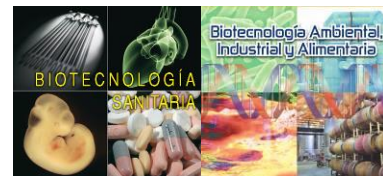*Poster*

Validación de matrices alimentarias mediante ELISA Sándwich para el estudio de los parámetros analíticos de un kit de análisis de gluten en comidas.

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ABSTRACT

Motivation: Celiac disease (CD) is an autoimmune disease characterized by chronic inflammation in the epithelial layer of the small bowel caused by exposure to gliadin, a protein of vegetal origin that resist to degradation by gastric secretion, intestinal and pancreatic which produces an increased permeability in epithelial barrier of the small bowel allowing the entry of these peptides through the intestinal barrier. Nowadays it is known as a process with a high worldwide prevalence, affecting approximately 1-2% of the general population. Although it has a well-defined genetic basis, it can appear at any age of life, both children and adults, with 20% of cases diagnosed in individuals over 60 years. Besides the high rate, of currently affected, there are no drug treatments to fight this disease, the only solution is to follow a gluten-free diet lifelong, which is based on eliminating foods whose composition, preparation or flavoring containing flour from cereals that contain gluten, mainly wheat, oats and rye. Keep in mind that certain foods can not contain gluten directly, it is possible that during the production process could have contact with it, which would make them unfit for consumption.

This kit represents a very useful tool for the detection of gluten in food by the technique known as ELISA, because it has a high sensitivity thanks to the high affinity of the antibodies used for detection of antigen, in this case, gliadin. This study also evaluated the specificity of this kit, making a study about the cases of cross-contamination in certain foods, that could have traces of this toxic protein.

Methods: The validation is performed by an immunoadsorption technique called ELISA Sandwic, for which we use five gluten-free samples of five different food matrixs, to which were added known amounts of pure gliadin that serve as reference values for this study.

The parameters that we will use to demonstrate that the method is valid for the intended purpose are: accuracy, precision repeatability and reproducibility, linearity, detection and quantification limits (precision), robustness, especificty and uncertainty.

Results: This project is in a phase of global evaluation of the kit, in which are being carried out relevant tests with the different food matrices selected to analyze. Nowadays, It is premature to draw conclusions about the validity of this kit to be marketed.h

REFERENCES

Morón B., et al. (2008)Toward the Assesment of Food Toxicity for Celiac Patients: Characterization of Monoclonal Antibodies to a Main Immunogenic Gluten Peptide; PLoS ONE 3:e2294.3.3

Denery-Papini S., et al. (2000) . Extraction and inmmunochemical measurement of raw and heated gluten in food. 15th Meeting Working Group on Prolamin analysis and toxicity,Meran, Italy.139-142or.