"EFFECTS OF FUCOIDAN FROM BROWN SEAWEED IN SEIZURES INDUCED BY PILOCARPINE IN MICE"

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INTRODUCTION: Epilepsy is the most common brain disorder in the general population, affecting about 1% of world population. The seizure can cause neuronal damage, including death of neurons and oxidative stress is one of the pathophysiological mechanisms involved in this process. Fucoidan is a sulfated polysaccharide extracted from brown seaweeds, which possesses a wide variety of biological activities including potent antioxidative effects. OBJECTIVE: The aim of this work is to evaluate the antioxidant effects of fucoidan in the seizure induced by pilocarpine in mice. METHODS: The animals (adult male Swiss mice, 20-30g) were treated with fucoidan (7.5, 15 and 30 mg / kg, ip) or saline - 0.9% NaCl ip for seven days. 60 minutes after the last injection of vehicle or fucoidan, pilocarpine was administered (400 mg / kg, ip.), after the animals were subjected to behavioral tests and then sacrificed and their brains dissected for neurochemical analysis performance. RESULTS: Fucoidan (FU) administration increased the latency of seizures [FU 7.5: 643.8±21.67; FU 15: 636.8±27.26]; [FU 30: 800.0±50.70]; [CONTP400: 618.7±38.26] and latency of deaths [FU 7.5: 783.8±9.583; FU 15: 821.2±48.79; FU 30: 956.4±69.79]; [CONTP400: 462.0±36.56], at all doses tested when compared to control. There was an increase of nitrite/nitrate concentration in the hippocampus of animals treated with pilocarpine, this effect was partially reversed by pretreatment with fucoidan [CONTP400= 1.530±0.07544; FU7.5= 1.054±0.2007; FU15= 0.7216±0.07137; FU30= 0.1308±0.04859]. CONCLUSION: The results of this study suggest that fucoidan has antioxidant activity and presented possible neuroprotective effect against neuronal damage in the model of pilocarpine-induced seizures in mice.

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Keywords: Fucoidan sulfated; antioxidant; seizure