

Monoclonal antibody-based enzyme immunoassay for detection of porcine plasma in fish surimi

ABSTRACT

Detection of porcine plasma using indirect ELISA was developed using mAb B4E1 for the prevention of their usage in human food that creates religious and health conflicts. The immunoassay has a CV<20% and did not cross-react to other meat and non-meat proteins. The sensitivity of the assay is 0.25% (w/w) of porcine plasma in spiked raw and cooked fish surimi. The assay did not produce a false positive result for any of the commercial fish surimi tested that were not contain porcine plasma. Determination of a 60-kDa antigenic protein of porcine blood using Western Blot confirmed its presence in the plasma fraction of the porcine blood. Further proteomic analysis involving liquid chromatography-tandem mass spectrometry (LC-MS/MS) revealed the 60-kDa protein to be porcine serum albumin.

Keyword: Porcine plasma; ELISA; Monoclonal antibody; Antigenic protein; Fish surimi