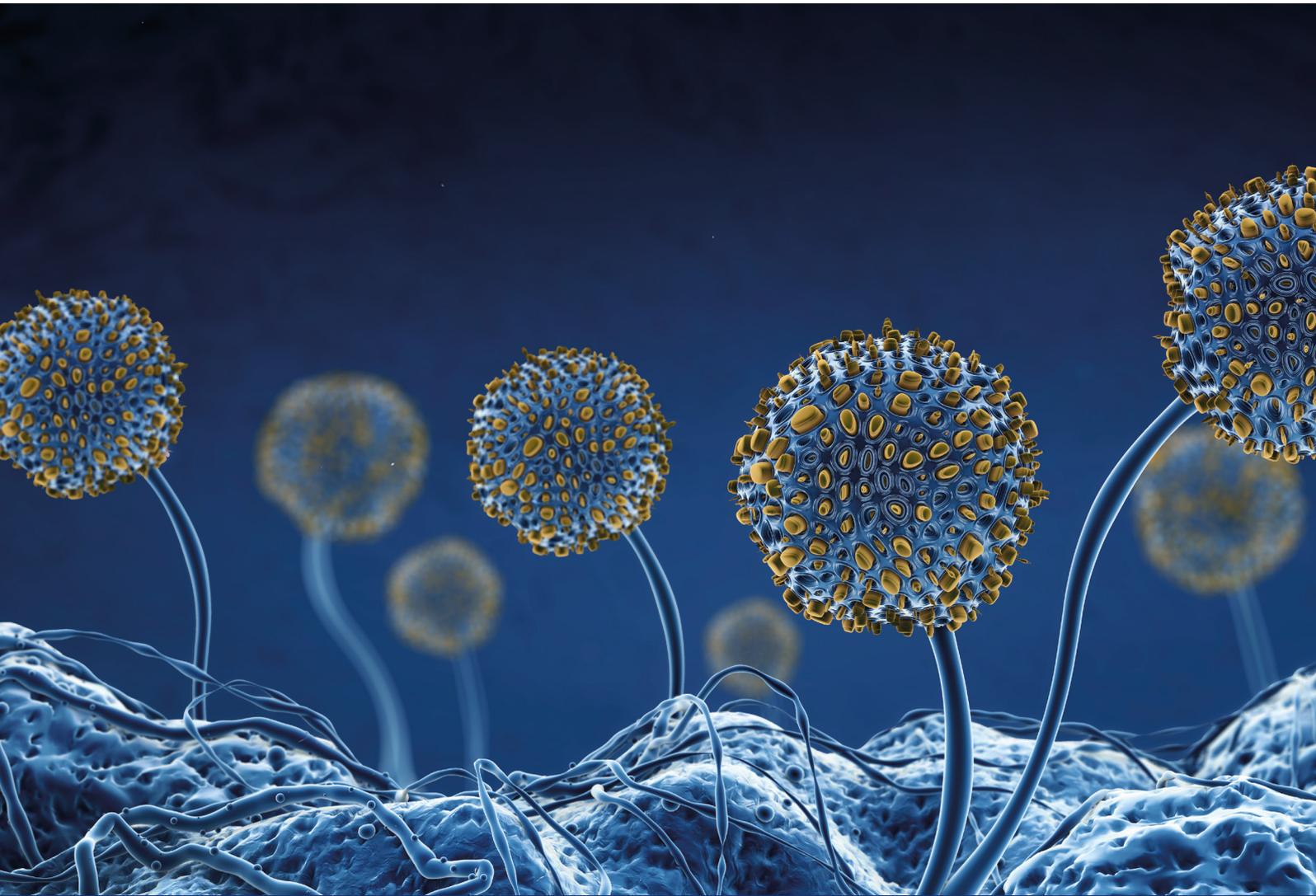


Mould Contamination

Cytokine Release Test



RELIABLE DETECTION OF MOULD CONTAMINATION
AND CLARITY FOR THOSE AFFECTED

DIAGNOSTICS AT A GLANCE

At biovis, you can have the following parameters tested:



**K611 Mould Contamination
(Cytokine Release)**

MOULD CONTAMINATION CYTOKINE RELEASE TEST

In Germany, moisture and mould in indoor spaces are a significant health issue. According to a study, approximately one in five to six homes is affected.¹ In addition, around ten percent of building damage cases are linked to mould.² These figures illustrate the extent of mould contamination due to construction defects and the associated health risks for residents.

The symptoms of mould exposure are often vague and cover a wide range of complaints. Respiratory issues such as chronic cough, shortness of breath, and recurrent infections are common. Many affected individuals report non-specific symptoms like headaches, dizziness, chronic fatigue, and concentration difficulties, which can significantly impact overall well-being. Skin reactions and eye irritation are as frequent as gastrointestinal issues or joint pain.

Mould exposure can also trigger neurotoxic effects, leading to symptoms such as memory problems, irritability, and even depressive moods. The non-specific nature of these symptoms makes diagnosis difficult, often resulting in affected individuals going from doctor to doctor without finding a clear cause or effective treatment.



**SYMPTOMS OF MOULD
CONTAMINATION
ARE OFTEN DIFFUSE
AND INCLUDE A
WIDE RANGE OF
COMPLAINTS.**



In severe cases, these varied symptoms can become so intense that they significantly reduce quality of life and even threaten a person's ability to work. Some individuals, particularly those who are highly sensitive, may develop chronic conditions that lead to long-term limitations in daily life and professional activities. The psychological strain associated with this, combined with the feeling of not being taken seriously, further exacerbates the problem.

The new functional **Cytokine Release Test** provides a way to detect immune reactions triggered by mould or mycotoxins.

This highly sensitive test delivers results within a few hours and can differentiate between acute and latent exposures. A positive result can help affected individuals link their symptoms to mould exposure, increasing recognition by medical professionals and health insurers – an important step towards targeted support measures and potential compensation.

[1] Dtsch Arztebl Int 2024;121:265-71; DOI:10.3238/arztebl.m2024.0018.

[2] Fraunhofer Institute for Building Physics, press release 11.2016

MOULDS

Here is a brief overview of the mould species included in the profile, their occurrence and potential health risks for patients:



Acremonium strictum

Occurrence:

Damp floors, carpets, damp building walls

Effects of exposure:

Can cause skin infections and, in rare cases, severe systemic infections, particularly in immunocompromised individuals (e.g. endophthalmitis, mycetoma)



Aspergillus fumigatus

Occurrence:

Soil, compost, decaying organic matter, damp indoor spaces

Effects of exposure:

Can lead to allergies (e.g. allergic bronchopulmonary aspergillosis) and severe infections, such as invasive aspergillosis in immunocompromised patients (e.g. transplant patients)



Alternaria alternata

Occurrence:

Outdoor environments (soil, plants, leaves) and indoor spaces (walls, textiles, window frames)

Effects of exposure:

Causes allergic reactions, asthma and can lead to skin infections or invasive infections in immunocompromised patients



Cladosporium cladosporioides / sphaerospermum

Occurrence:

Outdoor environments (plants, soil) and indoor spaces (walls, carpets, damp surfaces)

Effects of exposure:

A common cause of respiratory allergies, asthma, and chronic rhinitis; rarely, it can cause invasive infections in immunocompromised individuals



Aspergillus flavus

Occurrence:

Cereals, nuts, spices, damp storage conditions

Effects of exposure:

Produces aflatoxins, which are highly carcinogenic; in immunosuppressed individuals, it can cause invasive aspergillosis, a severe infection affecting the lungs and other organs



Fusarium solani

Occurrence:

Soil, plants, water, damp buildings

Effects of exposure:

Can cause keratitis (corneal inflammation), skin infections, and, in immunosuppressed individuals (e.g. after transplantations), may lead to serious systemic infections



Penicillium chrysogenum/notatum

Occurrence:

Air, damp walls, spoiled food

Effects of exposure:

Produces penicillin (in controlled environments), but in uncontrolled environments, it can cause allergic reactions and, in rare cases, infections in immunocompromised individuals



Chaetomium globosum

Occurrence:

Damp walls, buildings with water damage (wood, paper, textiles)

Effects of exposure:

Can cause skin and nail infections in immunocompromised individuals, as well as rare systemic infections



Serpula lacrymans

Occurrence:

Wood, particularly in damp buildings, leading to dry rot and wood decay

Effects of exposure:

Direct health risks are rare, but structural damage caused by this fungus can create damp conditions that promote the growth of other potentially harmful moulds



Black mould spores

Conclusion:

Most of these moulds are found in damp, poorly ventilated environments such as walls, carpets, or wooden structures in buildings. They can pose serious health risks, particularly to immunocompromised individuals, leading to allergic reactions, respiratory diseases, and, in some cases, even severe systemic infections.

DAMP, POORLY VENTILATED ENVIRONMENTS ARE AN IDEAL BREEDING GROUND FOR MOULDS.

MYCOTOXINS

Here is a concise overview of the mycotoxins included in the test, with information on their occurrence, clinical relevance, and potential cause of chronic diseases:



Aflatoxins (especially aflatoxin B1)

Occurrence:

Nuts, cereals, maize, mouldy food

Relevance:

Highly carcinogenic (especially liver cancer), hepatotoxic

Chronic diseases:

Liver cirrhosis, liver cancer with prolonged exposure



Fumonisin B2

Occurrence:

Maize, cereals, food storage

Relevance:

Nephrotoxic, potentially carcinogenic

Chronic diseases:

Kidney and oesophageal cancer, chronic kidney damage



Citrinin

Occurrence:

Rice, cereal products, damp storage conditions

Relevance:

Nephrotoxic

Chronic diseases:

Chronic kidney disease with long-term exposure



Fumonisin B4

Occurrence:

Rarer in maize and cereals

Relevance:

Lower toxicity than B2, also nephrotoxic

Chronic diseases:

Possible chronic kidney damage



Deoxynivalenol (DON)

Occurrence:

Cereals (especially wheat, maize), damp harvests

Relevance:

Leads to gastrointestinal symptoms and immunosuppression

Chronic diseases:

Weakening of the immune system and chronic gastrointestinal problems



Gliotoxin

Occurrence:

Aspergillus species, mould in damp buildings

Relevance:

Strongly immunosuppressive, respiratory issues

Chronic diseases:

Chronic respiratory diseases, immunodeficiency



Ochratoxin A

Occurrence:

Cereals, coffee, wine, damp storage

Relevance:

Nephrotoxic, carcinogenic, immunosuppressive

Chronic diseases:

Chronic renal failure, kidney cancer, immunodeficiency



T-2 toxin

Occurrence:

Cereals, especially in humid conditions

Relevance:

Highly toxic, causes cell and organ damage

Chronic diseases:

Chronic toxicity, weakens the immune system, leads to organ damage



Sterigmatocystin

Occurrence:

Cereals, cereal products, cheese, coffee, spices, beer

Relevance:

Hepatotoxicity, nephrotoxicity, immunomodulatory effects, neurotoxicity, mutagenicity, possible carcinogenicity

Chronic diseases:

Chronic liver diseases, liver cirrhosis, association with cancer



Zearalenone

Occurrence:

Maize, cereals, damp harvests

Relevance:

Oestrogen-like effect, impairs the reproductive system

Chronic diseases:

Hormonal disorders, fertility problems

Conclusion:

Chronic illnesses caused by **building contamination** mainly concern mycotoxins such as **gliotoxin**, which is found in mould contamination and can lead to long-term respiratory illnesses and immune deficiency. **Ochratoxin A** can also contribute to chronic renal failure in heavily mouldy living spaces.

**AGRICULTURAL PRODUCTS
AND FOOD ITEMS THAT
ARE POORLY STORED ARE
OFTEN AFFECTED.**

PREANALYTICS AT A GLANCE

Important information on blood collection for our cytokine release tests:

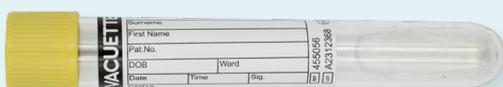
- Drink one glass of water (approx. 200 ml) per hour within 2 hours before blood collection
- Athletes should avoid physical activity 48 hours before blood collection
- The patient should sit for at least 10 minutes before the blood sample is taken (resting pulse)
- Allow disinfectant to take effect and dry completely
- Monovette/Vacutainer must always be completely filled (discard underfilled Monovettes/Vacutainers)
- Draw the Monovette slowly (to prevent platelet activation). Slowly draw up the monovette
- Immediately after collection, invert the Monovette/Vacutainer three times (do not shake).
- Store blood at room temperature, protected from light!

The following materials are required:



3 x CPDA monovette

or



3 x CPDA vacuette



**THE BASIS OF ALL
GOOD ANALYTICS.**

The mailing bags are labelled with the specially developed sticker for our cytokine release tests.



The labelling ensures that the samples are recorded promptly and integrated into the processing workflow within the required time frame.

You can order these stickers on our material order form.



biovis
material
order form



FURTHER
INFORMATION
CAN BE FOUND
ON OUR
HOMEPAGE.



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