



16020 Linden Ave North  
Shoreline, WA 98133  
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## Fungal Count Dx Report Form 01/31/2024

### COMPANY INFORMATION

**Company:**  
**Project:**  
**Location:**  
**Project Phone:**  
**Project Email:**

### ORDER INFORMATION

**Accession No:**  
**Date of Service:** 01/19/2024  
**Reported On:** 01/31/2024  
**Contact:**

### SAMPLE INFORMATION

**Date of Receipt:** 01/23/2024  
**Time of Receipt:** 11:41 CDT  
**Date of Collection:** 01/19/2024  
**Time of Collection:** 00:00 CDT  
**Sample Type:** Filter

### LAB INFORMATION

**Phone:** 1-972-492-0419  
**Fax:** 1-972-243-7759  
**Email:** info@realtimelab.com  
**CLIA #:** 45D1051736  
**CAP #:** 7210193  
**Tax ID #:** 0669342

### Procedure: FUNGAL COUNT

TYPE: Quantitative PCR (Polymerase Chain Reaction)

### RESULTS:

Code	TEST	Results (Fungal Elements/ML)
EM001	Aspergillus flavus	21853.00
EM002	Aspergillus fumigatus	2263.00
EM003	Aspergillus niger	0.00
EM004	Aspergillus ochraceus	0.00
EM005	Aspergillus versicolor	0.00
EM006	Chaetomium globosum	0.00
EM008	Penicillium brevicompactum	423.00
EM010	Stachybotrys chartarum	0.00
EM013	Aspergillus terreus	0.00
EM014	Candida auris	0.00
EM015	Fusarium solani	0.00
EM016	Penicillium chrysogenum	0.00

### REPORT COMMENTS:

Filter

Director or Designee Signature \_\_\_\_\_

RTL maintains liability limited to cost of analysis. Interpretation of the data contained in this report is the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by RTL. The above test report relates only to the items tested. RTL bears no responsibility for sample collection activities or analytical method limitations.

MOLD	MYCOTOXIN PRODUCED	POTENTIAL HEALTH ISSUES
<i>Aspergillus fumigatus</i>	Gliotoxin, Aflatoxin	<i>A. fumigatus</i> is frequently found in homes and buildings [1]. It is considered to be an opportunistic pathogen, meaning it rarely infects healthy individuals, but is the leading cause of invasive aspergillosis (IA) in immunocompromised individuals such as cancer, HIV or transplant patients [2].
<i>Aspergillus flavus</i>	Gliotoxin, Aflatoxin	<i>A. flavus</i> is the second leading cause of invasive aspergillosis in immunocompromised patients. Particularly common clinical syndromes associated with <i>A. flavus</i> include: chronic granulomatous sinusitis, keratitis, cutaneous aspergillosis, wound infections and osteomyelitis following trauma and inoculation [3, 4]. Can cause liver cancer in humans [5].
<i>Aspergillus terreus</i>	Gliotoxin, Citirin	Inhalation of fungal spores, which travel down along the respiratory tract, cause the typical respiratory infection [6].
<i>Aspergillus versicolor</i>	Sterigmatocystin	<i>A. versicolor</i> is one of the most frequently found molds in water-damaged buildings. <i>A. versicolor</i> is known to produce a mycotoxin called sterigmatocystin a potentially carcinogenic and hepatotoxic mycotoxin. It is primarily toxic to the liver and kidneys [7].
<i>Aspergillus ochraceus</i>	Ochratoxin	Ochratoxin has been demonstrated to be Nephrotoxic, Hepatotoxic, and Carcinogenic and is a potent teratogen and immune-suppressant [8]. It has also been associated with urinary tract infections and bladder cancer [9].
<i>Aspergillus niger</i>	Ochratoxin, Gliotoxin	<i>A. niger</i> produces gliotoxin, which has been identified in the sera of humans and mice with aspergillosis. Causes immunosuppression in patients [8].
<i>Stachybotrys chartarum</i>	Macrocyclic Trichothecenes	<i>S. chartarum</i> , commonly known as black mold, is highly toxic to humans. Nausea, vomiting, diarrhea, burning erythema, ataxia, chills, fever, hypotension, hair loss and confusion are symptoms in individuals living or working inside <i>Stachybotrys</i> infested homes and buildings [10].
<i>Chaetomium globosum</i>	Chaetoglobosins	<i>C. globosum</i> is a common indoor fungal contaminant of water damaged homes or buildings. Like <i>Stachybotrys</i> , <i>C. globosum</i> spores are relatively large and due to their mode of release are not as easily airborne as are some other molds [11].
<i>Fusarium species</i>	Fumonisin; Zearalenone	<i>Fusarium</i> can cause superficial infections such as keratitis or onychomycosis in healthy individuals and disseminated infections in immunocompromised patients [12].
<i>Candida auris</i>	Unknown	<i>C. auris</i> can be found in healthcare facilities and can be spread through contact with infected patients and equipment's. <i>C. auris</i> can cause blood stream infections, wound infections and ear infections [13].
<i>Penicillium brevicompactum</i>	Ochratoxin A	Producer of the toxin Ochratoxin A. Fungal particles depend on the relative humidity [14]. Can lead to chronic Rhinosinusitis if breathed in high concentrations [15].
<i>Penicillium chrysogenum</i>	Ochratoxin A	Producer of the toxin Ochratoxin A. Fungal particles depend on the relative humidity [14]. Can lead to chronic Rhinosinusitis if breathed in high concentrations [16]. High levels are correlated with the development of sick building syndrome [17].

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## ENVIRONMENTAL MYCOTOXIN PANEL REPORT FORM

### 01/26/2024

COMPANY INFORMATION	ORDER INFORMATION	SAMPLE INFORMATION	LAB INFORMATION
<b>Company:</b> <b>Project:</b> <b>Location:</b> <b>Project Phone:</b> <b>Project Email:</b>	<b>Accession No:</b> <b>Date of Service:</b> 01/19/2024 <b>Reported On:</b> 01/26/2024 <b>Contact:</b>	<b>Date of Receipt:</b> 01/23/2024 <b>Time of Receipt:</b> 11:41 CDT <b>Date of Collection:</b> 01/19/2024 <b>Time of Collection:</b> 00:00 CDT <b>Sample Type:</b> Filter	<b>Phone:</b> 1-972-492-0419 <b>Fax:</b> 1-972-243-7759 <b>Email:</b> info@realtimelab.com <b>CLIA #:</b> 45D1051736 <b>CAP #:</b> 7210193 <b>Tax ID #:</b> 0669342

**Procedure Type:** Semi-quantitative procedure by ELISA

List of Mycotoxins tested in the Panel
Ochratoxin A
Aflatoxin Group: (B1, B2, G1, G2)
Trichothecene Group (Macrocylic): Roridin A, Roridin E, Roridin H, Roridin L-2, Verrucarin A, Verrucarin J, Satratoxin G, Satratoxin H, Isosatratoxin F
Gliotoxin Derivative
Zearalenone

**Results:**

Code	Test	Specimen	Value	Result	Not Present if less than	Equivocal if between	Present if greater or equal
D8501	Ochratoxin A	Filter	1.62000 ppb	Not Present	1.8 ppb	1.8-2 ppb	2 ppb
D8502	Aflatoxin Group: (B1, B2, G1, G2)	Filter	0.13700 ppb	Not Present	0.8 ppb	0.8-1 ppb	1 ppb
D8503	Trichothecene Group (Macrocylic): Roridin A, Roridin E, Roridin H, Roridin L-2, Verrucarin A, Verrucarin J, Satratoxin G, Satratoxin H, Isosatratoxin F	Filter	0.09900 ppb	Present	0.07 ppb	0.07-0.09 ppb	0.09 ppb
D8510	Gliotoxin Derivative	Filter	0.43700 ppb	Not Present	0.5 ppb	0.5-1.0 ppb	1.0 ppb
D8512	Zearalenone	Filter	0.10500 ppb	Not Present	0.5 ppb	0.5-0.7 ppb	0.7 ppb

**REPORT COMMENTS:**

Filter

*Madelaine Teig*

Director or Designee Signature \_\_\_\_\_

Tests such as this should be used only in conjunction with other medically established diagnostic elements (e.g., symptoms, history, clinical impressions, results from other tests, etc). Physicians should use all the information available to them to diagnose and determine appropriate treatment for their patients.  
 Disclaimer: This test was developed and its performance characteristics determined by RealTime Lab. It has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. This laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) as qualified to perform high complexity clinical laboratory testing.

Mycotoxin	Cellular Activity of Mycotoxin	Symptoms/Other	Association with a "Disease State"
<b>A FLA TOXIN FAMILY</b>			
<b>Organisms: <i>Aspergillus flavus</i>, <i>Aspergillus oryzae</i>, <i>Aspergillus fumigatus</i>, <i>Aspergillus parasiticus</i></b>			
<b>Aflatoxins have been associated with liver cancer [2,3], cirrhosis [4,5], and other health issues</b>			
1	Aflatoxin B1	Binds DNA and proteins [6,7]	Shortness of breath [8], weight loss [10], most potent and highly carcinogenic.
2	Aflatoxin B2	Inhibits DNA and RNA replication [12]	Impaired fetal growth [13,14]
3	Aflatoxin G1	Cytotoxic, induces apoptosis in cells, DNA damage [1]	A flavus is a leading cause of invasive aspergillus in immunocompromised patients [15]
4	Aflatoxin G2	Cancer, neonatal jaundice [2,3,16]	Aflatoxicosis in humans and animals [15]
<b>OCHRA TOXIN A</b>			
<b>Organisms: <i>Aspergillus ochraceus</i>, <i>Aspergillus niger</i>, <i>Penicillium species</i></b>			
5	Ochratoxin A	Inhibits mitochondrial ATP, potent teratogen, and immune suppressor [17-19]	Fatigue, dermatitis, irritated bowel [20-22]
<b>MA CROCYCLIC TRICHOTHECENES (Group D)</b>			
<b>Organism: <i>Stachybotrys chartarum</i></b>			
6	Satratoxin G	DNA, RNA, and protein synthesis inhibition [25]	Fatigue [26]
7	Satratoxin H	Inhibits protein synthesis [25]	Fatigue [26]
8	Isosatratoxin F	Immunosuppression [30]	Weakened immune system [30]
9	Roridin A	Immunosuppression [30]	Weakened immune system [30]
10	Roridin E	DNA, RNA, and protein synthesis disruption [25,32]	Weakened immune system [30]
11	Roridin H	Inhibits protein synthesis [25]	Weakened immune system [30]
12	Roridin L-2	Immunosuppression [30]	Weakened immune system [30]
13	Verrucaric acid	Immunosuppression [30]	
14	Verrucaric acid	Immunosuppression [30]	
<b>GLIOTOXIN DERIVATIVE</b>			
<b>Organisms: <i>Aspergillus fumigatus</i>, <i>Aspergillus terreus</i>, <i>Aspergillus niger</i>, <i>Aspergillus flavus</i></b>			
15	Gliotoxin	Attacks intracellular function in immune system [34]	Memory and breathing issues [35,36]
<b>ZEARA LENONE</b>			
<b>Organisms: <i>Fusarium species</i></b>			
16	Zearalenone	Estrogen mimic [37,38]	Early puberty, low sperm counts, cancer [39-42]

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