

ZEASTANDARD

Product Code: P44A

Standard solution at 1,000 ng/ml for zearalenone determination.
For *in vitro* use only.

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Intended Use

The ready-to-use mycotoxin standard solution is at a concentration of 1,000 ng/ml and can be used to prepare a calibration curve for the HPLC or LC-MS/MS system, ensuring accurate determination of the toxin with minimal preparation. The standard can also be used to spike samples in order to check the extraction efficiency of the toxin from certain foods using a particular solvent, or alternatively, to spike sample extracts.

Reagents not Provided

- Distilled / Deionised Water (suitable for use with HPLC, e.g. MilliQ)
- Solvent (HPLC Grade Acetonitrile)

Hazards

Mycotoxin standards are very hazardous substances and are covered by Control of Substances Hazardous to Health (COSHH) regulations. Therefore, strict procedures apply to the handling of this material. Only laboratories equipped to handle toxic materials and solvents should perform analyses. Suitable protective clothing, including gloves, safety glasses and lab coats should be worn throughout the analysis.

Flammable solvents should be stored in an explosion-proof cabinet. Use a chemical hood and protective equipment as applicable.



Mycotoxin standards may be harmful if swallowed, inhaled or absorbed through the skin. If the standard is swallowed, wash out mouth with water. If inhaled, proceed immediately to a fresh air environment. In case of contact with skin wash the affected area with water. In serious instances seek medical attention.

A Material Safety Data Sheet is included for further information if required.

Not for Human or Drug Use

Decontamination

Prior to disposal, excess standard solutions should be treated with at least one-tenth their volume of 5 % sodium hypochlorite. Labware and contaminated waste should be immersed in 5 % sodium hypochlorite solution for 30 minutes followed by the addition of 5 % acetone for 30 minutes. Flush with copious amounts of water before disposal. After decontamination labware should be thoroughly washed. Incinerate waste if regulations permit.

Storage & Shelf Life

The standard has an expiry of 18 weeks from date of manufacture if stored at 2 - 8 °C. Store the vial in an upright position to reduce contact of the toxin with the stopper.

Calibration Curve

It is recommended to run at least a 3 - 6 point calibration curve. In constructing a suitable curve the levels of the calibration standards should bracket or include the range of expected results. The diluted standard solutions should be prepared fresh on the day of analysis and used within a 24 hour period.

To prepare a four point calibration curve:

1. Take 1.8 ml of 1,000 ng/ml zearalenone solution and add 1.2 ml of 100 % acetonitrile (equivalent to 600 ng/ml).
2. Standard 4: Take 2 ml at 600 ng/ml and add 2 ml of water (equivalent to 300 ng/ml).
3. Standard 3: Take 2 ml at 300 ng/ml and add 2 ml of 50 % acetonitrile (equivalent to 150 ng/ml).
4. Standard 2: Take 2 ml at 150 ng/ml and add 2 ml of 50 % acetonitrile (equivalent to 75 ng/ml).
5. Standard 1: Take 2 ml at 75 ng/ml and add 2 ml of 50 % acetonitrile (equivalent to 37.5 ng/ml).
6. Inject 100 µl of each standard onto the HPLC system.

Spiking Samples for Commodity Recovery Experiments

A known blank sample should be taken and the required volume of sample should be weighed out. The calculated volume of standard should then be added to the sample and left overnight in the dark. The sample should be extracted within approximately 48 hours.

$$C1 \times V1 = C2 \times V2$$

C1 Concentration of standard to be used for spiking.

V1 Volume of standard to be added to the sample.

C2 Required concentration of sample.

V2 Required volume of sample.

For example, the following method is for spiking a sample at 100 ppb zearalenone:

1. Weigh 25 g of sample into a glass flask.
2. Add 2.5 ml of 1,000 ng/ml standard solution (equivalent to 100 ng/g) and store overnight in the dark.
3. Extract the 25 g and analyse the sample as required.
4. Calculate the toxin concentration recovered from the sample. If a recovery of 90 % is obtained with a certain commodity it is possible to use a correction factor to obtain a 100 % result. Different correction factors can be used with different commodities to obtain 100 % accuracy.

Quality

RBR products are developed, manufactured, tested and dispatched under an ISO 9001 registered Quality Management System, guaranteeing a consistent product, which always meets our performance specifications. Our products have been used in many collaborative studies to develop standard European and International Methods and are widely used by key institutions, food companies and government laboratories. Customer references for RBR products are available on request.

Technical Support

RBR understand that from time to time users of our products may need assistance or advice. Therefore, we are pleased to offer the following services to our customers:

- Analysis of problem samples.
- Application notes for difficult samples.
- References from the RBR library.
- Installation and support of the KOBRA® CELL.
- Advice on detection parameters.
- Advice on preparation and handling of standards.
- Updates on legislation, sampling and other news by e-mail.
- Provision of spiked samples.

Please contact your local R-Biopharm distributor for further information.

Warranty

R-Biopharm Rhône Ltd makes no warranty of any kind, express or implied, except that all products made by R-Biopharm Rhône Ltd are made with materials of suitable quality. If any materials are defective, R-Biopharm Rhône Ltd will provide a replacement product. The user assumes all risk and liability resulting from the use of R-Biopharm Rhône Ltd products and procedures. R-Biopharm Rhône Ltd shall not be liable for any damages, including special or consequential damages, loss or expense arising directly or indirectly from the use of R-Biopharm Rhône Ltd products or procedures.

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