Purification of cress seed (Lepidium sativum) gum: Physicochemical characterization and functional properties - DTU Orbit (08/11/2017)

Purification of cress seed (*Lepidium sativum*) gum: Physicochemical characterization and functional properties

The aim of the present study was to investigate the effects of different purification methods (ethanol, isopropanol and ethanol-isopropanol) on the physicochemical and functional characteristics of cress seed gum. Sugar composition and molecular weight of the samples varied significantly. All the purification methods reduced ash and protein content and molecular weight of cress seed gum. The main decomposition of the purified samples started above 200º C and initial decomposition temperature of the crude gum was 190.21º C. DSC thermograms of the purified gums showed two exothermic events at 257.81-261.95 ºC and 302.46-311.57 ºC. Crude gum displayed an exothermic peak at 259.42º C. Sample I (purified using isopropanol) imparted the best surface activity among the purified samples as it had the highest protein and uronic acid contents and the lowest Mw. All the purification methods could improve emulsifying properties of cress seed gum and there was no significant difference among the purified samples. Crude gum showed the lowest foaming properties, while samples I and E (purified using ethanol) showed the highest foaming capacity and foam stability, respectively. (C) 2015 Elsevier Ltd. All rights reserved.

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