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Wnt/β-catenin pathway in fibromyalgia: role of Hidrox

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Fibromyalgia (FM) is mainly characterized by symptoms of chronic widespread pain and comorbidities such as depression. Although these symptoms cause a notable impact on the patient's quality of life, the etiology and pathophysiology underlying this disease remain not fully understood. WNT/β-catenin signaling pathway seems to be involved in central sensitization and different pain states. The objective of this study was to investigate the beneficial effects of a new compound called Hidrox® (HD), containing 40–50% hydroxytyrosol, in counteracting the pain associated with FM. FM was induced in rats by subcutaneous injections of reserpine (1 mg/kg) for three consecutive days. Later, animals were administered orally with HD (10mg/kg) for seven days. Reserpine injections induced WNT/β-catenin pathway activation, release of pro-inflammatory mediators as well as a significant increase of oxidative stress. Daily treatment with HD was able to modulate WNT/β-catenin and Nrf2 pathways and consequently attenuate the behavioural deficits and microglia activation induced by reserpine injection. These results indicate that nutritional consumption of HD can be considered as a new therapeutic approach for human FM.

Keywords: fibromyalgia, pain, WNT/β-catenin pathway, Nrf2 pathway

Biography:

Rosalba Siracusa is a Senior researcher in Clinical Biochemistry and Clinical Molecular Biology; Department of Chemical, Biological, Pharmaceutical and Environmental Sciences, University of Messina. Rosalba Siracusa is PhD in Applied Biology and Experimental Medicine at the University of Messina. She has a Specialization in Clinical Pathology and Clinical Biochemistry. He graduated in Biology at the University of Messina in 2013. She works at the University of Messina from 2014. Dr. Siracusa has collaborated with more national and international experts. She has completed her "Visiting Scientist" at Beth Israel Deaconess Medical Center/Harvard Medical School, Boston, MA, USA. She has published more than 100 articles in reputed journals on the biochemical evaluation of food science and nutrition.

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