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A preliminary study of the effect of *Rubus* sp. extracts on the excitatory and inhibitory amino acids levels in hippocampus and cerebral cortex in rats

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Research has shown that fruit consumption help lower the risk of neurological disease, ischemic stroke, diabetes, cancers and metabolic syndrome. With growing concerns regarding health and growing markets of functional food worldwide, some specialty *Rubus* sp. cultivars are being developed in Brazil. This way considering the relevance of the biochemical and pharmacological activities showed by these fruits, our objective was to conduct the evaluation of chronic treatment with these extracts on the excitatory and inhibitory amino acids levels in hippocampus and cortex in rodents. Identification and quantitation of each compound was based on retention time and UV spectra in HPLC-DAD. For cyanidin3 glucoside extraction, the extracts were separated on an analytical C-18 column (MPLC). After the treatment the animals were sacrificed by decapitation (3.2 mg/kg/day/oral/30 days). Hippocampus and cortex were dissected and analyzed according to the methodology previously described. We found that, animals submitted to the treatment with total extract presented an increase of glutamate levels. However significant decrease on the glutamate levels was observed in both structures of animals treated with cyanidin3 glucoside isolated. The results suggest that both extracts presents effects on the central nervous system, since the treatment caused alterations on the amino acids levels in the hippocampus and cerebral cortex. Based on these results, the evaluation of phyto compounds from blackberry may provide useful information for food processing because of their potential to serve as nutraceutical and/or functional applications.

Biography

Maria Rosana Ramirez received her M Sc in Biological Sciences: Biochemistry and PhD in Pharmaceutical Sciences from the University of Rio Grande do Sul, PoA, Brazil. She did a Postdoctoral work in the same university, studying the biological activities of naturals extracts. Currently, she is a staff scientist in the laboratory of Nutrigenomics and Adjoint Investigator of the Argentinean Council of Investigation (CONICET-CITER-UNER). Additionally, she serves as Professor in the Department of Food Science at the National University of Entre Rios, Argentine. Her main research interest is the role of nutrients in health and disease, in particular its effects at the cellular and molecular level.

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