

HORIBA

Explore the future

Immunoaffinity column to
clean up aflatoxins

SmartColumn AFLAKING™

Newly developed antibody enables efficient aflatoxin cleanups

Japan-
first

High
tolerance of
organic
solvents

Simultaneous
cleanups of
aflatoxins B1,
B2, G1, and G2

Added
cleanups of
aflatoxin M1



AFLAKING's excellent tolerance of organic solvents enables the following features.

- Aflatoxins can be cleaned up using only a small amount of extract.
- A significantly shorter preparation time increases analytical efficiency.
- Spices can now be analyzed easily and accurately without the previous difficulties.

Aflatoxins B1, B2, G1, G2, and M1 can all be cleaned up.

- The antibody used in AFLAKING possesses equivalent reactivity against aflatoxins B1, B2, G1, G2, and M1, allowing AFLAKING to be used in the cleanup of each one.

With AFLAKING, even spices can be easily and accurately cleaned up.

AFLAKING does not require high dilution, allowing quick and easy cleanups of a wide range of foodstuffs from nuts and grains to spices. With conventional immunoaffinity columns, organic solvent extracts need to be diluted to approximately 2%, resulting in sample solution turbidity and associated difficulties in the analysis of spices.

High tolerance of organic solvents enables rapid cleanups with only a small amount of sample extract.

AFLAKING offers excellent tolerance of the acetonitrile and methanol generally used to extract aflatoxins. The column provides an aflatoxin recovery rate of 80% or higher with an acetonitrile concentration of up to 20% or methanol concentration of up to 40%. This feature enables aflatoxin cleanups with lower dilution.

Cleanups can be performed simultaneously with aflatoxins B1, B2, G1, and G2.

The antibody used in AFLAKING possesses equivalent reactivity against any of aflatoxins B1, B2, G1, and G2. This feature allows all four aflatoxins to be cleaned up at the same time.

	Roast peanuts	Corn grits	Pearl barley	Paprika*	White pepper*	Chili peppers*	Turmeric*	Coriander*
B1	94	100	97	91	97	97	86	104
B2	95	98	95	89	98	98	88	115
G1	78	105	101	99	88	99	87	99
G2	85	103	98	99	86	99	88	102

Note: Recovery rate (%) following the addition of 16 ng/g of total aflatoxin * Data on spices supplied by Professor Motohiro Nishijima, Jissen Women's University, Japan.

Cleanups of aflatoxin M1 are also possible.

The antibody used in AFLAKING reacts equivalently against aflatoxin M1, enabling cleanups of this aflatoxin.

	Milk
M1	87

Note: Recovery rate (%) following the addition of 0.5 ng/g of aflatoxin M1

Specifications

Product name: AFLAKING
Model: AC01-25, AC01-50



AC01-25 (25 units)

AC01-50 (50 units)

Intended purpose: Cleanup column for the analysis of aflatoxins in foodstuffs.
Recovery rate: At least 80% when 10 ml of 18% acetonitrile solution containing 5 ng each of aflatoxin B1, B2, G1, or G2 is applied to an AFLAKING column.
At least 80% when 10 ml of 18% acetonitrile solution containing 5 ng of aflatoxin M1 is applied to an AFLAKING column.
Effective lifetime: Approximately 12 months from the date of manufacture when stored at 8°C.



●Immunoaffinity column (IAC)

An IAC is a column with an antibody immobilized in gel designed for cleanups. An IAC offers outstanding selectivity because it uses the property of the antibody to bond to a specific antigen. It is also able to efficiently recover the target substance, resulting in excellent cleanup capability.

●Aflatoxin analysis

An aflatoxin is a highly virulent mycotoxin that is frequently detected in a wide variety of foodstuffs and animal feeds. Although a large number of aflatoxin-related compounds have been discovered to date, it is aflatoxins B1, B2, G1, G2, and M1 that have presented problems in food safety. Aflatoxin B1, in particular, is known to be extremely carcinogenic when produced in nature.



The HORIBA Group adopts IMS (Integrated Management System) which integrates Quality Management System ISO9001, Environmental Management System ISO14001, and Occupational Health and Safety Management System OHSAS18001. We have now integrated Business Continuity Management System ISO22301 in order to provide our products and services in a stable manner, even in emergencies.



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