Journal of Chemical, Biological and Physical Sciences

An International Peer Review E-3 Journal of Sciences Available online atwww.jcbsc.org

Section A: Food Biotechnology

CODEN (USA): JCBPAT

Research abstract

Enzymatic Hydrolysates of Proteins Isolated From Flour Either Grain or Plant Fraction of Amaranth.

Alma X. Avila Alejandre¹, María de Jesús García Gómez¹.

¹ Universidad del Papaloapan, Departamento de Biotecnología y Alimentos. México.

Abstract: The bioactive peptides (BP) have different biological activities such, antihypertensive, antioxidant, etc. In order to research if the amaranth plants, discarded after seed harvest, could be an alternative source of BP, the protein of vegetal fraction of amaranth (VFA) or grain were isolated using isoelectric precipitation, then proteins were hydrolized with Flavourzyme® and the DH% was evaluated and compared between both proteins substrate.

The most proteins in amaranth grain are albumin and globulins. The SDS-PAGE showed a band, probably albumin 2 present in the FVA too. Under conditions carried out in this work the %DH of VFA proteins was 50% higher than grain proteins and the %DH values was around $20.2 \pm 1.3\%$ after 150 min. In previous reports %DH values around 20% was enough to obtain bioactive peptides. For example, the albumin and globulin hydrolisates from amaranth grain (DH values 20% and 8%, respectively, at 180 min of reaction) or the protein of velvet bean (24.78% after 90 min) showed in both cases ACE-I inhibitory activity. Based on the above mentioned, the VFA proteins could be an appropriate source material for obtaining bioactive peptides

Keywords: Amaranth, hydrolysis, peptides

Corresponding author: MJ García-Gómez * bf07_06@hotmail.com