

$^{45}\text{Ca}^{2+}$ INFLUX IN RAT BRAIN: EFFECT OF DIORGANYLCHALCOGENIDES
COMPOUNDS

Pinheiro, F.V.¹, Wofchuk, S.², Rocha, J.B.T.³ Moretto, M.B.¹.¹Departamento de Análises Clínicas e Toxicológicas, Centro de Ciências da Saúde, Universidade Federal de Santa Maria – Santa Maria, RS, Brasil ²Departamento de Bioquímica, Instituto de Ciências Básicas da Saúde, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brasil ³Departamento de Química, Centro de Ciências Naturais e Exatas, Universidade Federal de Santa Maria, Santa Maria, RS, Brasil. Calcium ions are critically important in many functions of the nervous system from neurotransmitter release to intracellular signal transduction. Organochalcogen compounds have been described to possess glutathione peroxidase (GSH-px)-mimetic activity, which, like the native enzyme, rely on the redox cycling of selenium or tellurium moiety of the compounds. The main purpose of the present study was to investigate the effects of diphenyl ditelluride, diphenyl diselenide and ebselen on calcium influx into brain hippocampal slices *“in vitro”*. Hippocampal slices were incubated with $^{45}\text{Ca}^{2+}$ as described by Ishida et al., 1982, with modifications. The data showed that all compounds tested significantly inhibited calcium influx in cerebral hippocampal slices of rat. The release of neurotransmitters and consecutive Ca^{2+} influx and intracellular Ca^{2+} mobilization is known to have direct toxic effects on the cell metabolism. This present results may provide an effective target for pharmacological or neurotoxicant interference, especially to organochalcogens that are important intermediates and useful reagents in organic synthesis. This work was supported by FLEX. Key Words: slices – calcium uptake – organotellurium – organoselenium.