Extraction of polysaccharides by autohydrolysis of spent coffee grounds and evaluation of their antioxidant activity

The extraction of polysaccharides by autohydrolysis of spent coffee grounds (SCG) was studied. Experimental assays were performed using different temperatures (160–200 °C), liquid/solid ratios (5–15 ml water/g SCG) and extraction times (10–50 min) in order to determine the conditions that maximize the extraction of polysaccharides with high antioxidant activity. Autohydrolysis was demonstrated to be an efficient technique to recover antioxidant polysaccharides from SCG. The best process conditions consisted in using 15 ml water/g SCG, during 10 min at 160 °C. The polysaccharides obtained under these conditions were mainly in the form of galactomannans and arabinogalactans. They presented high antioxidant activity (assessed by four different methods), were thermostable in a large range of temperature, and had a typical carbohydrate pattern, being of interest for industrial applications, mainly in the food area.

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