Detection of Non-Halal Plasma Transglutaminase in Selected Surimi-Based Products by using Sandwich ELISA Method

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The usage of non-halal plasma transglutaminase to improve the gelling properties of surimi is prohibited for Muslim consumers. The objective of this study is to detect non-halal plasma transglutaminase in surimi products. A total of 12 samples were tested using DEAE, Unosphere Q and BioScale Macroprep High Q columns and further confirmed by Sandwich ELISA method. Three different monoclonal antibody (MAbs) species which were bovine, chicken and porcine were used to observe the reaction against the samples. The reactivity of the antibody against the antigen was defined in a certain range of cutoff value that is very strong, strong, moderate, weak and negative. By using the MAbs of the different species, the result showed S1, S2 and S3 did not contain transglutaminase from bovine while the other samples did. Six samples which were S1, S2, S3, S8, S11 and S12 selected in the ELISA procedure had a very strong reaction with transglutaminase from porcine species. For MAbs of chicken species, S12 has a weak reactivity while other samples showed very strong and strong reaction of transglutaminase. The sandwich ELISA can be a useful method to detect the presence of transglutaminase in surimi-based products, which is derived from blood of different species of mammalian animals. Further study should be done to optimize the specificity of antibody used in the confirmation of TGase in surimi. © IDOSI Publications, 2012.