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Valentin Wagner, Head of RM Manufacturing

MYCOTOXINS

What you need to know

Global heating and extreme weather events, coupled with the globalization of the food and feed trade, continue to increase the possibility of mycotoxin contamination and exposure. In a striking example towards the end of 2019, several well-known brands of maize flour were removed from supermarket shelves in Kenya after a warning about unsafe levels of aflatoxins, a type of mycotoxin. What is more concerning is that maize is the country's main food staple and primary feed for livestock, so mycotoxin vulnerability has the potential to cause devastating impact. Maize has not been the only product contaminated in East Africa; milk and groundnuts have been found to be the main source of aflatoxin exposure in the region. Typically, these ingredients are mixed to create a type of porridge, which is a significant source of nutrition for infants and children.

Mycotoxins are naturally occurring secondary metabolites of fungi and are able to grow on numerous foodstuffs, such as cereals, dried fruits, nuts and spices. The growth of these molds can happen at any time during the growing, harvesting or processing of food or feed products when exposed to warm and humid conditions. Mycotoxins have been shown to be chemically stable enough to survive through typical processing methods such as freezing, brewing, and ultra heat treatment (UHT).

This not only poses a threat to the health of humans and livestock, but could also be detrimental to evolving global food markets. Cannabis, as an emerging market, is more at risk of mycotoxin contamination due to lack of regulation. Two of the primary mycotoxins associated with cannabis are aflatoxins and ochratoxins, which pose a risk to edibles and vape products. Due to the natural stability of these contaminants, they can easily withstand temperatures of 500°F (260°C) for 30 minutes, so although the temperatures vaporizers use are high, they are not high enough to destroy these molds. This means mycotoxins are easily transferred from the plant to final product, including vape liquids.

There are hundreds of different types of mycotoxins that have been identified, all of them ranging in toxicity. The type of mycotoxin and amount of exposure can cause many effects, including hepatotoxicity, or chemical-driven liver damage, genotoxicity, damage to genetic information in a cell that can potentially lead to cancer, and neurotoxicity, which is damage to the central and/or peripheral nervous systems.

Some regulatory bodies have responded to the threats mycotoxins pose through the implementation of maximum acceptable levels in food and feed. For example, in 2017, the China Food and Drug Administration (CFDA) introduced the *National Food Safety Standard for Maximum Levels of Mycotoxins in Foods,* which was outlined in GB 2761-2017. This regulation by the CFDA included amendments to previous regulations adding limits for multiple aflatoxins, deoxynivalenol, patulin and ochratoxin A.

The EU also enforces regulations that set out to ensure the testing sample is an accurate representation of the entire harvest of food and feed using a harmonized and consistent approach throughout member states. These regulations, 1881/2006 & 401/2006, apply to both domestic and imported foodstuffs. Therefore, additional checks are necessary, alongside specific documentation including a certificate of analysis and a health certificate is required to be compliant when importing these products into EU member states.

On the following pages you will find a selection of our mycotoxin products laid out to help you identify your many Dr. Ehrenstorfer product options for specific analytes. Our prepared solution standards minimise chemical handling required in the laboratory and reduce the time and effort needed to prepare your own solutions, while our native and stable isotopically labelled products (SIL) offer a range of options to suit your testing needs. This is particularly useful when you are testing against established regulatory requirements.
We have developed products across a range of formats with specific multicomponent solutions for the food and cannabis markets. Our latest and full range can always be explored on our website at **lgcstandards.com**

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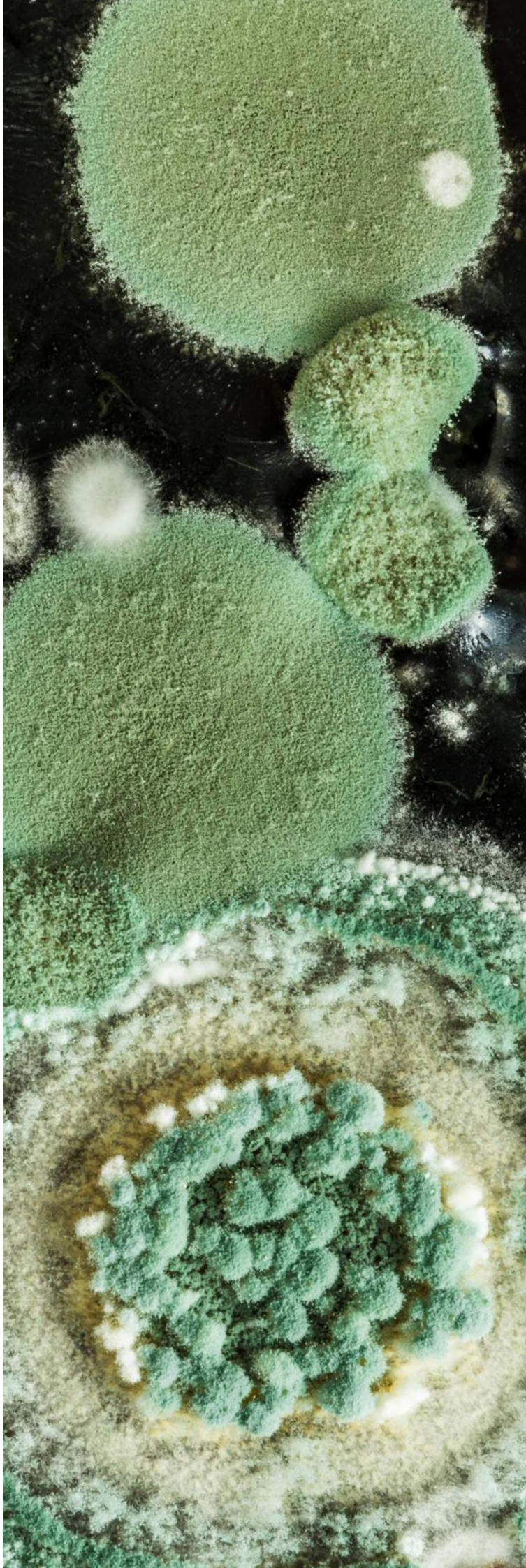

AFLATOXINS

MULTICOMPONENT SOLUTIONS

This type of mycotoxin is a poisonous carcinogen produced by specific Aspergillus molds, which can grow in soil, decomposing vegetation, hay and grains. If an aflatoxin contaminates feed that is ingested by an animal, it has the potential to pass aflatoxin transformation products into animal products such as milk, eggs, and meat.

Product codes	Product description	Pack size	Number of analytes
DRE-A30000005AL	Aflatoxin B1, B2, G1 and G2 Mixture 250 ng/mL in Acetonitrile	1 mL	4
DRE-V30000005AL		6 mL	
Analytes		**CAS number**	**Analyte concentration**
Aflatoxin B1		1162-65-8	250 ng/mL
Aflatoxin B2		7220-81-7	250 ng/mL
Aflatoxin G1		1165-39-5	250 ng/mL
Aflatoxin G2		7241-98-7	250 ng/mL

Product codes	Product description	Pack size	Number of analytes
DRE-A30000001AL	Aflatoxin B1, B2, G1 and G2 Mixture 0.5-2 µg/mL in Acetonitrile	1 mL	4
DRE-V30000001AL		5 mL	
Analytes		**CAS number**	**Analyte concentration**
Aflatoxin B1		1162-65-8	2 µg/mL
Aflatoxin B2		7220-81-7	0.5 µg/mL
Aflatoxin G1		1165-39-5	2 µg/mL
Aflatoxin G2		7241-98-7	0.5 µg/mL

Product codes	Product description	Pack size	Number of analytes
DRE-V30000006AL	Aflatoxin B1, B2, G1 and G2 Mixture 1 µg/mL in Acetonitrile	5 mL	4
Analytes		**CAS number**	**Analyte concentration**
Aflatoxin B1		1162-65-8	1 µg/mL
Aflatoxin B2		7220-81-7	1 µg/mL
Aflatoxin G1		1165-39-5	1 µg/mL
Aflatoxin G2		7241-98-7	1 µg/mL

Product codes	Product description	Pack size	Number of analytes
DRE-A30000008AL	13C Labelled Aflatoxins B1, B2, G1 and G2 Mixture 0.5 µg/mL in Acetonitrile	1.2 mL	4
Analytes		**CAS number**	**Analyte concentration**
Aflatoxin B1 (U-13C17)		1217449-45-0	0.5 µg/mL
Aflatoxin B2 (U-13C17)		1217470-98-8	0.5 µg/mL
Aflatoxin G1 (U-13C17)		1217444-07-9	0.5 µg/mL
Aflatoxin G2 (U-13C17)		1217462-49-1	0.5 µg/mL

Product codes	Product description	Pack size	Number of analytes
DRE-A50000036AL	Aflatoxin B1, B2, G1, G2 and Ochratoxin A Mixture 1 µg/mL in Acetonitrile	1 mL	5
DRE-S50000036AL		5 x 1 mL	
Analytes		**CAS number**	**Analyte concentration**
Aflatoxin B1		1162-65-8	1 µg/mL
Aflatoxin B2		7220-81-7	1 µg/mL
Aflatoxin G1		1165-39-5	1 µg/mL
Aflatoxin G2		7241-98-7	1 µg/mL
Ochratoxin A		303-47-9	1 µg/mL

Product codes	Product description	Pack size	Number of analytes
DRE-A50000098BA	Aflatoxin Mixture B1, B2, G1, G2 and Ochratoxin A 10 µg/mL in Acetonitrile:Benzene 70:30	1 mL	5
Analytes		**CAS number**	**Analyte concentration**
Aflatoxin B1		1162-65-8	10 µg/mL
Aflatoxin B2		7220-81-7	10 µg/mL
Aflatoxin G1		1165-39-5	10 µg/mL
Aflatoxin G2		7241-98-7	10 µg/mL
Ochratoxin A		303-47-9	10 µg/mL

AFLATOXINS

SINGLE COMPONENT SOLUTIONS

Product codes	Product description	Pack size	CAS number
DRE-A10047100AL-2	Aflatoxin B1 2 µg/mL in Acetonitrile	1 mL	1162-65-8
DRE-V10047100AL-2		5 mL	
DRE-A10047150AL-0.5	Aflatoxin B1 13C17 5 µg/mL in Acetonitrile	1.2 mL	1217449-45-0
DRE-A10047200AL-0.5	Aflatoxin B2 0.5 µg/mL in Acetonitrile	1 mL	7220-81-7
DRE-V10047200AL-0.5		5 mL	
DRE-A10047250AL-0.5	Aflatoxin B2 13C17 5 µg/mL in Acetonitrile	1.2 mL	1217470-98-8
DRE-A10047400AL-2	Aflatoxin G1 2 µg/mL in Acetonitrile	1 mL	1165-39-5
DRE-V10047400AL-2		5 mL	
DRE-A10047450AL-0.5	Aflatoxin G1 13C17 5 µg/mL in Acetonitrile	1.2 mL	1217444-07-9
DRE-A10047500AL-0.5	Aflatoxin G2 0.5 µg/mL in Acetonitrile	1 mL	7241-98-7
DRE-V10047500AL-0.5		5 mL	
DRE-A10047510AL-0.5	Aflatoxin G2 13C17 5 µg/mL in Acetonitrile	1.2 mL	1217462-49-1
DRE-A10047550AL-0.5	Aflatoxin M1 0.5 µg/mL in Acetonitrile	1 mL	6795-23-9
DRE-V10047550AL-0.5		5 mL	
DRE-A10047555AL-0.5	Aflatoxin M1 13C17 5 µg/mL in Acetonitrile	1.2 mL	6795-23-9
DRE-A11668522AL-100	Citrinin 100 µg/mL in Acetonitrile	1 mL	518-75-2
DRE-A11668523AL-10	Citrinin 13C13 10 µg/mL in Acetonitrile	1.2 mL	—
DRE-A16974700AL-50	Sterigmatocystin 50 µg/mL in Acetonitrile	1 mL	10048-13-2
DRE-V16974700AL-50		5 mL	
DRE-A16974710AL-25	Sterigmatocystine 13C18 25 µg/mL in Acetonitrile	1.2 mL	—

NEAT MATERIALS

Product codes	Product description	Pack size	CAS number
DRE-C10047100	Aflatoxin B1	5 mg	1162-65-8
DRE-C10047200	Aflatoxin B2	5 mg	7220-81-7
DRE-C10047400	Aflatoxin G1	5 mg	1165-39-5
DRE-C10047500	Aflatoxin G2	5 mg	7241-98-7
DRE-C16974700	Sterigmatocystin	5 mg	10048-13-2

ALTERNARIA TOXINS

NEAT MATERIALS

Alternaria are major plant pathogens, which are common allergens in humans that can cause hay fever or hypersensitivity reactions with the potential to lead to asthma. The species also produce mycotoxins which have been shown to be mutagenic and toxic, contaminating mainly fruits and vegetables, causing 20% of agricultural spoilage.

Product codes	Product description	Pack size	CAS number
DRE-C10143000	Alternariol	1 mL	641-38-3
DRE-C10143100	Alternariol Monomethyl Ether	1 mL	23452-05-3
DRE-C17236000	Tentoxin	1 mL	28540-82-1
DRE-C17237000	Tenuazonic Acid	1 mL	610-88-8

ERGOT ALKALOIDS

NEAT MATERIALS

Ergot alkaloids are a large group of compounds produced by fungi that, during the growing season, attack a wide variety of grass species including small grains. Ergotism, or St. Anthony's Fire, is one of the oldest known mycotoxicoses, caused by long-term ergot poisoning traditionally prompted by the ingestion of contaminated products.

Product codes	Product description	Pack size	CAS number
DRE-C12634545	Dihydroergocristine	0.5 mg	17479-19-5
DRE-C13201200	Ergocornine	0.5 mg	564-36-3
DRE-C13201210	Ergocorninine	0.125 mg	564-37-4
DRE-C13201250	Ergocristine	0.5 mg	511-08-0
DRE-C13201260	Ergocristinine	0.125 mg	511-07-9
DRE-C13201270	Ergocryptine	0.5 mg	511-09-1
DRE-C13201275	Ergocryptinine	0.125 mg	511-10-4
DRE-C13201290	Ergometrine	0.5 mg	60-79-7
DRE-C13201310	Ergometrinine	0.125 mg	479-00-5
DRE-C13201350	Ergosine	0.5 mg	561-94-4
DRE-C13201360	Ergosinine	0.125 mg	596-88-3
DRE-C13201600	Ergotamine	0.5 mg	113-15-5
DRE-C13201610	Ergotaminine	0.125 mg	639-81-6

ERGOCHROMES

SINGLE COMPONENT SOLUTIONS

Ergochromes are the pigments that present in ergot contaminated products. These pigments have comparable concentrations to ergot alkaloids. Ergochromes are produced by the mold to offer partial light protection to the fungus during the growth stage.

Product codes	Product description	Pack size	CAS number
DRE-A16929000CH-50	Secalonic Acid D 50 µg/mL in Chloroform	1.2 mL	35287-69-5

TRICHOTHECENES

MULTICOMPONENT SOLUTIONS

Trichothecenes are a group of over 150 chemically related mycotoxins. Trichothecenes are toxic to humans, birds, fish, a variety of invertebrates, plants, eukaryotic cells, and other mammals. The toxicity varies depending on the specific toxin and animal species, but a significant part of the lethality depends on the route of administration. The effects of the poisoning will depend on the duration, concentration of exposure, and mode by which a person is exposed. Hazardous concentrations of trichothecenes have been detected in corn, wheat, barley, oats, rice, rye, vegetables and other crops. Diseases that can result from contamination include seed rot, seedling blight, root rot, stalk rot and ear rot.

Product codes	Product description	Pack size	Number of analytes
DRE-A30000002AL	B-Trichothecenes Mixture 100 µg/mL in Acetonitrile	1 mL	4
DRE-V30000002AL		5 mL	
Analytes		**CAS number**	**Analyte concentration**
3-Acetyl-deoxynivalenol		50722-38-8	100 µg/mL
15-Acetyl-deoxynivalenol		88337-96-6	100 µg/mL
Deoxynivalenol		51481-10-8	100 µg/mL
Nivalenol		23282-20-4	100 µg/mL

Product codes	Product description	Pack size	Number of analytes
DRE-A30000004AL	A + B-Trichothecenes and Zearalenone Mixture 10 µg/mL in Acetonitrile	1 mL	9
DRE-V30000004AL		5 mL	
Analytes		**CAS number**	**Analyte concentration**
3-Acetyl-deoxynivalenol		50722-38-8	10 µg/mL
Deoxynivalenol		51481-10-8	10 µg/mL
Diacetoxyscirpenol		2270-40-8	10 µg/mL
Fusarenon X		23255-69-8	10 µg/mL
HT-2 Toxin (HT-2)		26934-87-2	10 µg/mL
Nivalenol		23282-20-4	10 µg/mL
T-2 Toxin (T-2)		21259-20-1	10 µg/mL
Zearalanone		5975-78-0	10 µg/mL
Zearalenone		17924-92-4	10 µg/mL

TRICHOTHECENES

SINGLE COMPONENT SOLUTIONS

Product codes	Product description	Pack size	CAS number
DRE-A10233000AL-100	3-Acetyl Deoxynivalenol 100 µg/mL in Acetonitrile	1 mL	50722-38-8
DRE-V10233000AL-100		5 mL	
DRE-A10233100AL-25	3-Acetyl Deoxynivalenol 13C17 25 µg/mL in Acetonitrile	1.2 mL	1217476-81-7
DRE-A10011890AL-50	15-Acetoxyscirpenol 50 µg/mL in Acetonitrile	1 mL	2623-22-5
DRE-A10023500AL-100	15-Acetyl Deoxynivalenol 100 µg/mL in Acetonitrile	1 mL	88337-96-6
DRE-V10023500AL-100		5 mL	
DRE-A10023510AL-10	15-Acetyl Deoxynivalenol 13C17 10 µg/mL in Acetonitrile	1.2 mL	911392-39-7
DRE-A17948010AL-10	Alpha-Zearalanol 10 µg/mL in Acetonitrile	1 mL	26538-44-3
DRE-A17947330AL-10	Beta-Zearalanol 10 µg/mL in Acetonitrile	1 mL	42422-68-4
DRE-A17947380AL-10	Alpha-Zearalenol 10 µg/mL in Acetonitrile	1 mL	131180-21-7
DRE-A17947390AL-10	Beta-Zearalenol 10 µg/mL in Acetonitrile	1 mL	71030-11-0
DRE-A12147000AL-100	Deoxynivalenol 100 µg/mL in Acetonitrile	1 mL	51481-10-8
DRE-V12147000AL-100		5 mL	
DRE-A12147100AL-25	Deoxynivalenol 13C15 25 µg/mL in Acetonitrile	1.2 mL	911392-36-4
DRE-A12099000AL-50	Deepoxy-Deoxynivalenol 50 µg/mL in Acetonitrile	1 mL	88054-24-4
DRE-V12099000AL-50		5 mL	
DRE-A12147200AL-50	Deoxynivalenol-3-Glucoside 50 µg/mL in Acetonitrile	1 mL	131180-21-7
DRE-A12147210AL-10	Deoxynivalenol-3-Glucoside 13C21 10 µg/mL in Acetonitrile	1.2 mL	–
DRE-A12174000AL-100	Diacetoxyscirpenol 100 µg/mL in Acetonitrile	1 mL	2270-40-8
DRE-V12174000AL-100		5 mL	
DRE-A12174010AL-25	Diacetoxyscirpenol 13C19 25 µg/mL in Acetonitrile	1.2 mL	–
DRE-A14214000AL-100	HT-2 Toxin 100 µg/mL in Acetonitrile	1 mL	26934-87-2
DRE-V14214000AL-100		5 mL	
DRE-A14214100AL-25	HT-2 Toxin 13C22 25 µg/mL in Acetonitrile	1.2 mL	1486469-92-4
DRE-A15500920AL-100	Neosolaniol 100 µg/mL in Acetonitrile	1 mL	36519-25-2
DRE-V15500920AL-100		5 mL	
DRE-A15618000AL-100	Nivalenol 100 µg/mL in Acetonitrile	1 mL	23282-20-4
DRE-V15618000AL-100		5 mL	
DRE-A15618010AL-25	Nivalenol 13C15 25 µg/mL in Acetonitrile	1.2 mL	911392-40-0
DRE-A17130900AL-50	T-2 Tetraol 50 µg/mL in Acetonitrile	1 mL	34114-99-3
DRE-A13989000AL-100	T-2-Toxin 100 µg/mL in Acetonitrile	1 mL	21259-20-1
DRE-V13989000AL-100		5 mL	
DRE-A13989100AL-25	T-2 Toxin 13C24 25 µg/mL in Acetonitrile	1.2 mL	–
DRE-A17131000AL-50	T-2 Triol 50 µg/mL in Acetonitrile	1 mL	34114-98-2
DRE-A17947350AL-10	Zearalanone 10 µg/mL in Acetonitrile	1 mL	5975-78-0
DRE-A17947400AL-100	Zearalenone 100 µg/mL in Acetonitrile	1 mL	17924-92-4
DRE-V17947400AL-100		5 mL	
DRE-A17947410AL-25	Zearalenone 13C18 25 µg/mL in Acetonitrile	1.2 mL	911392-43-3

TRICHOTHECENES

NEAT MATERIALS

Product codes	Product description	Pack size	CAS number
DRE-C10233000-5MG	3-Acetyl Deoxynivalenol	5 mg	50722-38-8
DRE-C10233000-10MG		10 mg	
DRE-C10023500-5MG	15-Acetyl Deoxynivalenol	5 mg	88337-96-6
DRE-C10023500-10MG		10 mg	
DRE-C12147000-5MG	Deoxynivalenol	5 mg	51481-10-8
DRE-C12147000-10MG		10 mg	
DRE-C15500920-5MG	Neosolaniol	5 mg	36519-25-2
DRE-C15500920-10MG		10 mg	
DRE-C15618100-5MG	Nivalenol	5 mg	23282-20-4
DRE-C15618100-10MG		10 mg	
DRE-C13989000-5MG	T-2 Toxin	5 mg	21259-20-1
DRE-C13989000-10MG		10 mg	
DRE-C17947400	Zearalenone	5 mg	17924-92-4
DRE-C17947400		10 mg	

FUMONISINS

MULTICOMPONENT SOLUTIONS

Fumonisins are a group of toxins that typically affect maize products, although a few occurrences have been reported in other grains such as rice, wheat and barley. Maize and maize-based products, however, are the most common product contaminated by fumonisins. These toxins have been linked to several health issues in humans and animals, including concerns they may contribute to the occurrence of cancer and birth defects.

Product codes	Product description	Pack size	Number of analytes
DRE-A30000003WL	Fumonisin B1 and B2 Mixture 50 µg/mL in Acetonitrile:Water	1 mL	2
DRE-V30000003WL		5 mL	
Analytes		**CAS number**	**Analyte concentration**
Fumonisin B1		116355-83-0	50 µg/mL
Fumonisin B2		116355-84-1	50 µg/mL

Product codes	Product description	Pack size	Number of analytes
DRE-A30000009WL	13C Labelled Fumonisins B1 and B2 Mixture 5 µg/mL in Acetonitrile:Water	1.2 mL	2
Analytes		**CAS number**	**Analyte concentration**
Fumonisin B1 (13C34)		1217458-62-2	5 µg/mL
Fumonisin B2 (U-13C34)		1217481-36-1	5 µg/mL

SINGLE COMPONENT SOLUTIONS

Product codes	Product description	Pack size	CAS number
DRE-A13955900WL-50	Fumonisin B1 50 µg/mL in Acetonitrile	1 mL	116355-83-0
DRE-V13955900WL-50		5 mL	
DRE-A13955902WL-25	Fumonisin B1 13C34 25 µg/mL in Acetonitrile:Water	1.2 mL	1217458-62-2
DRE-A13955905WL-50	Fumonisin B2 50 µg/mL in Acetonitrile	1 mL	116355-84-1
DRE-V13955905WL-50		5 mL	
DRE-A13955907WL-10	Fumonisin B2 13C34 10 µg/mL in Acetonitrile:Water	1.2 mL	1217481-36-1
DRE-A13955910WL-50	Fumonisin B3 50 µg/mL in Acetonitrile	1 mL	136379-59-4
DRE-A13955912WL-10	Fumonisin B3 13C34 10 µg/mL in Acetonitrile:Water	1.2 mL	1217494-88-6

NEAT MATERIALS

Product codes	Product description	Pack size	CAS number
DRE-C13955900-5MG	Fumonisin B1	5 mg	116355-83-0
DRE-C13955900-10MG		10 mg	

FUSARIUMS

MULTICOMPONENT SOLUTIONS

Fusarium is a large genus of filamentous fungi which is part of a group often referred to as hyphomycetes. Fusarium fungi are widely distributed in soil and associated with plants. Most species of fusarium are harmless saprobes, and are relatively abundant soil microbes. There are some species, however, that produce mycotoxins in cereal crops that can negatively affect human and animal health if they enter the food chain.

Product codes	Product description	Pack size	Number of analytes
DRE-V30000007AL	Fusarium Toxins Mixture 10-100 µg/mL in Acetonitrile	5 mL	5
Analytes		**CAS number**	**Analyte concentration**
Deoxynivalenol		51481-10-8	100 µg/mL
HT-2 Toxin (HT-2)		26934-87-2	100 µg/mL
T-2 Toxin (T-2)		21259-20-1	10 µg/mL
Zearalanone		5975-78-0	32 µg/mL
Zearalenone		17924-92-4	30 µg/mL

Product codes	Product description	Pack size	Number of analytes
DRE-A30000007AL	13C Labelled Fusarium Toxins Mixture 1-10 µg/mL in Acetonitrile	1.2 mL	4
Analytes		**CAS number**	**Analyte concentration**
Deoxynivalenol (13C15)		911392-36-4	10 µg/mL
HT-2 Toxin (13C22)		1486469-92-4	10 µg/mL
T-2 Toxin (T-2) (U-13C24)		–	1 µg/mL
Zearalenone (U-13C18)		911392-43-3	3 µg/mL

SINGLE COMPONENT SOLUTIONS

Product codes	Product description	Pack size	CAS number
DRE-A13988800AL-100	Fusarenon-X 100 µg/mL in Acetonitrile	1 mL	23255-69-8
DRE-V13988800AL-100		5 mL	51481-10-8
DRE-A15295000AL-100	Moniliformin 100 µg/mL in Acetonitrile	1 mL	23255-69-8

NEAT MATERIALS

Product codes	Product description	Pack size	CAS number
DRE-C10428500	Beauvericin	1 mL	31876-38-7
DRE-C13988800-5MG	Fusarenon-X	5 mg	23255-69-8
DRE-C13988800-10MG		10 mg	23255-69-8

OCHRATOXINS

SINGLE COMPONENT SOLUTIONS

Ochratoxins are a group of mycotoxins produced by some Aspergillus species, largely Aspergillus A. Ochratoxin A is the most prevalent and relevant fungal toxin of this group of mycotoxins and is known to occur in commodities such as cereals, coffee, dried fruit, and red wine. It may potentially be a human carcinogen and is of special interest as it can accumulate in the meat of animals. Thus, meat and meat products that have become contaminated with this toxin can cause acute toxicity in mammalian kidneys.

Product codes	Product description	Pack size	CAS number
DRE-A15670400AL-10	alpha-Ochratoxin 10 µg/mL in Acetonitrile	1 mL	31876-38-7
DRE-A15670000AL-10	Ochratoxin A 10 µg/mL in Acetonitrile	1 mL	303-47-9
DRE-V15670000AL-10		5 mL	
DRE-A15670000LM-10	Ochratoxin A 10 µg/mL in Acetonitrile:Methanol	1 mL	303-47-9
DRE-A15670010AL-10	Ochratoxin A 13C20 10 µg/mL in Acetonitrile	1.2 mL	911392-42-2
DRE-A15670100AL-10	Ochratoxin B 10 µg/mL in Acetonitrile	1 mL	4825-86-9

NEAT MATERIALS

Product codes	Product description	Pack size	CAS number
DRE-C15670000-5MG	Ochratoxin A	5 mg	303-47-9
DRE-C15670000-10MG		10 mg	

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Patulin is toxic to many biological systems, including bacteria, mammalian cell cultures, tall plants, and animals, but its role in causing animal and human disease is unclear. Patulin has a lactone structure and has been shown to be carcinogenic when injected intradermally into mice. Patulin is produced by numerous Penicillium and Aspergillus species along with Byssochlamys nivea. Penicillium expansum, which commonly occurs in decomposing apples, produces patulin, which has caused a public health concern because it has been found in commercial apple juice and other apple products. Patulin appears to be unstable in grains, cured meats and cheese.

Product codes	Product description	Pack size	CAS number
DRE-A15896000AL-100	Patulin 100 µg/mL in Acetonitrile	1 mL	149-29-1
DRE-V15896000AL-100		5 mL	
DRE-A15896010AL-25	Patulin 13C7 25 µg/mL in Acetonitrile	1.2 mL	1353867-99-8

NEAT MATERIALS

Product codes	Product description	Pack size	CAS number
DRE-C15896000	Patulin	5 mg	149-29-1

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