

JOINT EVENT

20th Global Congress on Biotechnology

&

3rd International Conference on Enzymology and Molecular Biology

March 05-07, 2018 London, UK

Enzymatic production of bioactive peptides from raps flour**Ferrero Romina Lis**

Pontificia Universidad Católica de Valparaíso, Chile

The biologically active peptides may exert systemic effects, such as antihypertensive, antioxidant, antiproliferative, among others. The defatted flour of raps, a byproduct of rape oil, has between 30-40% of proteins, being an interesting source for the production of bioactive peptides. Given this, our goal is to obtain peptides with different degrees of hydrolysis, in order to study their ability to inhibit the proliferation of MCF-7 cells (breast cancer) as part of their biological properties. Protein from rape flour was recovered by alkaline solubilization and isoelectric precipitation. Afterwards, the peptides were obtained by enzymatic hydrolysis with Alcalase® 2.4 L (50 °C), analyzing two processes, one without pH adjustment (starting at pH 10) and another controlling the pH at 8 (optimum pH of the enzyme), by means of a pH-stat, at enzyme/substrate ratios of 3 and 5%, for a time of 24 h. The degree of hydrolysis was measured by the method of orthophthalaldehyde (OPA) and antiproliferative activity by the resazurin method. The hydrolysis kinetics obtained, showed that by controlling the pH at 8 throughout the reaction, the enzymatic rate is higher and thus the degree of hydrolysis, reaches up to 22% at 20 hours when using 3% of enzyme. With regards to antiproliferative activity, it is possible to determine an inhibition of MCF-7 cell proliferation of up to 80% when a 10 mg/L peptic extract is used, demonstrating the effectiveness of the enzymatic treatment with Alcalase® 2.4 L to obtain peptides with potential anticancer activity.

romi.ferrero@hotmail.com