ROS levels, Calcium Production and Interleukin Expression on Immune Spleen Cells Treated with Cramoll 1,4 Lectin

Melo, C.M.L.[1,3], Paim, B.A.[2], Zecchin, K.G.[2], Morari, J.[2], Chiaratti, M.R.[2], Lins, G.T.N.[3], Velloso, L.A.[2], Vercesi, A.E.[2], Correia, M.T.S.[1], Coelho, L.C.B.B.[1]

[1]Departamento de Bioquímica/UFPE, Pernambuco, Brazil.
[2]Laboratório de Bioenergética, Faculdade de Ciências Médicas/UNICAMP, São Paulo, Brazil.
[3]Centro de Pesquisas Aggeu Magalhães – CpqAM/UFPE, Pernambuco, Brazil.

Cramoll 1,4 is a legume lectin from *Cratylia mollis* seeds with wound healing and lymphocyte mitogenic activities. In this work we investigated *in vivo* lectin stimulatory effects in rat immune spleen cells. The animals (nine-week-old, female, albino Wistar rats, *Rattus norvegicus*) were treated with an intraperitoneal dose of Cramoll 1,4 (235 µg/ml), seven days before the spleen lymphocyte isolation. Following, intracellular reactive oxygen species (ROS) levels and cytosolic free calcium production were investigated. Cell activity and integrity were evaluated through interleukin inflammatory concentrations and cellular death. The isolated rat spleen lymphocytes showed that the treatment with Cramoll 1,4 promoted an increase in intracellular Ca^{2+} concentrations when compared with controls; ROS production and Ca^{2+} levels were elevated. The analyzed cells maintained intact morphology and did not show necrosis or apoptosis. The inflammatory interleukins investigated were interleukin-1ß, interleukin-6 and interleukin-10. The spleen lymphocytes of treated rats revealed higher production of interleukins in relation to control animals; however this factor was statistically significant only for interleukin-1ß. In conclusion, this preliminary study indicates that Cramoll 1,4 promoted spleen lymphocyte activation through the increase of intracellular ROS levels, cytosolic Ca^{2+} and pro-inflammatory interleukins production without apparent cell morphology damage.

Key-words: ROS, Calcium, Interleukin, Cramoll 1,4, Lectin.
Supported by: CAPES, CNPq, PRONEX/FACEPE, *Casadinho*/CNPq.