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Antioxidant and chelating activity of Jatropha curcas L. protein hydrolysates

Santiago Gallegos-Tintore¹, Cristina Torres-Fuentes², Javier Solorza-Feria³, Manuel Alaiz², Julio Giron-Calle², Alma Leticia Martinez-Ayala³, Luis Chel-Guerrero¹ and Javier Vioque²

¹Autonomous University of Yucatan, Mexico ²Instituto de la Grasa, Spain ³National Polytechnic Institute, Mexico

Jatropha curcas L., a member of the *Euphorbiaceae* family, is a drought resistant small tree of significant economic importance because of its various industrial and medicinal uses. The seeds are a good source of oil that can be used for diesel production. The defatted seed meal is rich in protein, but usually it cannot be used for direct feeding due to the presence of toxic phorbol esters. However, non toxic genotypes exist solely in Mexico. Because of its high content of aromatic amino acids; *J. curcas* proteins could be an important source of functional foods like antioxidants. New sources of antioxidants that inhibit oxidation both in the human body and in foods are of interest. The aim of this work was to study the antioxidant and metal chelating potential of *J. curcas* protein hydrolysates obtained from a non toxic genotype grown in Mexico.

The antioxidant and metal chelating activities in *Jatropha curcas* L. protein hydrolysates have been determined. The hydrolysates were produced by treatment of protein isolate from non toxic seeds with pepsin and pancreatin and then, were characterized by fast protein liquid chromatography (FPLC). The hydrolysates inhibited the degradation of β -carotene and exhibited free radical scavenging activity, and copper and iron chelating activity. The lower molecular weight peptidic fractions from FPLC had stronger antioxidant and metal chelating activities compared with the hydrolysates, this correlated with a higher content in antioxidant and chelating amino acids.

Biography

Santiago Gallegos-Tintore has completed his PhD at the age of 36 years from National Polytechnic Institute, Mexico. He has published around than 10 papers in indexed journals. He is currently working as a Research Professor at the Autonomous University of Yucatan, Mexico.