US BioTek LABORATORIES

16020 Linden Ave North
Shoreline, WA 98133
www.usbiotek.com

Mold Building Report Form
07/08/2024

COMPANY INFORMATION

Company: US BioTek
Project: Project Doe
Location: 999 Street St. Cityville, tx 99999
Project Phone: 19724920419
Project Email: NA

ORDER INFORMATION

Accession No: EN041824B
Date of Service: 04/18/2024
Reported On: 04/18/2024
Contact: Doctor USBioTek

SAMPLE INFORMATION

Date of Receipt: 04/18/2024
Time of Receipt: 20:18 CDT
Date of Collection: 2024-04-17
Time of Collection: 00:00:00 CDT
Sample Type: Dust

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	0.00
EM002	Aspergillus fumigatus	250.00
EM003	Aspergillus niger	0.00
EM004	Aspergillus ochraceus	0.00
EM005	Aspergillus versicolor	0.00
EM006	Chaetomium globosum	30.00
EM008	Penicillium brevicompactum	0.00
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:

Dust

Director Signature

Director or Designee Signature _____

MOLD	MYCOTOXIN PRODUCED	POTENTIAL HEALTH ISSUES
Aspergillus fumigatus	Gliotoxin, Aflatoxin	A. fumigatus 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].
Aspergillus flavus	Gliotoxin, Aflatoxin	A. flavus is the second leading cause of invasive aspergillosis in immunocompromised patients. Particularly common clinical syndromes associated with A. flavus include: chronic granulomatous sinusitis, keratitis, cutaneous aspergillosis, wound infections and osteomyelitis following trauma and inoculation [3, 4]. Can cause liver cancer in humans [5].
Aspergillus terreus	Gliotoxin, Citirin	Inhalation of fungal spores, which travel down along the respiratory tract, cause the typical respiratory infection [6].
Aspergillus versicolor	Sterigmatocystin	A. versicolor is one of the most frequently found molds in water-damaged buildings. A. versicolor is known to produce a mycotoxin called sterigmatocystin a potentially carcinogenic and hepatotoxic mycotoxin. It is primarily toxic to the liver and kidneys [7].
Aspergillus ochraceus	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].
Aspergillus niger	Ochratoxin, Gliotoxin	A. niger produces gliotoxin, which has been identified in the sera of humans and mice with aspergillosis. Causes immunosuppression in patients [8].
Stachybotrys chartarum	Macrocyclic Trichothecenes	S. chartarum, 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 Stachybotrys infested homes and buildings [10].
Chaetomium globosum	Chaetoglobosins	C. globosum is a common indoor fungal contaminant of water damaged homes or buildings. Like Stachybotrys, C. globosum spores are relatively large and due to their mode of release are not as easily airborne as are some other molds [11].
Fusarium species	Fumonisins; Zearalenone	Fusarium can cause superficial infections such as keratitis or onychomycosis in healthy individuals and disseminated infections in immunocompromised patients [12].
Candida auris	Unknown	C. auris can be found in healthcare facilities and can be spread through contact with infected patients and equipment"s. C.auris can cause blood stream infections, wound infections and ear infections [13].
Penicillium brevicompactum	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].
Penicillium chrysogenum	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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CAP #: 7210193
Tax ID #: 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 (Macrocyclic): 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	Dust	0.04700 ppb	Not Detected	1.8 ppb	1.8-2 ppb	2 ppb
D8502	Aflatoxin Group: (B1, B2, G1, G2)	Dust	0.17600 ppb	Not Detected	0.8 ppb	0.8-1 ppb	1 ppb
D8503	Trichothecene Group (Macrocyclic): Roridin A, Roridin E, Roridin H, Roridin L-2, Verrucarin A, Verrucarin J, Satratoxin G, Satratoxin H, Isosatratoxin F	Dust	0.02200 ppb	Not Detected	0.07 ppb	0.07-0.09 ppb	0.09 ppb
D8510	Gliotoxin Derivative	Dust	0.54300 ppb	Equivocal	0.5 ppb	0.5-1.0 ppb	1 ppb
D8512	Zearalenone	Dust	0.26600 ppb	Not Detected	0.5 ppb	0.5-0.7 ppb	0.7 ppb

REPORT COMMENTS:
Dust

Director Signature

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.

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	Mycotoxin	Cellular Activity of Mycotoxin	Symptoms/Other	Association with a "Disease State"
AFLATOXIN FAMILY **Organisms: *Aspergillus flavus, Aspergillus oryzae, Aspergillus fumigatus, Aspergillus parasiticus*** **Aflatoxins have been associated with liver cancer [2,3], cirrhosis [4,5], and other health issues**				
1	Aflatoxin B1	Binds DNA and proteins [6,7]	Shortness of breath [8], weight loss [10], most potent and highly carcinogenic.	Primarily attacks the liver, other organs include kidneys and lungs [11]
2	Aflatoxin B2	Inhibits DNA and RNA replication [12]	Impaired fetal growth [13,14]	Affects the liver and kidneys [11]
3	Aflatoxin G1	Cytotoxic, induces apoptosis in cells, DNA damage [1]	A flavus is a leading cause of invasive aspergillus in immunocompromised patients [15]	Cancer, neonatal jaundice [2,3,16]
4	Aflatoxin G2	Cancer, neonatal jaundice [2,3,16]	Aflatoxicosis in humans and animals [15]	Malnutrition, lung cancer [2,3,16]
OCHRATOXIN A **Organisms: *Aspergillus ochraceus, Aspergillus niger, Penicillium species***				
5	Ochratoxin A	Inhibits mitochondrial ATP, potent teratogen, and immune suppressor [17-19]	Fatigue, dermatitis, irritated bowel [20-22]	Kidney disease and cancer [23,24]
MACROCYCLIC TRICHOTHECENES (Group D) **Organism: *Stachybotrys chartarum***				
6	Satratoxin G	DNA, RNA, and protein synthesis inhibition [25]	Fatigue [26]	Bleeding disorders, nervous system disorders [27,28]
7	Satratoxin H	Inhibits protein synthesis [25]	Fatigue [26]	Breathing issues [29]
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]	Lung and nasal olfactory problems [31]
11	Roridin H	Inhibits protein synthesis [25]	Weakened immune system [30]	
12	Roridin L-2	Immunosuppression [30]	Weakened immune system [30]	
13	Verrucarin A	Immunosuppression [30]		
14	Verrucarin J	Immunosuppression [30]		
GLIOTOXIN DERIVATIVE **Organisms: *Aspergillus fumigatus, Aspergillus terreus, Aspergillus niger, Aspergillus flavus***				
15	Gliotoxin	Attacks intracellular function in immune system [34]	Memory and breathing issues [35,36]	Immune dysfunction disorders [34]
ZEARALENONE **Organisms: *Fusarium species***				
16	Zearalenone	Estrogen mimic [37,38]	Early puberty, low sperm counts, cancer [39-42]	Cancer [39,40]

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