



# MultiStar™ Immunoaffinity Columns

Item No. 10005407



**For the purification of aflatoxins, ochratoxin, zearalenone, deoxynivalenol, fumonisins, T-2 and HT-2 toxins**

## PRODUCT DESCRIPTION

The use of Immunoaffinity Columns (IAC) in the clean-up of single mycotoxins of complex food and feed extracts is well established in laboratory work. This especially applies for the determination of regulated mycotoxins, such as aflatoxins, ochratoxins, zearalenone, deoxynivalenol, fumonisins and T2-toxin.

The MultiStar™ - Immunoaffinity Column combines the high purification potential of an immunoaffinity column with the convenience of a multimycotoxin analysis, so that all the regulated mycotoxins can be determined in parallel in one single run.

Maximum levels set by European Commission /2006 are met for all commodity samples. The same IAC protocol can be used for all commodities. For baby food, a bigger aliquot of sample extract can be used in order to meet the regulatory limits set for aflatoxin M1 and ochratoxin.

## INTENDED USE

MultiStar™ - Immunoaffinity Columns are suitable for use with a wide range of commodities, including rice, muesli and chocolate.

A representative sample of the commodity to be analyzed is extracted with a mixture of methanol/acetonitrile/water. The MultiStar™ - Immunoaffinity Columns retain the mycotoxins present in the sample and separate them from the other substances present in the extract. After a short rinsing phase, the isolated mycotoxins can be eluted using a methanol/acetic acid mixture.

## WARNINGS AND PRECAUTIONS

1. Mycotoxins are highly toxic substances! Please take care and use protective measures!
2. Please decontaminate any equipment used with 4% solution of sodium hypochlorite.
3. Do not use the MultiStar™ - Immunoaffinity Column after the expiration date indicated on the label.
4. MultiStar™ - Immunoaffinity Columns are designed for single use only.
5. MultiStar™ - Immunoaffinity Columns contain sodium azide.

## RECOMMENDED SOLVENTS AND BUFFERS

Methanol/acetonitrile/water (25/25/50, v/v/v)  
PBS 10 mM - Buffer (pH 7.4)

**All solvents and buffers should be at room temperature (+20 – 28 °C).**

We recommend the use of **Biopure™ mycotoxin standards**.

## PROCEDURE

### 1) EXTRACTION

1. Grind a representative sample of the commodity.
2. Weigh out 5 g of sample into a 250 mL Erlenmeyer flask, half-pint blender jar or whirl-pak bag.
3. Add 40 mL of of methanol/acetonitrile/water (25/25/50, v/v/v) solution and close the container
4. Blend on high speed for 3 minutes or shake for 1 hour on a gyratory shaker.
5. Using a funnel, filter extract into a sample container through qualitative filter paper.



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## 2) DILUTION OF THE EXTRACTS

Dilute 0.8 mL of extract (equivalent to 0.1 g of the commodity) with 10 mL of PBS. When bigger extract volumes are analyzed, the volume of the diluting PBS should be increased so that the resulting acetonitrile and methanol concentrations do not exceed 15% in the solution to be applied on the column.

## 3) SAMPLE APPLICATION

Put the MultiStar™ - Immunoaffinity Column on an adapter. Apply the diluted extract and allow it to pass through the column using a syringe barrel as a reservoir. The flow rate should not exceed 1 – 3 mL/min, the solution usually drips independently. The column and the extract must be at room temperature. The column does not require rinsing before application of the diluted extract.

## 4) RINSE

The MultiStar™ - Immunoaffinity Column should be rinsed with 5 mL of distilled or deionized water. Remove any remaining liquid from the column by applying slight pressure to the top of the column or by applying vacuum to the bottom. Take care that the column does not dry out completely.

## 5) ELUTION

Remove the syringe barrel from the MultiStar™ - Immunoaffinity Column and place a suitable vial under the column for the collection of the eluent. For the elution of bound mycotoxins, use only HPLC grade methanol. Elute with 3 x 1 mL methanol/acetic acid (98/2, v/v). Leave the methanol on the column for a few seconds before starting elution to allow intensive contact with the gel. The flow rate of the elution solvent through the column should not exceed 1 mL/min.

After applying the third eluent portion, remove any remaining liquid from the column by applying slight pressure on top of the column or by applying vacuum to the bottom. The eluate can be evaporated to dryness and redissolved in the appropriate LC eluent.

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