adhere to extracellular matrix proteins and induce the rolling of leukocytes. Previous studies suggest that its role during envenoming is related to local effects, like edema and increament of the vascular permeability. The present work aim to investigate the activity of BjcuL as an immunomediator for peritoneal murine macrophages. BjcuL was obtained by affinity chromatography using a agarose D-galactose column. For adhesion to macrophages surface these were fastened in glass slides and the biotinylated lectin was then applied, following estreptoavidin addition. The montage was visualized in fluorescence microscopy. For the assays of cellular activation, macrophages collected from mice peritoneal cavity were assayed in different lectin concentrations and the production of NO and phagocytosis activity were measured. Cellular viability determination followed the MTT test. Purified lectin adhered to macrophages (5 to 70 µg/ml) with reduction of 70% of adhesion in the presence of its specific ligand (lactose 0,2 M). In concentrations up to 10 µg/ml it did not reduce the cellular viability when incubated for 24 and 48h. In higher doses the viability was reduced by 15%. The production of NO by cells stimulated with LPS (2 µg/ml) was of 85 and 38 µM of NO for 24 and 48h incubation, respectively, whereas for the control group the production was approx. 13 µM. Cells incubated with doses up to 10 µg/ml of lectin + LPS (2 µg/ml) showed no significant difference when compared to LPS control group. The cells phagocytosis capacity was not changed by BjcuL in lower concentrations, when incubated by 24h, but there was a decrease of approx. 60% in activity for the concentration of 10 µg/ml. On the other hand, for a incubation of 48h, the activity increases more than 100% in lower dose (0,1 µg/ml), but decreases by 60% in the higher concentration (10 µg/ml) . The results showed that when assayed in vitro, BjcuL was able to stimulate the phagocytosis activity, but have no effect on the production of NO by mice peritoneal macrophages.

Keywords: C-type lectins; galactoside-binding; macrophage; NO production; phagocytosis.

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