

Immunochemical Analysis for Mycotoxins

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Summary

To minimize interference from co-extracted compounds from food and feed samples in which mycotoxins occur, the conventional methods for chemical analysis of mycotoxins consume large amounts of time and solvents, need several cleanup steps, and sometimes require practical experience. From the viewpoint of earth environment protection and operator safety, toxic and carcinogenic solvents such as chloroform and benzene used for mycotoxin analysis should be avoided. Under these circumstances, specific antibodies have been developed against several mycotoxins such as aflatoxins, ochratoxin A, zearalenone, T-2 toxin, deoxynivalenol and fumonisins since the ending of seventies using these antibodies, simple and rapid methods of immunochemical analysis for mycotoxins such as enzyme-linked immunosorbent assay (ELISA) and immunoaffinity column (IAC) chromatography have been developed. The major advantages of these immunochemical methods are their high specificity, simplicity, rapidity and minimal use of toxic solvents. This review focuses on recent immunochemical methods for mycotoxins, in particular ELISA, enzyme linked immunofiltration assays (immunoconcentration assay), lateral flow assays (immunochromatography assay), and IAC.