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KEFIR: CARACTERIZATION AND ANTI-INFLAMATORY ACTIVITY OF CARBOHYDRATE PRODUCED FROM AQUEOUS FERMENTATION

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Kefir is an association of microrganisms mostly grown in milk, with known probiotic activities arised from its soured suspensions. Aqueous media are also able to growth kefir but little is known about probiotic properties of its fermented products. This work aimed to evaluate some probiotic properties of a carbohydrate fraction isolated from sugary kefir (KSC). Some kefir grains were cultivated in brown sugar. Anti-inflammatory activity of the isolated fraction of carbohydrated was tested both in vitro (cellular respirometry and macrophage culture) as in vivo (rat paw edema and cicatrizing test and cicatrizing activity). Statistical analysis were calculated by the application of an analysis of variance (ANOVA) followed by the Newman-Keuls test, P–values less than 0.05 ($p < 0.05$) were considered significant. The results indicated no significant difference for oxygen uptake or macrophage culture between control and test groups. Rat paw edema, however, showed a significant inhibitory activity of 30 ± 4 % and 54 ± 8 % ($p>0,001$) for carrageenan and dextran, respectively. Animals treated with KSC cream also presented smaller trauma after treatments as compared to the negative control group ($p<0.05$). In the present study the carbohydrate fraction isolated from sugary kefir demonstrated significant anti-inflammatory properties probably derived from 5-HT receptor and arachidonic acid pathways. This seems to be required a physiological response in whole tissues or in specific surface receptors, since no activity was found in oxygen uptake and macrophage culture incubated with KSC. The KSC ointment also revealed anti-inflammatory properties similar to those prepared from whole grains, although the first formulation can be though as having an improved cell-free stability.

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