

STUDIES OF POLYBIOSIDE, A GLUCOSIDE TOXIN, ON THE CENTRAL NERVOUS SYSTEM OF MALE WISTAR RATS

Saidemberg, D. M.¹, Salamoni, S. D.², Cesar-Tognoli L. M. M.¹, da Costa, J. C.², Palma, M. S.¹ (saidem@rc.unesp.br)

¹Dept. Biology, CEIS, Lab. Structural Biology & Zoochemistry, IBRC-UNESP, Rio Claro, SP, ²Neurosciences Laboratory, IBR - PUCRS, Porto Alegre, RS.

Considerable effort has been done towards isolation and identification of compounds from neuroactive secretions of arthropods, resulting in the discovery of many peptides and small molecules presenting a wide range of pharmacological effects on synaptic transmission, including blocking action on ions channels and on their receptors. Thus, these neuroactive compounds may become very useful tools in neurobiology and development of neuroprotective agents for different neurological disorders. Wasps venoms have been bioprospected in our workgroup for the search of neuroprotective agents. Recently, an isolated compound named Polybioside, derived from the venom of the social wasp *Polybia paulista*, was assayed through *icv* injection in the brain of male Wistar rats and analysis of *c-Fos* protein expression, followed by double labeling with neuronal markers such as GluR2/3, NMDA-R1, Tyrosine-Hydroxylase and Orexin fluorescent anti-bodies. Polybioside was neuroactive in important brain areas, such as hippocampus and motor cortex. Electrophysiological studies with brain slices preparations of the hippocampal CA1 region, resulted in a potent blocking of the glutamatergic NMDA-dependent receptors. In addition to this, Polybioside also blocked epileptic crisis induced *in vitro* by the absence of magnesium-ion.

Keywords: insect venom, *c-Fos* protein expression, double labeling studies, social wasps.

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