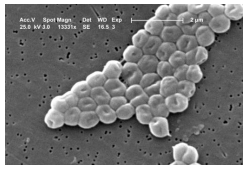
NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

POSITIVE CULTURES MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source Sinus	AGRAQUEST CONNECTIONS
ACINETOBACTER (bacteria)  {Information |Description=A scanning electron micrograph (SEM) of a highly magnified cluster of Gram-negative, non-motile "en:Acinetobacter baumannii" bacteria; Mag - 13331x. Source:CDC's [http://phil.cdc.gov/)  **Cross-Over Infection Soil/Insect To Human**	**Found in mosquito midgut [2, 32]** **Found in Soil [36] Pathogen of Plants and Insects [3] Survive in the environment for several days [36]**	**Wound Infections [36] Colonize Human [36] Blood infections [36] Pneumonia [36]**	**Positive: 4+ ACINETOBACTER 7/8/2005 Sutter Health Sacramento Sierra Laboratory Services M427243**	**Employee Exposed to Mosquito's on his "Laginex Project" [2, 32]** **"Thought to have been present at Agraquest during your employment period" "*NO*"**

ACINETOBACTER REFERENCES [but not limited to]

2 "STUDIES ON CULTURED AND UNCULTURED MICROBIOTA OF WILD CULEX QUINQUEFASCIATUS MOSQUITO MIDGUT BASED ON 16S RIBOSOMAL RNA GENE ANALYSIS," by VYANKATESH J., PIDIYAR, KAMLESH JANGID, MILIND S. PATOLE, AND YOGESH S. SHOUCHE, The American Society of Tropical Medicine and Hygiene - 2004 Jun;70(6):597-603

32 Persistent Wolbachia and Cultivable Bacteria Infection in the Reproductive and Somatic Tissues of the Mosquito Vector Aedes albopictus; Karima Zouache (Université de Lyon, Lyon, France - Université Lyon 1, Villeurbanne, CNRS, UMR5557, Ecologie Microbienne, Lyon, France) , Denis Voronin (Université de Lyon, Lyon, France - Université Lyon 1, Villeurbanne, CNRS, UMR5557, Ecologie Microbienne, Lyon, France) , Van Tran-Van (Université de Lyon, Lyon, France - Université Lyon 1, Villeurbanne, CNRS, UMR5557, Ecologie Microbienne, Lyon, France) , Laurence Mousson Institut Pasteur, Génétique moléculaire des Bunyavirus, Paris, France Niyaz Ahmed , Anna-Bella Failloux (Institut Pasteur, Génétique moléculaire des Bunyavirus, Paris, France Niyaz Ahmed) , and Patrick Mavingui (Université de Lyon, Lyon, France - Université Lyon 1, Villeurbanne, CNRS, UMR5557, Ecologie Microbienne, Lyon, France)

36 Department of Health and Human Services: Center for Disease Control and Prevention

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POSITIVE CULTURES MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source Sputum	AGRAQUEST CONNECTIONS
ACREMONIUM (fungi)  http://en.wikipedia.org/wiki/File:Acremonium_falciforme_PHIL_4167_lores.jpg BIOHAZARD Cross-Over Infection Soil/Plant/Insect To Human	Most likely to be encountered in clinical laboratories [1], Found in Soil [3, 12] Pathogen of Plants & Insects [3], Plant host; Grapevine [35] Plant Debris [12]	Acute lymphoblastic leukemia; neutropenia[3] Addison's disease[3] Allergies[7] Asthma[7] Chronicgranulocytic leukemia; neutropenia[3] Chronic granulomatous disease[3] Disseminated Acremonium strictum infection [3] Disseminated infection of various organs, including the brain [3] Dura mater prosthesis [3] Endocarditis [12] Endophthalmitis [12] Gastrointestinal colonization [3] [UNKNOWN CAUSE] Granulocytic sarcoma; neutropenia [3] Hay fever [7] Hypersensitivity pneumonitis[3, 7] Keratitis [12] Landry-Guillain-Barre´ syndrome [3] Meningitis [12] Multiple hypodense lesions in the spleen [3] Ocular [35] Onychomycosis [3, 12] Osteomyelitis [12] Peritonitis [12] Severe combined immunodeficiency disease [3] [*Employee was diagnosed with CVID in 2003 & began 3 years of IV Immunoglobulin infusions*] wounds [35] white piedra [3]	ACREMONIUM SPECIES POSITIVE 9/23/04 Quest Diagnostics GM6339205	"Thought to have been present at Agraquest during your employment period" "YES"

ACREMONIUM REFERENCED [but not limited to]

1 Paul Baumannla Department of Bacteriology and Immunology, University of California, Berkeley, California 94720

3 JOURNAL OF CLINICAL MICROBIOLOGY, May 1996, p. 1333–1336 Vol. 34, No. 5

7 Quantus Analytical - mold spore descriptions

12 Acremonium spp. (described by Link ex Fries in 1809); Dr Fungus •

References:

462. Collier, L., A. Balows, and M. Sussman. 1998. Topley & Wilson's Microbiology and Microbial Infections, 9th ed, vol. 4. Arnold, London, Sydney, Auckland, New York.

683. Espinel-Ingroff, A. 1998. Comparison of in vitro activities of the new triazole SCH56592 and theechinocandins MK-0991 (L-743,872) and LY303366 against opportunistic filamentous and dimorphic fungi and yeasts. J Clin Microbiol. 36:2950-2956.

730. Fincher, R. M., J. F. Fisher, R. D. Lovell, C. L. Newman, A. Espinel-Ingroff, and H. J. Shadomy. 1991. Infection due to the fungus Acremonium (Cephalosporium). Medicine. 70:398-409.

914. Guarro, J., W. Gams, I. Pujol, and J. Gene. 1997. Acremonium species: New emerging fungal opportunitis--In vitro antifungal susceptibilities and review. Clin. Infect. Dis.:1222-1229.

952. Gupta, A. K., and R. C. Summerbell. 1999. Combined distal and lateral subungual and white superficial onychomycosis in the toenails. J Am Acad Dermatol. 41:938-44.

1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.

1434. Marco, F., M. A. Pfaller, S. A. Messer, and R. N. Jones. 1998. In vitro activity of a new triazole antifungal agent, Sch 56592, against clinical isolates of filamentous fungi. Mycopathologia. 141:73-77.

1494. McGinnis, M. R., L. Pasarell, D. A. Sutton, A. W. Fothergill, C. R. Cooper, and M. G. Rinaldi. 1998. In vitro activity of voriconazole against selected fungi. Med Mycol. 36:239-242.

1581. Morrison, V. A., R. J. Haake, and D. J. Weisdorf. 1993. The spectrum of non- Candida fungalinfections following bone marrow transplantation. Medicine (Baltimore). 72:78-89.

1750. Penk, A., and L. Pittrow. 1999. Role of fluconazole in the long-term suppressive therapy of fungal infections in patients with artificial implants. Mycoses. 42:91-96.

2144 St-Germain, G., and R. Summerbell. 1996. Identifying Filamentous Fungi - A Clinical Laboratory Handbook, 1st ed. Star Publishing Company, Belmont, California.

35 Molecular mechanisms of pathogenicity; how do pathogenic microorganisms develop cross-kingdom host jumps?, pages 239-277; Peter van Baarlen, Alex van Belgium, Richard C. Summerbell, Pedro W. Crous, Bart P.H.J. Thomma Volume 31, Issue 3

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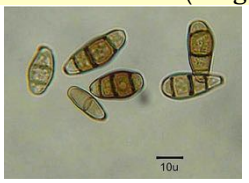
POSITIVE CULTURES **MICROORGANISM**	**PATHOGEN HABITAT**	**HUMAN HEALTH RELATED**	**IDENTIFIED Source Sinus**	**AGRAQUEST CONNECTIONS**
CURVULARIA (fungi  7  **Cross-Over Infection** **Soil/Plant** **To Human**	**Found in soil [16] Found in plants [16] Leaf spot disease of Rosa spa. [34] Leaf spot of Maize [34] Banana leaf spot [34] Melting out of turfgrasses [34] Leaf spot of sugarcane [34] Leaf spot of maize [34] ear rot of maize [34] Brown spot of asparagus [34] Leaf spot of rubber [34] Plant host; Grains, sugarcane etc. [35] Seedling foliage blight on sugarcane [34] From Tropical and Subtropical Areas [16] A contaminant [16]**	**Acute myelogenous leukemia [32] Alcoholism Allergic Bronchopulmonary - Mycoses [10, 16]Allergic fungal sinusitis [7,16] Allergic rhinitis [10] Allergies [7,30] Arm abscess [32] Asthma [7, 30] Asthmatic airway injury [30] Bacteremia [32] Brain abscess [28, 32] Bronchiectasis Cellulitis [32] Cerebral abscess [7, 16] Cerebral phaeohyphomycosis [34] Cerebritis [16] Chest wall erosion [32] Cholestasis [32] Chronic bronchitis [32] Cutaneous abscess [32] Dermatitis [30] Diarrhea [30] Disseminated infections [7,16] Diverticulitis Empyema [32] Endocarditis [16, 28] Enterocutancous fistula [32] Fatigue [30] Flu symptoms [30] Fungal ball production (sinuses) [10, 30] Fungal rhinosinusitis [34] general malaise (tiredness) [30] hair loss [30] Hay fever [7] Hypersensitive diseases [30] immuno suppression [30, 32] infections may develop in patients with intact immune systems [16] interference with blood cell formation Invasive sinusitis and cerebritis [34] Keratitis [16, 28] lesions of the Gastrointestinal tract [30] lesions of the stkin [30] liver cancer [30] Mediaslinitis [32] mpyema [32] mycetoma [16] Mycotic keratitis [34] Mycotoxins are believed to** **Continued next page**	**CURVULARIA - POSITIVE** **9/13/2006** **CLINICAL PATH LABS** **PH: 512-339-1275**	**"Thought to have been present at Agraquest during your employment period" "YES"**

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POSITIVE CULTURES MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source Sinus	AGRAQUEST CONNECTIONS
CURVULARIA *continued*		result in headaches [30] Mycotic keratitis [34] Nectotizing cutaneous infection [34] ocular Keratitis [7] Onychomycosis [7, 16, 28] Opportunistic infection [35] opportunistic infections of the cornea [7] opportunistic infections of the sinuses [7] Pelvic abscess [32] Pelvic infection [32] Pericardial [32] Periodontal disease phaeohyphomycosis [16] ~Dark lesion on the septum is a common presentation; sinusitis is associated with allergic rhinitis, polyps and/or some form of immunosuppression (immunodeficiency) [*Employee was diagnosed with CVD in 2003 & began 3 years of IV Immunoglobulin infusions*] phaeohyphomycosis [34] Fatal Cerebral phaeohyphomycosis [25]: pleural effusions [32] Pleural lesion [32] pneumonectomy for tuberculosis and aspergilloma [32] Pneumonia [7, 16, 32] psychological depression [30] Pulmonary abscess [32] resection malignant gastric polyp [32] Rheumatoid arthritis, Sinonasal mycetoma [29] Sinus colonization [35] skin infections [28 34] skin rashes [30] sore throats [30] spinal and muscle abscesses [32] Submaxillary gland [32] Systemic cutaneous infection [34] Thoracic wall abscess [32] Thumb abscess [32] Wound colonization [35] Vasculitis [32]		

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CURVULARIA REFERENCED [but not limited to]

7 Quantus Analytical - mold spore descriptions

10 The Spectrum of Fungal Allergy; International Archives of Allergy and Immunology 2008;145:58–86

16 Curvularia spp. (described by Boedijn in 1933); Dr Fungus

References:

62. Anaissie, E., G. P. Bodey, H. Kantarjian, J. Ro, S. E. Vartivarian, R. Hopfer, J. Hoy, and K. Rolston. 1989. New spectrum of fungal infections in patients with cancer. Rev Infect Dis. 11:369-378.

66. Anaissie, E. J., G. P. Bodey, and M. G. Rinaldi. 1989. Emerging fungal pathogens. Eur. J. Clin. Microbiol.Infect. Dis. 8:323-330.

462. Collier, L., A. Balows, and M. Sussman. 1998. Topley & Wilson's Microbiology and Microbial Infections, 9th ed, vol. 4. Arnold, London, Sydney, Auckland, New York.

531. de Hoog, G. S., J. Guarro, J. Gene, and M. J. Figueras. 2000. Atlas of Clinical Fungi, 2nd ed, vol. 1.Centraalbureau voor Schimmelcultures, Utrecht, The Netherlands.

558. Del Poeta, M., W. A. Schell, and J. R. Perfect. 1997. In vitro antifungal activity of pneumocandin L-743,872 against a variety of clinically important molds. Antimicrob. Agents Chemother. 41:1835-1836.

580. deShazo, R. D., and R. E. Swain. 1995. Diagnostic criteria for allergic fungal sinusitis. Journal of Allergy & Clinical Immunology. 96:24-35.

642. Ebright, J. R., P. H. Chandrasekar, S. Marks, M. R. Fairfax, A. Aneziokoro, and M. R. McGinnis. 1999. Invasive sinusitis and cerebritis due to Curvularia clavata in an immunocompetent adult. Clin Infect Dis. 28:687-689.

726. Fernandez, M., D. E. Noyola, S. N. Rossmann, and M. S. Edwards. 1999. Cutaneous phaeohyphomycosis caused by Curvularia lunata and a review of Curvularia infections in pediatrics. Pediat Inf Dis J. 18:727-731.

786. Fung-Tomc, J. C., B. Minassian, E. Huczko, B. Kolek, D. P. Bonner, and R. E. Kessler. 1995. In vitro antifungal and fungicidal spectra of a new pradimicin derivative, BMS-181184. Antimicrob. Agents Chemother. 39:295-300.

913. Guarro, J., T. Akiti, R. Almada-Horta, L. A. M. Leite, J. Gene, S. Ferreira-Gomes, C. Aguilar, and M Ortoneda. 1999. Mycotic keratitis due to Curvularia senegalensis and in vitro antifungal susceptibilities of Curvularia spp. J Clin Microbiol. 37:4170-4173.

1219. Knudtson, W. U., and C. A. Kirkbride. 1992. Fungi associated with bovine abortion in the northern plains states (USA). J Vet Diagn Invest. 4:181-5.

1262. Kuhn, F. A., and A. R. Javer. 2000. Allergic fungal rhinosinusitis - Perioperative management, prevention of recurrence, and role of steroids and antifungal agents. Otolaryngol Clin N Amer. 33:419-432,XI,NIL_5.

1285. Lake, F. R., J. H. Froudist, R. McAleer, R. L. Gillon, A. E. Tribe, and P. J. Thompson. 1991. Allergic bronchopulmonary fungal disease caused by Bipolaris and Curvularia. Australian & New Zealand Journal of Medicine. 21:871-4.

1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.

1429. Manning, S. C., S. D. Schaefer, L. G. Close, and F. Vuitch. 1991. Culture-positive allergic fungal sinusitis. Archives of Otolaryngology -- Head & Neck Surgery. 117:174-8.

1475. McAleer, R., D. B. Kroenert, J. L. Elder, and J. H. Froudist. 1981. Allergic bronchopulmonary disease caused by Curvularia lunata and Drechslera hawaiiensis. Thorax. 36:338-344.

1491. McGinnis, M. R., and L. Pasarell. 1998. In vitro testing of susceptibilities of filamentous ascomycetes to voriconazole, itraconazole, and amphotericin B, with consideration of phylogenetic implication. Antimicrob. Agents Chemother. 36:2353-2355.

1806. Pitt, J. I., A. D. Hocking, K. Bhudhasamai, B. F. Miscamble, K. A. Wheeler, and P. Tanboon-Ek. 1994. The normal mycoflora of commodities from Thailand. 2. Beans, rice, small grains and other commodities. International Journal of Food Microbiology. 23:35-43.

1927. Rinaldi, M. G., P. Phillips, J. G. Schwartz, R. E. Winn, G. R. Holt, F. W. Shagets, J. Elrod, G. Nishioka, and T. B. Aufdemorte. 1987. Human Curvularia infections. Report of five cases and review of the literature. Diagn. Microbiol. Infect. Dis. 6:27-39.

2042. Schell, W. A. 2000. Unusual fungal pathogens in fungal rhinosinusitis. Otolaryngol Clin N Amer. 33:367-373,X.

2144. St-Germain, G., and R. Summerbell. 1996. Identifying Filamentous Fungi - A Clinical Laboratory Handbook, 1st ed. Star Publishing Company, Belmont, California.

2202. Sutton, D. A., A. W. Fothergill, and M. G. Rinaldi (ed.). 1998. Guide to Clinically Significant Fungi, 1st ed. Williams & Wilkins, Baltimore.

2252. Travis, W. D., K. J. Kwon-Chung, D. E. Kleiner, A. Geber, W. Lawson, H. I. Pass, and D. Henderson. 1991. Unusual aspects of allergic bronchopulmonary fungal disease: report of two cases due to Curvularia organisms associated with allergic fungal sinusitis. Hum Pathol. 22:1240-8.

2270. Ujhelyi, M. R., R. H. Raasch, C. M. van der Horst, and W. D. Mattern. 1990. Treatment of peritonitis due to Curvularia and Trichosporon with amphotericin B. Rev. Infect. Dis. 12:621-7.

2297. Vartivarian, S. E., E. J. Anaissie, and G. P. Bodey. 1993. Emerging fungal pathogens in immunocompromised patients: classification, diagnosis, and management. Clin. Infect. Dis.17:S487-91.

2468. Yau, Y. C. W., J. deNanassy, R. C. Summerbell, M. A. G, and S. E. Richardson. 1994. Fungal sternal wound infection due to Curvularia lunata in a neonate with congential heart disease: Case report and review. Clin. Infect. Dis. 19:735-740

25 Fatal Cerebral Phaeohyphomycosis Due to Curvularia lunata in an Immunocompetent Patient; Elliot Carter and Carole Boudreaux - Department of Pathology, University of South Alabama, Mobile, Alabama;; Journal of Clinical Microbiology

28 Unusual rhinosinusitis caused by Curvularia fungi; From the Department of Radiology, Louisiana State University Health Sciences Center, New Orleans.

REFERENCES:

(1.) Wilhelmus KR, Jones DB. Curvularia keratitis. Trans Am Ophthalmol Soc 2001:99:111-30: discussion 130-2.

(2.) Nishioka G, Schwartz JG, Rinaldi MG, et al. Fungal maxillary sinusitis caused by Curvularia lunata. Arch Otolaryngol Head Neck Surg 1987; 113:665-6.

(3.) Ebright JR, Chandrasekar PH, Marks S, et al. Invasive sinusitis and cerebritis due to Curvularia clavata in an immunocompetent adult. Clin Infect Dis 1999;28:687-9.

(4.) Schell WA. Unusual fungal pathogens in fungal rhinosinusitis. Otolaryngol Clin North Am 2000,33:367-73.

29 Sinonasal mycetoma - Enrique Palacios, MD, FACR; Wesley Jones, MD; Jorge Alvernia, MD; From the Department of Radiology (Dr. Palacios and Dr. Jones) and the Department of Neurosurgery (Dr. Alvernia), Tulane University Hospital and Clinic, New Orleans.

REFERENCES:

(1.) Som PM, Brandwein MS. Inflammatory diseases. In: Som PM, Curtin HD. Head and Neck Imaging. 4th ed. St. Louis: Mosby; 2003:193-259.

(2.) Fellows DW, King VD, Conturo T, et al. In vitro evaluation of MR hypointensity in Aspergillus colonies. AJNR Am J Neuroradiol 1994;15(6):1139-44.

(3.) Gunduz K, Orguc S, Demireli P, et al. A case of mycetoma successfully treated with itraconazole and co-trimoxazole. Mycoses 2006;49(5):436-8.

(4.) Jiang RS, Hsu CY. Serum immunoglobulins and IgG subclass levels in sinus mycetoma. Otolaryngol Head Neck Surg 2004;130 (5):563-6.

(5.) Kumar J, Kumar A, Sethy P, Gupta S. The dot-in-circle sign of mycetoma on MRI. Diagn Interv Radiol 2007;13(4):193-5.

(6.) Klossek JM, Serrano E, Peloquin L, et al. Functional endoscopic sinus surgery and 109 mycetomas of paranasal sinuses. Laryngoscope 1997;107 (1): 112-17.

(7.) deShazo RID. Fungal sinusitis. Am J Med Sci 1998;316(1):39-45.

(8.) Pagella F, Matti E, De Bernardi F, et al. Paranasal sinus fungus ball: Diagnosis and management. Mycoses 2007;50(6):451-6.

30 Mold Biology and Mold Related Heath Issues

32 Actinomyces odontolyticus bacteremia

REFERENCES:

(1.) Morton HS. Actinomycosis. Can Med Assoc J 1940;42:231-6.

(2.) Molto JE. Differential diagnosis of rib lesions: a cast study from Middle Woodland southern Ontario circa 230 A.D. Am J Phys Anthropol 1990;83:439-47.

(3.) Bollinger O. Ueber eine neue Pilzkrankheit beim Rinde. Zentralblatt Medizinische Wissenschaft 1877;15:481-90.

(4.) Thompson L. Isolation and comparison of Actinomyces from human and bovine infections. Proceedings of the Staff Meetings Mayo Clinic 1950;25:81-90.

(5.) Israel J. Neue Beobachtungen auf dem Gebiete der Mykosen des Menschen. Archiv Pathologische Anatomie 1878;64:15-31.

(6.) Wolff M, Israel J. Ueber Reincultur des Actinomyces und seine Uebertragbarkeit auf Thiere. Archiv Pathologische Anatomie 1891;126:11-28.

(7.) Griner LA. Pathology of zoo animals. San Diego (CA): Zoologic Society of San Diego; 1983.

(8.) Batty I. Actinomyces odontolyticus, a new species of actinomycete actinomycete: Any of a group of generally low-oxygen–utilizing bacteria identified by a branching growth pattern that results in large threadlike structures. The filaments may break apart to form rods or spheroidal shapes. Some actinomycetes can form spores. regularly isolated from deep carious car·i·ous adj. Having caries; decayed. carious (ker´ēus), adj pertaining to caries or decay. dentine. J Path Bactiol 1958;75:455-9.

(9.) Morris JF, Kilbourn P. Systemic actinomycosis caused by Actinomyces odontolyticus. Ann Intern Med 1974;81:700.

(10.) Mitchell PD, Hintz CS, Haselby RC. Malar malar /ma·lar/ (ma´lar) 1. buccal; pertaining to the cheek. 2. zygomatic. ma·lar adj. Of or relating to the cheekbone or the cheek. n. The cheekbone. mass due to Actinomyces odontolyticus. J Clin Microbiol 1977;5:658-60.

(11.) Hutton RM, Behrens RH. Actinomyces odontolyticus as a cause of brain abscess. J Infect 1979;1:195-7.

(12.) Baron EJ, Angevine JM, Sundstrom W. Actinomycotic pulmonary abscess in an immunosuppressed patient. Am J Clin Pathol 1979;72:637-9.

(13.) Guillou JP, Durieux R, Bublanchet A, Chevrier L. Actinomyces odontolyticus, premiere etude realisee en France. C R Acad Sci Hebd Seances Acad Sci D 1977;285:1561-4.

(14.) Ruutu P, Pentikainen PJ, Larinkari U, Lempinen M. Hepatic actinomycosis presenting as repeated cholestatic reactions. Scand J Infect Dis 1982;14:235-8.

(15.) Klaaborg K-E, Kronborg O, Olsen H. Enterocutaneous fistulization due to Actinomyces odontolyticus. Report of a case. Dis Colon Rectum 1985;28:526-7.

(16.) Peloux Y, Raoult D, Chardon, Escarguel JP. Actinomyces odontolyticus infections: review of six patients. J Infect 1985;11:125-9.

(17.) Bellingan GJ. Disseminated actinomycosis: association with rapidly progressing cervical cord lesion. BMJ 1990;301:1323-4.

(18.) Hooi LN, Sin KS. A case of empyema (ĕmpē-ē`mə), persistent purulent discharge into a cavity such as the pleural space or the gallbladder. Empyema results as a complication of bacterial infections such as pneumonia and lung abscess. caused by actinomycosis. Med J Malaysia 1992;47:311-5.

(19.) Verrot D, Disdier P, Harle JR, Peloux Y, Garbes L, Arnaud A, et al. Actinomycose pulmonaire: responsabilite d=Actinomyces odontolyticus? Rev Med Interne in·terne n. Variant of intern. 1993;14:179-81.

(20.) Ibanez-Nolla J, Carratala J, Cucurull JJ, Corbella X, Oliveras A, Curull V, et al. Actinomicosis toracica.Enfenn Infecc Microbiol Clin 1993;11:433-6.

(21.) Dontfraid F, Ramphal R. Bilateral pulmonary infiltrates in association with disseminated actinomycosis. Clin Infect Dis 1994; 19:143-5.

(22.) Mateos-Colino A, Monte-Secades R, Ibanez-Alonso D, Santiago-Toscano J, Rububal-Rey, Solian del Cerro JL. Actinomyces como etiologia de empiema. Arch Bronconeumol 1995;31:293-5.

(23.) Bassiri AG, Girgis RE, Theodore J. Actinomyces odontolyicus thoracopulmonary infections. Two cases in lung and heart-lung recipients and a review of the literature. Chest 1996;109:1109-11.

(24.) Perez-Castrillon JL, Gonzalez-Castaneda C, del Campo-Matias F, Bellido-Casado J, Diaz G. Empyema necessitatis due to Actinomyces odontolyticus. Chest 1997;111:1144.

(25.) Litwin KA, Jadbabaie F, Villanueva M. Case of pleuropericardial disease caused by Actinomyces odontolyticus that resulted in cardiac tamponade Cardiac Tamponade Definition Cardiac tamponade occurs when the heart is squeezed by fluid that collects inside the sac that surrounds it. Description The heart is surrounded by a sac called the pericardium. . Clin Infect Dis 1999;29:219-20.

(26.) Brown JR. Human actinomycosis. A study of 181 subjects. Hum Pathol 1973;4:319-30.

(27.) Mitchell RG, Crow MR. Actinomyces odontolyticus isolated from the female genital tract. J Clin Pathol 1984;37:1379-83.

(28.) Stromberg N, Boren T. Actinomyces tissue specificity may depend on differences in receptor specificity for GalNAcbeta-containing glycoconjugates. Infect Immun 1992;60:3268-77.

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Rancho Mirage is a city in Riverside County, California, United States. The population was 13,249 at the 2000 census, but the seasonal (part-time) population can exceed 20,000.

, USA; and ([dagger]) Harbor-University of California at Los Angeles Medical Center, Torrance, California, USA

Dr. Cone is an infectious diseases clinician at the Eisenhower Medical Center, assistant clinical professor of medicine at University of California

The University of California has a combined student body of more than 191,000 students, over 1,340,000 living alumni, and a combined systemwide and campus endowment of just over $7.3 billion (8th largest in the United States).

at Los Angeles, and clinical professor of medicine at University of California, Riverside The University of California, Riverside, commonly known as UCR or UC Riverside, is a public research university and one of ten campuses of the University of California system. . His research interests include genetics, immune deficiencies, and sepsis.

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34 Biological Safety Principles and Practices; Laboratory, Growth Chamber, and Greenhouse Microbial Safety; Plant Pathogens and Plant-Associated Microorganisms of Significance to Human Health 4th Edition; Anne K. Vadaver, Sue A. Tolin, and Patricia Lambrecht

35 Molecular mechanisms of pathogenicity; how do pathogenic microorganisms develop cross-kingdom host jumps?, pages 239-277; Peter van Baarlen, Alex van Belgium, Richard C. Summerbell, Pedro W. Crous, Bart P.H.J. Thomma Volume 31, Issue 3

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POSITIVE CULTURES & IgG MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source Sputum & IgG level of exposure	AGRAQUEST CONNECTIONS
PENICILLIUM fungi  7 BIOHAZARD **Cross-Over Infection Soil, Decaying Vegetation To Human**	**Found in soil [7, 11] Found in decaying vegetation [11]**	**Allergic Asthma [10] Allergic rhinitis [10] Bone involvement [11] [UNKNOWN CAUSE] Carcinogenic [10, 11] Endocarditis [11] Endophtalmitis [11] External ear infections [7] Hypersensitivity pneumonitis [10] Immunosupression (immunodeficiency) [10] [*Employee was diagnosed with CVID in 2003 & began 3 years of IV Immunoglobulin infusions*] Keratitis [7, 11] Liver involvement [11] [UNKNOWN CAUSE] Lymphatic system involvement [11] [UNKNOWN CAUSE] Mutagenic [10] Necrotizing esophagitis [11] Neurotoxic [10, 11] Otomycosis [11] Peritonitis [11] Pneumonia [11] Respiratory infections [7] [UNKNOWN CAUSE] Spleen involvement [11] [UNKNOWN CAUSE] Teratongenic effects [10] Urinary tract infections [7, 11]**	**SPUTUM CULTURE PENICILLIUM SPECIES** **9/23/04 Quest Diagnostics GM6339205** **ENVIRONMENTAL IgG [PENICILLIUM HIGH POSITIVE]** **8-11-2004 PHYSICIAN PATH LABS**	**U.S. PATENTS** **6,004,774 Filed 11/25/1998** **6,638,910 Filed 11/27/2001** **6,911,338 Filed 4/11/2002** **AGRAQUEST PRODUCTS** **Arabesque**

PENICILLIUM REFERENCED [but not limited to]

7 Quantus Analytical - mold spore descriptions

10 The Spectrum of Fungal Allergy; International Archives of Allergy and Immunology 2008;145:58–86

11 Penicillium spp. (described by Link in 1809); Dr Fungus •
References:

423. Chariyalertsak, S., K. Supparatpinyo, T. Sirisanthana, and K. E. Nelson. 2001. A controlled trial of itraconazole as primary prophylaxis for systemic fungal infections in patients with advanced human immunodeficiency virus infection in Thailand. Clin Infect Dis. 34:277-284.

431. Cheng, N. C., W. W. Wong, C. P. Fung, and C. Y. Liu. 1998. Unusual pulmonary manifestations of disseminated Penicillium marneffei infection in three AIDS patients. Med Mycol. 36:429-432.

531. de Hoog, G. S., J. Guarro, J. Gene, and M. J. Figueras. 2000. Atlas of Clinical Fungi, 2nd ed, vol. 1. Centraalbureau voor Schimmelcultures, Utrecht, The Netherlands.

565. Deng, Z., J. L. Ribas, D. W. Gibson, and D. H. Connor. 1988. Infections caused by Penicillium marneffei in China and Southeast Asia: Review of eighteen published cases and report of fourmore Chinese cases. Rev. Infect. Dis. 10:640-652.

581. Deshpande, S. D., and G. V. Koppikar. 1999. A study of mycotic keratitis in Mumbai. Indian J Pathol Microbiol. 42:81-7.

803. Garbino, J., L. Kolarova, D. Lew, B. Hirschel, and P. Rohner. 2001. Fungemia in HIV-infected patients: A 12-year study in a tertiary care hospital. Aids Patient Care Stds. 15:407-410.

1094. Imwidthaya, P., K. Thipsuvan, A. Chaiprasert, S. Danchaivijitra, R. Sutthent, and J. Jearanaisilavong. 2001. Penicillium marneffei: types and drug susceptibility. Mycopathologia. 149:109-115.

1152. Kappe, R. 1999. Antifungal activity of the new azole UK-109, 496 (voriconazole). Mycoses. 42:83-86.

1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.

1371. Lortholary, O., D. W. Denning, and B. Dupont. 1999. Endemic mycoses: a treatment update. J Antimicrob Chemother. 43:321-331.

1489. McGinnis, M. R., N. G. Nordoff, N. S. Ryder, and G. B. Nunn. 2000. In vitro comparison of terbinafine and itraconazole against Penicillium marneffei. Antimicrob. Agents Chemother. 44:1407-1408.

1804. Pitt, J. I. 2000. Toxigenic fungi: which are important? Med Mycol. 38:17-22.

1805. Pitt, J. I., J. C. Basilico, M. L. Abarca, and C. Lopez. 2000. Mycotoxins and toxigenic fungi. Med Mycol. 38:41-46. •

1926. Rimek, D., T. Zimmermann, M. Hartmann, C. Prariyachatigul, and R. Kappe. 1999. Disseminated Penicillium marneffei infection in an HIV-positive female from Thailand in Germany. Mycoses. 42:25-28.

2114. Singh, P. N., K. Ranjana, Y. I. Singh, K. P. Singh, S. S. Sharma, M. Kulachandra, Y. Nabakumar, A. Chakrabarti, A. A. Padhye, L. Kaufman, and L. Ajello. 1999. Indigenous disseminated Penicillium marneffei infection in the state of Manipur, India: Report of four autochthonous cases. J Clin Microbiol. 37:2699-2702.

2144. St-Germain, G., and R. Summerbell. 1996. Identifying Filamentous Fungi - A Clinical Laboratory Handbook, 1st ed. Star Publishing Company, Belmont, California.

2200. Supparatpinyuo, K., S. Chiewchanvit, P. Hirunsri, C. Uthammachai, K. E. Nelson, and T. Sirisanthana. 1992. Penicillium marneffei infection in patients infected with human immunodeficiency virus. Clin. Infect. Dis. 14:871-874.

2202. Sutton, D. A., A. W. Fothergill, and M. G. Rinaldi (ed.). 1998. Guide to Clinically Significant Fungi, 1st ed. Williams & Wilkins, Baltimore.

2432. Wildfeuer, A., H. P. Seidl, I. Paule, and A. Haberreiter. 1998. In vitro evaluation of voriconazole against clinical isolates of yeasts, moulds and dermatophytes in comparison with itraconazole, ketoconazole, amphotericin B and griseofulvin. Mycoses. 41:309-319.

2456. Wong, S. S. Y., K. H. Wong, W. T. Hui, S. S. Lee, J. Y. C. Lo, L. Cao, and K. Y. Yuen. 2001. Differences in clinical and laboratory diagnostic characteristics of penicilliosis marneffei in human immunodeficiency virus (HIV)- and non-HIV-infected patients. J Clin Microbiol. 39:4535-4540.

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POSITIVE CULTURES MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source Numerous	AGRAQUEST CONNECTIONS
PSEUDOMONAS (bacteria)  http://en.wikipedia.org/wiki/Pseudomonas_syringae BIOHAZARD Cross-Over Infection Soil/Plant/Insect To Human	Found in mosquito midgut [2, 32] Found in soil [23] Found as pathogen of plants [23]	Mode of action: Cytotoxin; inhibition of protein synthesis; cytolytic activity; stimulation of extracellular toxin production and heat stress protection during in vivo growth [35] Adheres-epithelial cells - upper respiratory tract [23] Bacteremia [23, 34] Blood stream invasion [23] Bone and joint infections [23] Brain abscesses [23] Burn would infection [34] Central nervous system [23] Chronic lung infections [23] Dermatitis [23] Disrupts the respiratory epithelium [23] Emerging opportunistic pathogen [23] Endocarditis [23] Exerts a pro-inflammatory effect [23] Eye infections [23] Gastrointestinal infections [23] Impairs the normal function of human nasal cilia [23] Invades inner ear [23] Invades paranasal sinus [23] Meningitis [23, 34] Nosocmoial infections [34] Osteochondritis [23] Pneumonia [23, 34] Respiratory system infections [23] Septicemia [23, 34] Skin infection [23] Soft tissue infections [23] Systemic infections [23] Urinary tract infections [23]	CULTURE SINUS "MODERATE GROWTH PSEUDOMONAS 8/28/2002 UNILAB: GJ3285479 PSEUDOMONAS 9/26/2002 SACRAMENTO ENT SINUS MODERATE GROWTH PSEUDOMONAS 7/24/2003 V DESAI M.D. CULTURE, AEROBIC 1) MODERATE GROWTH PSEUDOMONAS GRAM STAIN MANY WHITE BLOOD CELLS, RARE GRAM NEGATIVE RODS, RARE GRAM POSITIVE COCCI, 5/6/2004 QUEST DIAGNOSTICS GM0568336 CULTURE AEROBIC LIGHT GROWTH PSEUDOMONAS 8/31/2004 QUEST DIAGNOSTICS GM 5388063 PSEUDOMONAS 9/23/2004 Unilab	Employee Exposed to Mosquito's on his "Laginex Project" [2, 32] U.S. PATENTS 6,911,338 Filed 4/11/2002 6,682,925 Filed 4/13/2000 6,844,182 Filed 5/15/2001 6,638,910 Filed 11/27/2001 6,635,245 Filed 3/21/2000 6,417,163 Filed 3/1/2000 6,406,691 Filed 1/26/1998 6,291,426 Filed 5/14/1999 6,277,624 Filed 1/26/1998 6,268,181 Filed 1/28/1998 6,103,228 Filed 12/30/1998 6,077,506 Filed 4/22/1999 6,060,051 Filed 5/8/1998 6,004,774 Filed 11/25/1998 5,976,564 Filed 10/8/1997 5,976,563 Filed 10/8/1997 5,919,447 Filed 1/22/1997 5,869,042 Filed 11/22/1996 5,753,222 Filed 11/18/1996 5,491,122 Filed 12/7/1994 AGRAQUEST PRODUCTS Arabesque, Garden solutions biofungicide wettable powder, Muscodor Albus products, Rhapsody as, Serenade solutions, Serenade, Serenade as, Serenade biofungicide wettable powder, Serenade garden ready-to-use (rtu)

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

PSEUDOMONAS REFERENCES [but not limited to]

2 "*STUDIES ON CULTURED AND UNCULTURED MICROBIOTA OF WILD CULEX QUINQUEFASCIATUS MOSQUITO MIDGUT BASED ON 16S RIBOSOMAL RNA GENE ANALYSIS,*" by VYANKATESH J., PIDIYAR, KAMLESH JANGID, MILIND S. PATOLE, AND YOGESH S. SHOUCHE, The American Society of Tropical Medicine and Hygiene - 2004 Jun;70(6):597-603

23 Todar's Online Textbook of Bacteriology; Kenneth Todar, PhD

34 Biological Safety Principles and Practices; Laboratory, Growth Chamber, and Greenhouse Microbial Safety; Plant Pathogens and Plant-Associated Microorganisms of Significance to Human Health 4th Edition; Anne K. Vadaver, Sue A. Tolin, and Patricia Lambrecht

35 Molecular mechanisms of pathogenicity; how do pathogenic microorganisms develop cross-kingdom host jumps?, pages 239-277; Peter van Baarlen, Alex van Belgium, Richard C. Summerbell, Pedro W. Crous, Bart P.H.J. Thomma Volume 31, Issue 3

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POSITIVE CULTURES **MICROORGANISM**	**PATHOGEN HABITAT**	**HUMAN HEALTH RELATED**	**IDENTIFIED Source Numerous**	**AGRAQUEST CONNECTIONS**
STAPH (bacteria) BIOHAZARD **Cross-Over Infection Plant/Insect To Human**	**Found in mosquito midgut [2, 32] Plant host; Arabidopsis [35]**	**Bacteremia [24] Boils [24] Carbuncles [24] Cellulitis [24] Diarrhea [24] Emesis [24] Endocarditis [24] Folliculitis [24] Food poisoning [24] Impetigo [24] Osteomyelitis [24] Osteomylitis [24] Pneumonia [24] Scaled skin syndrome [24] Sinusitis [24] Superficial to systemic infections [35] Toxic shock syndrome or TSS [24] Urinary tract infection [24] Wound infections [24]**	**STAPH** **8/8/2002** **9/12/2002** **9/17/2002** **10/9/2003** **10/9/2003** **5/5/2003** **5/19/2003** **Sacramento ENT** **STAPH** **9/11/2003** **Ben Goldwyn M.D.** **STAPH** **10/17/2003** **Archie D.D.S** **STAPH COCCI TITER** **11/18/2004** **(UCD) ORDER #5058304** **Stuart Cohen M.D.**	**Employee Exposed to Mosquito's on his "Laginex Project" [2, 32]** **"Thought to have been present at Agraquest during your employment period" "*NO*, not at the time Bell was at AQ. We got this strain in late 2001" and "*NO*, not at the time he was here"** **Studied by Agraquest Scientist, Jimmy Orjala; "A Novel Extracellular Diterpenoid with Antibacterial Activity from the Cyanobacterium Nostoc commune"** **(http://pubs.acs.org/doi/abs/10.1021/n9p80444x)** U.S. PATENTS 5,976,563 Filed 10/8/1997 5,976,564 Filed 10/8/1997 6,911,338 Filed 4/11/2002 AGRAQUEST PRODUCTS Muscodor Albus products

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

STAPH REFERENCES [but not limited to]

2 "STUDIES ON CULTURED AND UNCULTURED MICROBIOTA OF WILD CULEX QUINQUEFASCIATUS MOSQUITO MIDGUT BASED ON 16S RIBOSOMAL RNA GENE ANALYSIS," by VYANKATESH J., PIDIYAR, KAMLESH JANGID, MILIND S. PATOLE, AND YOGESH S. SHOUCHE, The American Society of Tropical Medicine and Hygiene - 2004 Jun;70(6):597-603

24 Staphylococcus; From MicrobeWiki, the student-edited microbiology resource

REFERENCES:

•Bacteriology at UW-Madison: Staphylococcus

•Gill S.R., Founts D. E., ARcher G. L., Mongodis E. F., Deboy R. T., Ravel J., Paulsen I.T., Kolonay J. F., Brinkac L., Beanan M., Dodson R. J., Daughtery S. C., Madupu R., Angiuoli S. V., Durkin A. S., Haft D. H., Vamathevan J., Khouri H., Utterback T., Lee C., Dimitrov G., Jiang L., Qin H., Weidman J., Tran K., Kang K., Hance I. R., Nelson K. E., Fraser C. M. "Insights on evolution of virulence and resistance from the complete genome analysis of an early methicillin resistant Staphylococcus aureus strain and a biofilm-producing methicillin-resistant Staphylococcus epidermidis strain." Journal of bacteriology 2005 Apr;187(7):2426-38.

•HGM 2002: Comparison of genomes between Staphylococcus epidermidis and Staphylococcus aureus

•Kuroda, M. et al. 2001. Whole genome sequencing of methicillin-resistant Staphylococcus aureus. The Lancet, 357: 1225-1240

•Newton Science Magazine: The Bug Stops Here

•Princeton University: Staphylococcus

•Sanger Institute: Staphylococcus aureus

•The Nemours Foundation: Staphylococcus aureus

•University of South Carolina: Streptococcus pneumoniae and Staphylococci

35 Molecular mechanisms of pathogenicity; how do pathogenic microorganisms develop cross-kingdom host jumps?, pages 239-277; Peter van Baarlen, Alex van Belgium, Richard C. Summerbell, Pedro W. Crous, Bart P.H.J. Thomma Volume 31, Issue 3

MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source	AGRAQUEST CONNECTIONS
RARE MUCUS (?)			Unrinalysis	?

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POSITIVE BLOOD SERUM MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source Blood Serum	AGRAQUEST CONNECTIONS
HISTOPLASMA YEAST (fungi)  Cross-Over Infection Soil/Bird/Bat To Human	The organism can be carried on the wings, feet, and beaks of birds and infect soil under roosting sites or manure accumulations inside or outside buildings. [4] At risk - Microbiology laboratory worker [4] [44]H. capsulatum grows in soils throughout the world. In the United States [4] Found in soil contaminated with bird droppings or excrements of bats [17, 27] the fungus is endemic and the proportion of people infected by H. capsulatum is higher in central and eastern states, especially along the valleys of the Ohio, Mississippi, and St. Lawrence rivers, and the Rio Grande. [NOT ENDEMIC TO CALIFORNIA] [4] CDC WARNING [26] Continued next page	Acute benign pulmonary infection [17] Causes histoplasmosis Chronic lung disease [4] Chronic pulmonary infection [17] Commonly involves the bones and skin [17] Disseminated histoplasmosis is fatal if untreated, but death can also occur in some patients even when medical treatment is received [4] Disseminated histoplasmosis, which involves spreading of the fungus to other organs outside the lungs [4] Fatal disseminated disease [17] Healthy individuals are affected [17] Hypersensitivity to H. capsulatum [4] Impaired vision and even blindness [4] May involve the thyroid glands [17] Opportunistic infection [35] Reticuloendothelial system (RES) is most frequently involved (The fungus resides intracellularly in RES cells) [17]	HISTO-YEAST POSITIVE CF 1:8 10/18/2003 Mayo Clinic - Arizona HISTOPLASMA ANTIGEN AG SERUM 0.06 11/18/2004 STUART COHEN (UCD) ORDER #4377112	(Agraquest tested "bird feathers" for microorganisms) See, "Companies seek out microbes to fight crop pests" http://www.post-gazette.com/pg/05322/608776.stm) "Thought to have been present at Agraquest during your employment period" "NO" U.S. PATENTS #6,004,774 Filed 11/25/1998 (see references) INVENTORS: Pamela Gail Marrone Sherry D. Heins Denise C. Manker Desmond R. Jimenez Patent states: "Additionally, an antifungal composition comprising an extract produced by B. subtilis strain ATCC 55614 may be used to treat human fungal diseases in which the disseminated disease propagule is a condidia, for example, Aspergillus sp., Histoplasma sp., and Tinea sp." Continued next page

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POSITIVE Blood Serum MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source	AGRAQUEST CONNECTIONS
HISTOPLASMA YEAST *continued*	Laboratory-associated histoplasmosis is a documented hazard in facilities conducting diagnostic or investigative work [6] Collecting and processing soil samples from endemic areas has caused pulmonary infections in laboratory workers [6] Isolates of Histoplasma must be handled with caution in a biological safety cabinet [17] Biosafety Level 3 practices and facilities are recommended for propagating and manipulating cultures already identified as H. capsulatum, as well as processing soil or other environmental materials known or likely to contain infectious conidia. [6]			U.S. PATENTS, con't #6,004,774 Filed 11/25/1998 Employee first sought emergency medical treatment on 1/18/1999 (*1st of 4 sinus surgeries* scheduled 7 days later) Four days after Bell sought emergency medical treatment; the Agraquest inventors on U.S. Patent #6,004,774 began signing away their interest rights on the patent: ASSIGNMENT OF ASSIGNORS INTEREST MARRONE PAMELA GAIL Exec Dt. 01/22/1999 HEINS, SHERRY D. Exec Dt: 01/26/1999 MANKER, DENISE C. Exec Dt: 01/261999 JIMENEZ, DESPOND R. Exec Dt: 01/25/1999 (see references)

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

HISTOPLASMA REFERENCES [but not limited to]

•United States Patent 6,004,774;
http://biotechawareness.com/images/6004774_histoplasma_aspergillus.pdf

•United States Patent and Trademark Office - **Patent Assignment Abstract of Title**;
http://biotechawareness.com/images/assignment_interest.pdf

4 HISTOPLASMOSIS: Protecting Workers at Risk; DHHS (NIOSH) PUBLICATION NO. 97-146 SEPTEMBER 1997

6 BMBL Section VII-B - Agent Summary Statements / Fungal Agents; CDC Office of Safety and Health

17 Histoplasma sp. Darling, 1906; Dr Fungus

References:

36. Akpuaka, F. C., H. C. Gugnani, and L. M. Iregbulam. 1998. African histoplasmosis: report of two patients treated with amphotericin B and ketoconazole. Mycoses. 41:363-364.

201. Bauder, B., A. Kubber-Heiss, T. Steineck, E. S. Kuttin, and L. Kaufman. 2000. Granulomatous skin lesions due to histoplasmosis in a badger (Meles meles) in Austria. Med Mycol. 38:249-253.

462. Collier, L., A. Balows, and M. Sussman. 1998. Topley & Wilson's Microbiology and Microbial Infections, 9th ed, vol. 4. Arnold, London, Sydney, Auckland, New York.

512. Darling, S. T. 1909. The morphology of the parasite (Histoplasma capsulatum) and the lesions of histoplasmosis, a fatal disease of tropical America. J. Exp. Med. 11:515-530.

623. Drouhet, E., and B. Dupont. 1983. Laboratory and clinical assessment of ketoconazole in deep-seated mycoses. Am. J. Med. 74 (Suppl. 1b):30-47.

683. Espinel-Ingroff, A. 1998. Comparison of in vitro activities of the new triazole SCH56592 and the echinocandins MK-0991 (L-743,872) and LY303366 against opportunistic filamentous and dimorphic fungi and yeasts. J Clin Microbiol. 36:2950-2956.

716. Farina, C., F. Vailati, A. Manisco, and A. Goglio. 1999. Fungaemia survey: a 10-year experience in Bergamo, Italy. Mycoses. 42:543-548.

749. Fojtasek, M. F., M. B. Kleiman, P. Connolly-Stringfield, R. Blair, and L. J. Wheat. 1994. The Histoplasma capsulatum antigen assay in disseminated histoplasmosis in children. Pediatric Infectious Disease Journal. 13:801-805.

858. Goldani, L. Z., C. Klock, A. Diehl, A. C. Monteiro, and A. L. Maia. 2000. Histoplasmosis of the thyroid. J Clin Microbiol. 38:3890-3891.

930. Gugnani, H. C., and F. Muotoe-Okafor. 1998. African histoplasmosis: a review. Rev. Iberoam. Micol. 14:155-159.

1152. Kappe, R. 1999. Antifungal activity of the new azole UK-109, 496 (voriconazole). Mycoses. 42:83-86.

1221. Kohler, S., L. J. Wheat, P. Connolly, C. Schnizlein-Bick, M. Durkin, M. Smedema, J. Goldberg, and E. Brizendine. 2000. Comparison of the echinocandin caspofungin with amphotericin B for treatment of histoplasmosis following pulmonary challenge in a murine model. Antimicrob. Agents Chemother. 44:1850-1854.

1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.

1338. Li, R. K., M. A. Ciblak, N. Nordoff, L. Pasarell, D. W. Warnock, and M. R. McGinnis. 2000. In vitro activities of voriconazole, itraconazole, and amphotericin B against Blastomyces dermatitidis, Coccidioides immitis and Histoplasma capsulatum. Antimicrob. Agents Chemother. 44:1734-1736.

1371. Lortholary, O., D. W. Denning, and B. Dupont. 1999. Endemic mycoses: a treatment update. J Antimicrob Chemother. 43:321-331.

1655. Norris, S., J. Wheat, D. McKinsey, D. Lancaster, B. Katz, J. Black, M. Driks, R. Baker, K. Israel, D. Traeger, S. Moriarity, J. Fraiz, D. Webb, and T. Slama. 1994. Prevention of relapse of histoplasmosis with fluconazole in patients with acquired immunodeficiency syndrome. Am. J. Med. 96:504-508.

2067. Sebghati, T. S., J. T. Engle, and W. E. Goldman. 2000. Intracellular parasitism by Histoplasma capsulatum: Fungal virulence and calcium dependence. Science. 290:1368-1372.

2144. St-Germain, G., and R. Summerbell. 1996. Identifying Filamentous Fungi - A Clinical Laboratory Handbook, 1st ed. Star Publishing Company, Belmont, California.

2202. Sutton, D. A., A. W. Fothergill, and M. G. Rinaldi (ed.). 1998. Guide to Clinically Significant Fungi, 1st ed. Williams & Wilkins, Baltimore.

2413. Wheat, J., P. Marichal, H. Vanden Bossche, A. L. Monte, and P. Connolly. 1997. Hypothesis on the mechanisms of resistance to fluconazole in Histoplasma capsulatum. Antimicrob. Agents Chemother. 41:410-414.

2414. Wheat, J., S. MaWhinney, R. Hafner, D. McKinsey, D. Chen, A. Korzun, K. J. Shakan, P. Johnson, R. Hamill, D. Bamberger, P. Pappas, J. Stansell, S. Koletar, K. Squires, R. A. Larsen, T. Cheung, N. Hyslop, K. K. Lai, D. Schneider, C. Kauffman, M. Saag, W. Dismukes, W. Powderly, and National Institute of allergy and Infectious Diseases Acquired Immunodeficiency Syndrome Clinical Trials Group and Myocses Study Group. 1997. Treatment of histoplasmosis with fluconazole in patients with acquired immunodeficiency syndrome. Am. J. Med. 103:223-232.

2416. Wheat, L. J., P. Connolly-Stringfield, R. B. Kohler, P. T. Frame, and M. R. Gupta. 1989. Histoplasma capsulatum polysaccharide antigen detection in diagnosis and management of disseminated histoplasmosis in patients with acquired immunodeficiency syndrome. Am. J. Med. 87:396-400.

26 Health News; CDC warns of the fungus histoplasmosis; UPI.com - 100 years of journalistic excellence

27 Church Volunteers Stricken With Lung Ailment, By Roni Caryn Rabin, Pulblised December 22, 2008: The New York Times

35 Molecular mechanisms of pathogenicity; how do pathogenic microorganisms develop cross-kingdom host jumps?, pages 239-277; Peter van Baarlen, Alex van Belgium, Richard C. Summerbell, Pedro W. Crous, Bart P.H.J. Thomma Volume 31, Issue 3

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POSITIVE IgG's (level of exposure) MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
ALTERNARIA (fungi)   **Cross-Over Infection Soil/Plant To Human**	**Found in soil [7, 13] Found in plants [13] Plant host; Wide host range [35] common laboratory contaminant [13]**	**Mode of action; Disruption of membrane function, suppression of innate immune response, toxic activity against susceptible cell organelles, disruption of cell physiology, creamed signaling and cell cycle [35] Allergic Asthma [10] Allergies [7] Asthma [7] Mode of action; Disruption of membrane function, suppression of innate immune response, toxic activity against susceptible cell organelles, disruption of cell physiology, creamed signaling and cell cycle [35] Allergic Asthma [10] Allergies [7] Asthma [7]Hypertrophic sinusitis - chronic [13] Invasive disease [13] Keratitis [13] Nasal and subcutaneous lesions [7] Onychomycosis [13] Opportunistic pathogen [13] Osteomyelitis [13] Otitis media [13] phaeohyphomycosis [13, 34] ~Dark lesion on the septum is a common presentation; sinusitis is associated with allergic rhinitis, polyps and/or some form of immunosuppression (immunodeficiency) [*Employee was diagnosed with CVD in 2003 & began 3 years of IV Immunoglobulin infusions*]** **Continued next page**	**[ALTERNARIA POSITIVE** **8-11-2004** **PHYSICIAN PATH LABS**	**"Thought to have been present at Agraquest during your employment period" "YES"** U.S. PATENTS 6,852,317 Filed 9/27/2001 6,844,182 Filed 5/15/2001 6,682,925 Filed 4/13/2000 6,638,910 Filed 11/27/2001 6,635,245 Filed 3/21/2000 6,586,231 Filed 12/15/2000 6,524,577 Filed 9/27/2000 6,417,163 Filed 3/1/2000 6,291,426 Filed 5/14/1999, 6,277,624 Filed 1/26/1998 6,103,228 Filed 12/30/1998 6,077,506 Filed 4/22/1999 6,004,774 Filed 11/25/1998 5,919,447 Filed 1/22/1997 5,869,042 Filed 11/22/199, 5,753,222 Filed 11/18/1996 AGRAQUEST PRODUCTS Arabesque, Rhapsody as0, Serenade Solutions, Serenade, Serenade as, Serenade aso Garden solutions bifofungicidal liquid concentrate. Serenade aso Plant guardian biofungicide Continued next page

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

POSITIVE IgG's (level of exposure) MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
ALTERNARIA (fungi) ***continued***		**Sinus colonization** [35] **Sinusitis** [13, 34] **Ulcerated cutaneous infections** [13, 34]		AGRAQUEST PRODUCTS continued liquid concentrate, Serenade aso Serenade solutions biofungicide concentrate, Serenade aso, Serenade MAX Garden solutions biofungicide wettable powder , Serenade MAX Plant guardian biofungicide wettable powder, Serenade MAX Serenade solutions biofungicide for home and garden, Serenade MAX, Sonata aso

ALTERNARIA REFERENCES [but not limited to]

7 Quantus Analytical - mold spore descriptions

10 The Spectrum of Fungal Allergy; International Archives of Allergy and Immunology 2008;145:58–86

13 Alternaria spp. (described by Nees ex Wallroth in 1816); Dr Fungus

References:

66. Anaissie, E. J., G. P. Bodey, and M. G. Rinaldi. 1989. Emerging fungal pathogens. Eur. J. Clin. Microbiol. Infect. Dis. 8:323-330.

462. Collier, L., A. Balows, and M. Sussman. 1998. Topley & Wilson's Microbiology and Microbial Infections, 9th ed, vol. 4. Arnold, London, Sydney, Auckland, New York.

558. Del Poeta, M., W. A. Schell, and J. R. Perfect. 1997. In vitro antifungal activity of pneumocandin L-743,872 against a variety of clinically important molds. Antimicrob. Agents Chemother. 41:1835-1836.

590. Diaz, M., R. Puente, and M. A. Treviño. 1990. Response of long-running Alternaria alternata infection to fluconazole. Lancet. 336:513.

802. Garau, J., R. D. Diamond, L. B. Lagrotteria, and S. A. Kabins. 1977. Alternaria osteomyelitis [letter]. Ann. Intern. Med. 86:747-8.

1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.

1429. Manning, S. C., S. D. Schaefer, L. G. Close, and F. Vuitch. 1991. Culture-positive allergic fungal sinusitis. Archives of Otolaryngology -- Head & Neck Surgery. 117:174-8.
1581. Morrison, V. A., R. J. Haake, and D. J. Weisdorf. 1993. The spectrum of non- Candida fungal infections following bone marrow transplantation. Medicine (Baltimore). 72:78-89.
1847. Pritchard, R. C., and D. B. Muir. 1987. Black fungi: a survey of dematiaceous hyphomycetes from clinical specimens identified over a five year period in a reference laboratory. Pathology. 19:281-4.
1864. Radford, S. A., E. M. Johnson, and D. W. Warnock. 1997. In vitro studies of activity of voriconazole (UK-104,496), a new triazole antifungal agent, against emerging and less-common mold pathogens. Antimicrob. Agents Chemother. 41:841-843.
2042. Schell, W. A. 2000. Unusual fungal pathogens in fungal rhinosinusitis. Otolaryngol Clin N Amer. 33:367-373,X.
2144. St-Germain, G., and R. Summerbell. 1996. Identifying Filamentous Fungi - A Clinical Laboratory Handbook, 1st ed. Star Publishing Company, Belmont, California.
2297. Vartivarian, S. E., E. J. Anaissie, and G. P. Bodey. 1993. Emerging fungal pathogens in immunocompromised patients: classification, diagnosis, and management. Clin. Infect. Dis. 17:S487-91.
2306. Vennewald, I., M. Henker, E. Klemm, and C. Seebacher. 1999. Fungal colonization of the paranasal sinuses. Mycoses. 42:33-36.
2345 Wadhwani, K., and A. K. Srivastava. 1984. Fungi from otitis media of agricultural field workers. Mycopathologia. 88:155-9.
ole, amphotericin B and griseofulvin. Mycoses. 41:309-319.
2432 Wildfeuer, A., H. P. Seidl, I. Paule, and A. Haberreiter. 1998. In vitro evaluation of voriconazole against clinical isolates of yeasts, moulds and dermatophytes in comparison with itraconazole, ketoconazole, amphotericin B and griseofulvin. Mycoses. 41:309-319.

34 Biological Safety Principles and Practices; Laboratory, Growth Chamber, and Greenhouse Microbial Safety; Plant Pathogens and Plant-Associated Microorganisms of Significance to Human Health 4th Edition; Anne K. Vadaver, Sue A. Tolin, and Patricia Lambrecht

35 Molecular mechanisms of pathogenicity; how do pathogenic microorganisms develop cross-kingdom host jumps?, pages 239-277; Peter van Baarlen, Alex van Belgium, Richard C. Summerbell, Pedro W. Crous, Bart P.H.J. Thomma Volume 31, Issue 3

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POSITIVE IgG's (level of exposure) MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
ASPERGILLUS (fungi)  **Cross-Over Infection** **Soil/Plant/Decomposing organic Matter To Human** **USED AS BIO-CONTROL PRODUCT** Biopesticides: A flatus strain AF36 (Arizona Cotton Research and Protection Council), a non-toxin-producing strain registered (EPA) on cotton fields in Texas & Arizona for control of strains of A. Flavus which produce aflatoxin. A flatus strain NRRL 21882m registered for use in peanut crops to control aflatoxin-producing strains of A. Flatus (Circle One Global, nIc. Shellman, GA) [34]	Found in soil [7, 14] found in decomposing organic matter [31] Plant host; Cotton, peanut, maize seed [35] common laboratory contaminant [14]	Asthma [7, 30] Asthmatic airway injury [30] Asthmatic changes are often present, including a polymorphous inflammatory infiltrate of eosinophils [31] Bronchial wall is inflamed [31] Bronchopulmonary aspergillosis [34] Bronchocentric granulomatosis [31] Carcinogenic [10, 14] Cerebral [34] Cells include histologically viable and necrotic eosinophils and other inflammatory cells, cellular debris is often abundant [31] Cellular debris, and mucus [31] Cerebral aspergillosis [14, 34] Charcot-Leyden crystals can be prominente [31] Chronic or exudative bronchiolitis [31] Cutaneous aspergillosis [14, 34] Dermatitis [30] Diarrhea [30] Dsseminated aspergillosis [14] Endocarditis [14, 34] Endophthalmitis [14, 34] Eosinophilic Pneumonia [31] Fatigue [30] Fibrosis often accompany these inflammatory changes [31] Continued next page	**ASPERGILLUS POSITIVE** 8-11-2004 PHYSICIAN PATH LABS	U.S. PATENTS 6,004,774 Filed 11/25/1998 5,491,122 Filed 12/7/1994 6,004,774 Filed 11/25/1998 6,911,338 Filed 4/11/2002

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

POSITIVE IgG's (level of exposure) MICROORGANISM		HUMAN HEALTH RELATED		
ASPERGILLUS *continued*		**Fibrosis with destruction of bronchial structural elements leads to Bronchiectasis and parenchymal scarring [31] Flu symptoms [30] Fungal ball production (sinuses) [10, 30] General malaise (tiredness) [30] Goblet cell hyperplasia [31] Hair loss [30] Hay fever [7] Hepatocellular carcinoma [14] Hepatosplenic aspergillosis [14, 34] Hypersensitive diseases [30] Hypersensitivity pneumonitis [7, 10] Immunosupression (immunodeficiency) [10, 14, 30] [*Employee was diagnosed with CVD in 2003 & began 3 years of IV Immunoglobulin infusions*] Interference with blood cell formation. Lesions of the Gastrointestinal tract [30] Lesions of the skin [30] Liver cancer [30] Lymphocytes, and plasma cells [31] Meningitis [14, 34] Mucoid impaction of bronchi, bronchial lumens are filled and distended by mucus and inflammatory cells [31] Muscular and cartilaginous loss [31] Mutagenic [10] Mycotoxins are believed to result in headaches [30] Myocarditis [14, 34] Necrotizing scleritis [34] Neurotoxic [10] Onychomycosis [14, 34] Opportunist infection [35] Osteomyelitis [14, 34] Otomycosis [14, 34] Pathologic manifestations of ABPA include mucoid impaction of bronchi [31] Persistent airway inflammation [31] Psychological depression [30] Pulmonary aspergillosis [14, 34] Sinonasal mycetoma [29] Skin rashes [30] Sinusitis [34] Sore throats [30] Squamous metaplasia [31] Systemic aspergillosis [34] Teratongenic effects [10] Thickening of the basement membrane [31] Ulceration [31]**		

ASPERGILLUS REFERENCES [but not limited to]

7 Quantus Analytical - mold spore descriptions

10 The Spectrum of Fungal Allergy; International Archives of Allergy and Immunology 2008;145:58–86

14 Aspergillus spp. (described by Micheli ex Link in 1809); Dr Fungus

References:

119. Arikan, S., M. Lozano-Chiu, V. Paetznick, S. Nangia, and J. H. Rex. 1999. Microdilution susceptibility testing of amphotericin B, itraconazole, and voriconazole against clinical isolates of Aspergillus and Fusarium species. J Clin Microbiol. 37:3946-3951.

120. Arikan, S., M. Lozano-Chiu, V. Paetznick, and J. H. Rex. 2001. In vitro susceptibility testing methods for caspofungin against Aspergillus and Fusarium isolates. Antimicrob. Agents Chemother. 45:327-330.

122. Arikan, S., and J. H. Rex. 2000. New agents for treatment of systemic fungal infections. Emerging Drugs. 5:135-160.

124. Arikan, S., O. Uzun, Y. Cetinkaya, S. Kocagoz, M. Akova, and S. Unal. 1998. Primary cutaneous aspergillosis in human immunodeficiency virus-infected patients: Two cases and review. Clin Infect Dis. 27:641-643.

462. Collier, L., A. Balows, and M. Sussman. 1998. Topley & Wilson's Microbiology and Microbial Infections, 9th ed, vol. 4. Arnold, London, Sydney, Auckland, New York.

567. Denning, D. W. 1998. Invasive aspergillosis. Clin Infect Dis. 26:781-803. • 568. Denning, D. W. 1996. Therapeutic outcome in invasive aspergillosis. Clin. Infect. Dis. 23:608-615. • 569. Denning, D. W. 1994. Treatment of invasive aspergillosis. J. Infect. 28 (Suppl. 1): 25-33. 572. Denning, D. W., A. Marinus, J. Cohen, D. Spence, R. Herbrecht, L. Pagano, C. Kibbler, V. Kcrmery, F. Offner, C. Cordonnier, U. Jehn, M. Ellis, L. Collette, R. Sylvester, and EORTC Invasive Fungal Infections Cooperative Group. 1998. An EORTC multicentre prospective survey of invasive aspergillosis in haematological patients: Diagnosis and therapeutic outcome. J. Infect. 37:173-180.

573. Denning, D. W., S. A. Radford, K. L. Oakley, L. Hall, E. M. Johnson, and D. W. Warnock. 1997. Correlation between in-vitro susceptibility testing to itraconazole and in- vivo outcome of Aspergillus fumigatus infection. J. Antimicrob. Chemother. 40:401-414.

578. Denning, D. W., K. Venkateswarlu, K. L. Oakley, M. J. Anderson, N. J. Manning, D. A. Stevens, D. W. Warnock, and S. L. Kelly. 1997. Itraconazole resistance in Aspergillus fumigatus. Antimicrob. Agents Chemother. 41:1364-1368.

579. Denning, D. W., and P. Warn. 1999. Dose range evaluation of liposomal nystatin and comparisons with amphotericin B and amphotericin B lipid complex in temporarily neutropenic mice infected with an isolate of Aspergillus fumigatus with reduced susceptibility to amphotericin B. Antimicrob. Agents Chemother. 43:2592-2599.

608. Dornbusch, H. J., C. E. Urban, H. Pinter, G. Ginter, R. Fotter, H. Becker, T. Miorini, and C. Berghold. 1995. Treatment of invasive pulmonary aspergillosis in severely neutropenic children with malignant disorders using liposomal amphotericin B (AmBisome), granulocyte colony-stimulating factor, and surgery: report of five cases. Pediatric Hematology & Oncology. 12:577-86.

638. Duthie, R., and D. W. Denning. 1995. Aspergillus fungemia: Report of two cases and review. Clin. Infect. Dis. 20:598-605.

659. Elgamal, E. A., and W. R. Murshid. 2000. Intracavitary administration of amphotericin B in the treatment of cerebral aspergillosis in a non immune-compromised patient: case report and review of the literature. Brit J Neurosurg. 14:137-141.

683. Espinel-Ingroff, A. 1998. Comparison of in vitro activities of the new triazole SCH56592 and the echinocandins MK-0991 (L-743,872) and LY303366 against opportunistic filamentous and dimorphic fungi and yeasts. J Clin Microbiol. 36:2950-2956.

740. Fisher, N. C., S. Singhal, S. J. Miller, J. G. M. Hastings, and D. J. Mutimer. 1999. Fungal infection and liposomal amphotericin B (AmBisome) therapy in liver transplantation: a 2 year review. J Antimicrob Chemother. 43:597-600.

748. Flynn, P. M., H. L. Magill, J. J. Jenkins, T. Pearson, W. M. Crist, and W. T. Hughes. 1990. Aspergillus osteomyelitis in a child treated for acute lymphoblastic leukemia. Pediatr. Infect. Dis. J. 9:733-736.

780 Fujita, H., H. Masuda, T. Nakajima, K. Yada, M. Watanabe, and Y. Kagitani. 1995. [Protective effect of human macrophage colony-stimulating factor on fungal infection (2). In vitro effect of human macrophage colony-stimulating factor on systemic aspergillosis and in vitro effect on the activities of macrophage]. Kansenshogaku Zasshi - Journal of the Japanese Association for Infectious Diseases. 69:582-9.

800 Galimberti, R., A. Kowalczuk, I. H. Parra, M. G. Ramos, and V. Flores. 1998. Cutaneous aspergillosis: a report of six cases. Brit J Dermatol. 139:522-526. •

811. Garrett, D. O., E. Jochimsen, and W. Jarvis. 1999. Invasive Aspergillus spp infections in rheumatology patients. J Rheumatol. 26:146-149.

817. Gefter, W. B. 1992. The spectrum of pulmonary aspergillosis. Journal of Thoracic Imaging. 7:56-74.

829. Germaud, P., and E. Tuchais. 1995. Allergic bronchopulmonary aspergillosis treated with itraconazole. Chest. 107:883. •

830. Gerson, S. L., G. H. Talbot, S. Hurwitz, B. L. Strom, E. J. Lusk, and P. A. Cassileth. 1984. Prolonged granulocytopenia: the major risk factor for invasive pulmonary aspergillosis in patients with acute leukemia. Ann. Intern. Med. 100:345-351.

839. Gillespie, M. B., and B. W. O'Malley. 2000. An algorithmic approach to the diagnosis and management of invasive fungal rhinosinusitis in the immunocompromised patient. Otolaryngol Clin N Amer. 33:323-334,IX.

852. Glimp, R. A., and A. S. Bayer. 1983. Pulmonary aspergilloma. Diagnostic and therapeutic considerations. Arch Intern Med. 143:303-8.

874. Gordon, G., and N. A. Giddings. 1994. Invasive otitis externa due to Aspergillus species: Case report and review. Clin. Infect. Dis. 19:866-870. •

890. Graybill, J. R., R. Bocanegra, L. K. Najvar, M. F. Luther, and D. Loebenberg. 1998. Posaconazole treatment of murine invasive aspergillosis. J Antimicrob Chemother. 42:539-542.

910. Grossi, P., C. Farina, R. Fiocchi, and D. Dalla Gasperina. 2000. Prevalence and outcome of invasive fungal infections in 1,963 thoracic organ transplant recipients - A multicenter retrospective study. Transplantation. 70:112-116. 938. Gumbo, T., A. J. Taege, S. Mawhorter, M. C. McHenry, B. H. Lytle, D. M. Cosgrove, and S. M. Gordon. 2000. Aspergillus valve endocarditis in patients without prior cardiac surgery. Medicine. 79:261-268.

952. Gupta, A. K., and R. C. Summerbell. 1999. Combined distal and lateral subungual and white superficial onychomycosis in the toenails. J Am Acad Dermatol. 41:938-44.

958. Gurwith, M. 1999. Clinical efficacy of amphotericin B colloidal dispersion against infections caused by Aspergillus spp. Chemotherapy. 45:34-38.

974. Halpern, M., S. Szabo, E. Hochberg, G. S. Hammer, J. Lin, A. C. Gurtman, H. S. Sacks, R. S. Shapiro, and S. Z. Hirschman. 1992. Renal aspergilloma: an unusual cause of infection in a patient with the acquired immunodeficiency syndrome. Am. J. Med. 92:437-440.

1048. Ho, P. L., and K. Y. Yuen. 2000. Aspergillosis in bone marrow transplant recipients. Crit Rev Oncol Hematol.34:55-69.

1056. Hohler, T., M. Schnütgen, W. J. Mayer, and K. H. Mayer zum Büschenfeld. 1995. Pulmonary aspergilloma in a patient with AIDS. Thoras. 50:312-313.

1091. Ikeda, F., Y. Wakai, S. Matsumoto, K. Maki, E. Watabe, S. Tawara, T. Goto, Y. Watanabe, F. Matsumoto, and S. Kuwahara. 2000. Efficacy of FK463, a new lipopeptide antifungal agent, in mouse models of disseminated candidiasis and aspergillosis. Antimicrob. Agents Chemother. 44:614-618.

1129. Johnson, E. M., J. O. Ojwang, A. Szekely, T. L. Wallace, and D. W. Warnock. 1998. Comparison of in vitro antifungal activities of free and liposome-encapsulated nystatin with those of four amphotericin B formulations. Antimicrob. Agents Chemother. 42:1412-1416.

1130. Johnson, E. M., A. Szekely, and D. W. Warnock. 1998. In-vitro activity of voriconazole, itraconazole and amphotericin B against filamentous fungi. J Antimicrob Chemother. 42:741-745.

1152. Kappe, R. 1999. Antifungal activity of the new azole UK-109, 496 (voriconazole). Mycoses. 42:83-86.

1161. Katz, G., K. Winchester, and S. Lam. 1993. Ocular aspergillosis isolated in the anterior chamber. Ophthalmology. 100:1815-1818.

1271. Kurup, V. P., and B. Banerjee. 2000. Fungal allergens and peptide epitopes. Peptides. 21:589-599.

1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.

1363. Loo, V. G., C. Bertrand, C. Dixon, D. Vitye, B. DeSalid, A. P. H. McLean, A. Bronx, and H. G. Robson. 1996. Control of construction-associated nosocomial aspergillosis in an antiquated hematology unit. Infect. Control Hosp. Epidemiol. 17:360-364.

1386. Lucas, G. M., P. Tucker, and W. G. Merz. 1999. Primary cutaneous Aspergillus nidulans infection associated with a Hickman catheter in a patient with neutropenia. Clin Infect Dis. 29:1594-1596.

1406. Maertens, J., I. Raad, C. A. Sable, A. Ngai, R. Berman, T. F. Patterson, D. Denning, and T. Walsh. 2000. Multicenter, noncomparative study to evaluate safety and efficacy of caspofungin in adults with aspergillosis refractory or intolerant to amphotericin B, amphotericin B lipid formulations, or azoles. 40th Interscience Conference on Antimicrobial Agents and Chemotherapy, Abstract No. 1103.

1434. Marco, F., M. A. Pfaller, S. A. Messer, and R. N. Jones. 1998. In vitro activity of a new triazole antifungal agent, Sch 56592, against clinical isolates of filamentous fungi. Mycopathologia.141:73-77.

1536. Mikolich, D. J., L. J. Kinsella, G. Skowron, J. Friedman, and A. M. Sugar. 1996. Aspergillus meningitis in an immunocompetent adult successfully treated with itraconazole. Clin. Infect. Dis. 23:1318-1319.

1569. Moore, C. B., C. M. Walls, and D. W. Denning. 2000. In vitro activity of the new triazole BMS-207147 against Aspergillus species in comparison with itraconazole and amphotericin B. Antimicrob. Agents Chemother. 44:441-443.

1576. Mori, T., M. Matsumura, K. Yamada, S. Irie, K. Oshimi, K. Suda, T. Oguri, and M. Ichinoe. 1998. Systemic aspergillosis caused by an aflatoxin-producing strain of Aspergillus flavus. Med Mycol. 36:107-112.

1622. National Committee for Clinical Laboratory Standards. 1998. Reference method for broth dilution antifungal susceptibility testing of conidium- forming filamentous fungi; proposed standard. NCCLS document M38-P. National Committee for Clinical Laboratory Standards, Wayne, Pa.

1669. Oakley, K. L., C. B. Moore, and D. W. Denning. 1998. In-vitro activity of voriconazole against Aspergillus spp. and comparison with itraconazole and amphotericin B. J. Antimicrob. Chemother. 42:91-94.

1670. Oakley, K. L., C. B. Moore, and D. W. Denning. 1998. In vitro activity of the echinocandin antifungal agent LY303,366 in comparison with itraconazole and amphotericin B against Aspergillus spp. Antimicrob. Agents Chemother. 42:2726-2730.

1975. Rouby, Y., E. Combourieu, J. D. Perrier-Gros-Claude, C. Saccharin, and M. Huerre. 1998. A case of Aspergillus myocarditis associated with septic shock. J Infection. 37:295-297.

2144. St-Germain, G., and R. Summerbell. 1996. Identifying Filamentous Fungi - A Clinical Laboratory Handbook, 1st ed. Star Publishing Company, Belmont, California.

2159. Stevens, D. A. 1999. Drug interactions in vitro between a polyene (Ambisome) and an echinocandin (FK463) vs. Aspergillus species. 39th Interscience Conference on Antimicrobial Agents and Chemotherapy, Abstract No. 151.

2203. Sutton, D. A., S. E. Sanche, S. G. Revankar, A. W. Fothergill, and M. G. Rinaldi. 1999. In vitro amphotericin B resistance in clinical isolates of Aspergillus terreus, with a head-to-head comparison to voriconazole. J Clin Microbiol. 37:2343-2345.

2352. Wallace, T. L., V. Paetznick, P. A. Cossum, G. Lopez-Berenstein, J. H. Rex, and E. Anaissie. 1997. Activity of liposomal nystatin against disseminated Aspergillus fumigatus infection in neutropenic mice. Antimicrob. Agents Chemother. 41:2238-2243.

30 Mold Biology and Mold Related Heath Issues

31 Allergic Bronchopulmonary Aspergillosis: An Overview

34 Biological Safety Principles and Practices; Laboratory, Growth Chamber, and Greenhouse Microbial Safety; Plant Pathogens and Plant-Associated Microorganisms of Significance to Human Health 4th Edition; Anne K. Vadaver, Sue A. Tolin, and Patricia Lambrecht

35 Molecular mechanisms of pathogenicity; how do pathogenic microorganisms develop cross-kingdom host jumps?, pages 239-277; Peter van Baarlen, Alex van Belgium, Richard C. Summerbell, Pedro W. Crous, Bart P.H.J. Thomma Volume 31, Issue 3

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POSITIVE IgG's (level of exposure) MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
BOTRYTIS (fungi)   **Cross-Over Infection** **Plant** **To Human**	**Found in plants** [7]	**Allergies** [7] **Asthma** [7] **Hay fever** [7] **Hypersensitivity pneumonitis** [7] **Winegrower's lung (rare form of hypersensitivity pneumonitis)** [7]	**BOTRYTIS POSITIVE** **8-11-2004** **PHYSICIAN PATH LABS**	U.S. PATENTS **5,491,122 Filed 12/7/1994** **5,753,222 Filed 11/18/1996** **5,869,042 Filed 11/22/1996** **5,919,447 Filed 1/22/1997** **6,060,051 Filed 5/8/1998** **6,004,774 Filed 11/25/1998** **6,077,506 Filed 4/22/1999** **6,103,228 Filed 12/30/1998** **6,291,426 Filed 5/14/1999** **6,417,163 Filed 3/1/2000** **6,524,577 Filed 9/27/2000** **6,635,245 Filed 3/21/2000** **6,638,910 Filed 11/27/2001** **6,682,925 Filed 4/13/2000** **6,852,317 Filed 9/27/2001** AGRAQUEST PRODUCTS **Arabesque, Rhapsody as, Rhapsody as0, Serenade solutions, Serenade, Serenade as, Serenade aso Garden solutions bifofungicidal liquid concentrate, Serenade aso Plant guardian biofungicide liquid concentrate, Serenade aso, Serenade solutions biofungicide, concentrate, Serenade aso, Serenade biofungicide wettable powder, Serenade garden, ready-to-use (rtu),** **Continued next page**

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

POSITIVE IgG's (level of exposure) MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
BOTRYTIS *continued*				AGRAQUEST PRODUCTS **Serenade max, Garden solutions biofungicide wettable powder, Serenade max, Plant guardian biofungicide wettable powder, Serenade max, Serenade solutions, biofungicide for home and garden, Serenade MAX, Sonata aso**

BOTRYTIS REFERENCES [but not limited to]

7 Quantus Analytical - mold spore descriptions

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

POSITIVE IgG's (level of exposure) MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
CLADOSPORIUM Fungi  BIOHAZARD **Cross-Over Infection Plant To Human**	**Found in rotten organic material [15] Leaf spots and blights of many plants and leaf spot of peppers [34] Cladosporium spp. should be handled with care in a biological safety cabinet [15]**	**Allergic Asthma [10] Allergic rhinitis [10] Allergies [7] Asthma [7] Causes chromoblastomycosis [7] Hay fever [7] Hypersensitivity pneumonitis [7] Keratitis [15] Onychomycosis [15] Phaeohyphomycosis [34] Pneumonia [34] Pulmonary infections [15] Sinusitis [15] Skin lesions [15]**	**CLADOSPORIUM HIGH POSITIVE 8-11-2004 PHYSICIAN PATH LABS**	**U.S. PATENTS 6,060,051 Filed 5/8/1998 6,103,228 Filed 12/30/1998 6,245,551 Filed 3/30/1999 6,291,426 Filed 5/14/1999 6,417,163 Filed 3/1/2000 6,586,231 Filed 12/15/2000 6,635,245 Filed 3/21/2000 6,638,910 Filed 11/27/2001** **AGRAQUEST PRODUCTS Arabesque, Garden solutions biofungicide wettable powder , Serenade as, Serenade aso, Serenade MAX, Sonata aso**

CLADOSPORIUM REFERENCES [but not limited to]

7 Quantus Analytical - mold spore descriptions

10 The Spectrum of Fungal Allergy; International Archives of Allergy and Immunology 2008;145:58–86

15 Cladosporium spp. Link ex Gray, 1821, de Hoog (1995); Dr Fungus
References:
265. Bocklisch, H., and B. Otto. 2000. Mycotic diseases in fish. Mycoses. 43:76-78. •
462. Collier, L., A. Balows, and M. Sussman. 1998. Topley & Wilson's Microbiology and Microbial Infections, 9th ed, vol. 4. Arnold, London, Sydney, Auckland, New York.
533. De Hoog, G. S., F. Queiroz-Telles, G. Haase, G. Fernandez-Zeppenfeldt, D. A. Angelis, A. van den Ende, T. Matos, H. Peltroche-Llacsahuanga, A. A. Pizzirani-Kleiner, J. Rainer, N. Richard-Yegres, V. Vicente, and F. Yegres. 2000. Black fungi: clinical and pathogenic approaches. Med Mycol. 38:243-250.
602. Dixon, D. M., and A. Polak-Wyss. 1991. The medically important dematiaceous fungi and their identification. Mycoses. 34:1-18.

1153. Kappe, R., and A. Schulze-Berge. 1993. New cause for false-positive results with the Pastorex Aspergillus antigen latex agglutination test. J. Clin. Microbiol. 31:2489-2490.
1847. Pritchard, R. C., and D. B. Muir. 1987. Black fungi: a survey of dematiaceous hyphomycetes from clinical specimens identified over a five year period in a reference laboratory. Pathology. 19:281-4.
2202. Sutton, D. A., A. W. Fothergill, and M. G. Rinaldi (ed.). 1998. Guide to Clinically Significant Fungi, 1st ed. Williams & Wilkins, Baltimore.

34 Biological Safety Principles and Practices; Laboratory, Growth Chamber, and Greenhouse Microbial Safety; Plant Pathogens and Plant-Associated Microorganisms of Significance to Human Health 4th Edition; Anne K. Vadaver, Sue A. Tolin, and Patricia Lambrecht

POSITIVE IgG's (level of exposure) MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
EPPICOCCUM fungi  **Cross-Over Infection Soil/Plant/Insect To Human**	**Found in insects [7] Found in soil [10] common causative agent of leaf spots of various plants [18]**	**Allergic Asthma [10] Allergies [7] Asthma [7] Hay fever [7]**	**EPPICOCCUM POSITIVE 8-11-2004 PHYSICIAN PATH LABS:**	**?**

EPPICOCCUM REFERENCES [but not limited to]

7 Quantus Analytical - mold spore descriptions

10 The Spectrum of Fungal Allergy; International Archives of Allergy and Immunology 2008;145:58–86

18 Epicoccum spp. (described by Link ex Steudel in 1824); Dr Fungus
References:

1295 Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.

1847 Pritchard, R. C., and D. B. Muir. 1987. Black fungi: a survey of dematiaceous hyphomycetes from clinical specimens identified over a five year period in a reference laboratory. Pathology. 19:281-4.

2202 Sutton, D. A., A. W. Fothergill, and M. G. Rinaldi (ed.). 1998. Guide to Clinically Significant Fungi, 1st ed. Williams & Wilkins, Baltimore.

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
FUSARIUM (fungi)  **Cross-Over Infection** **Soil/Plant To Human**	**Found in soil [19] Plant host; Wide host range [35] Plant host; corn [35] Plant host; Tropical trees [35] Found in plants [19] Root rot and wilt of Coleus forskohlii [34] blight of kangaroo paw [34] One of several agents of fig endosepsis [34] Walnut canker [34] Aster wilt [34] Ear, root, and stalk rot and seedling blight of maize [34] Sugarcane wilt complex [34] Pseudostem heart rot of banana [34] Wilts and blights on a wide range of vegetable and plantation crops, ornamentals, small grains and turfgrasses, including potato, sugarcane, bean, cowpeas and Musa spa and corm and root rots [34]** **Continued next page**	Allergies [7, 30] Asthma [7, 30] Asthmatic airway injury [30] Balls of fungus [30] Carcinogenic [19] Causes Keratitis [7, 19] Cutaneous infections [19] Dermatitis [30] Diarrhea [30] Disseminated infection [7, 19, 34] Disseminated fusariosis [19 34] Endocarditis [19, 34] Endophthalmitis [19] Eye infection [34] Fatigue [30] Flu symptoms [30] Fungemia due to Fusarium spp. have been reported [9] Fusariosis [19, 34] General malaise (tiredness) [30] Hair loss [30] Hay fever [7] Human fusariosis, local and systemic [34] Hypersensitive diseases [30] Immuno suppression [30] Interference with blood cell formation. [30] Invasive infection [34] Lesions of the Gastrointestinal tract [30] Lesions of the skin [30] Liver cancer [30] May cause oesophageal cancer [19] mycetoma [7, 19] Mycotic eye infections [7] Mycotoxins are believed to result in headaches [30] Mycotic keratitis [34] One of the emerging causes of opportunistic Mycoses [19] **Continued next page**	**FUSARIUM HIGH POSITIVE 8-11-2004 PHYSICIAN PATH LABS**	U.S. PATENTS **5,491,122 Filed 12/7/1994 6,004,774 Filed 11/25/1998 6,060,051 Filed 5/8/1998 6,291,426 Filed 5/14/1999 6,417,163 Filed 3/1/2000 6,524,577 Filed 9/27/2000 6,586,231 Filed 12/15/2000 6,635,245 Filed 3/21/2000 6,638,910 Filed 11/27/2001 6,852,317 Filed, 9/27/2001 6,911,338 Filed 4/11/2002** AGRAQUEST PRODUCTS **Andante, Arabesque, Glissade, Rhapsody as0, Serenade solutions, Serenade**

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
FUSARIUM *continued*	**Leaf, sheath, stem spots, damping off, and flower spots on Dendrobium and Cattleya orchid; head blight in wheat and other small-grain cereals and wilt nod dieback of date palm [34] Yellows, fruit rots, seedling rots, root rots, and damping off non a wide range of hosts; fungal root rot; and stem canker of sweet potato, black walnut, and poinsettia [34]**	**Onychomycosis [7, 19, 34] Opportunistic infection [35] Otitis media [19] Peritonitis [19] Pneumonia [34] Psychological depression [30] Pulmonary infections [19] Septic arthritis [19] Sinonasal mycetoma [29] sinus colonization [35] Sinusitis [19] Skin and nail infection [34] Skin rashes [30] Sore throats [30] Superficial and systemic infections [19] Supportive thrombophlebitis [34] Wound colonization [35]**		

FUSARIUM REFERENCES [but not limited to]

7 Quantus Analytical - mold spore descriptions

9 Fusarium spp. (described by Link ex Gray in 1821); Dr Fungus

References:

63. Anaissie, E., H. Kantarjian, J. Ro, R. Hopfer, K. Rolston, V. Fainstein, and G. Bodey. 1988. The emerging role of Fusarium infections in patients with cancer. Medicine (Baltimore). 67:77-83.

65. Anaissie, E., V. Paetznick, R. Proffitt, M. J. Adler, and G. P. Bodey. 1991. Comparison of the in vitro antifungal activity of free and liposome- encapsulated amphotericin B. Eur. J. Clin. Microbiol. Infect. Dis. 10:665-668.

66. Anaissie, E. J., G. P. Bodey, and M. G. Rinaldi. 1989. Emerging fungal pathogens. Eur. J. Clin. Microbiol. Infect. Dis. 8:323-330.

119. Arikan, S., M. Lozano-Chiu, V. Paetznick, S. Nangia, and J. H. Rex. 1999. Microdilution susceptibility testing of amphotericin B, itraconazole, and voriconazole against clinical isolates of Aspergillus and Fusarium species. J Clin Microbiol. 37:3946-3951.

120. Arikan, S., M. Lozano-Chiu, V. Paetznick, and J. H. Rex. 2001. In vitro susceptibility testing methods for caspofungin against Aspergillus and Fusarium isolates. Antimicrob. Agents Chemother. 45:327-330.

121. Arikan, S., M. Lozano-Chiu, V. Paetznick, and J. H. Rex. 2000. In vitro synergy studies with caspofungin and amphotericin B against Aspergillus and Fusarium. 40th Interscience Conference on Antimicrobial Agents and Chemotherapy, Abstract No. J-932.

142. Austen, B., H. McCarthy, B. Wilkins, A. Smith, and A. Duncombe. 2001. Fatal disseminated fusarium infection in acute lymphoblastic leukaemia in complete remission. J Clin Pathol. 54:488-490.

306. Boutati, E. I., and E. J. Anaissie. 1997. Fusarium, a significant emerging pathogen in patients with hematologic malignancy: Ten years' experience at a cancer center and implications for management. Blood. 90:999-1008.

446. Clancy, C. J., and M. H. Nguyen. 1998. In vitro efficacy and fungicidal activity of voriconazole against Aspergillus and Fusarium species. Eur. J. Clin. Microbiol. Infect. Dis. 17:573-575.

455. Cofrancesco, E., C. Boschetti, M. A. Viviani, C. Bargiggia, A. M. Tortorano, M. Cortellaro, and C. Zanussi. 1992. Efficacy of liposomal amphotericin B (AmBisome) in the eradication of Fusarium infection in a leukaemic patient. Haematologica. 77:280-3.

531. de Hoog, G. S., J. Guarro, J. Gene, and M. J. Figueras. 2000. Atlas of Clinical Fungi, 2nd ed, vol. 1. Centraalbureau voor Schimmelcultures, Utrecht, The Netherlands.

558. Del Poeta, M., W. A. Schell, and J. R. Perfect. 1997. In vitro antifungal activity of pneumocandin L-743,872 against a variety of clinically important molds. Antimicrob. Agents Chemother. 41:1835-1836.

581. Deshpande, S. D., and G. V. Koppikar. 1999. A study of mycotic keratitis in Mumbai. Indian J Pathol Microbiol. 42:81-7.

683. Espinel-Ingroff, A. 1998. Comparison of in vitro activities of the new triazole SCH56592 and the echinocandins MK-0991 (L-743,872) and LY303366 against opportunistic filamentous and dimorphic fungi and yeasts. J Clin Microbiol. 36:2950-2956.

687. Espinel-Ingroff, A. 2001. In vitro fungicidal activities of voriconazole, itraconazole, and amphotericin B against opportunistic moniliaceous and dematiaceous fungi. J Clin Microbiol. 39:954-958.

716. Farina, C., F. Vailati, A. Manisco, and A. Goglio. 1999. Fungaemia survey: a 10-year experience in Bergamo, Italy. Mycoses. 42:543-548.

844. Girmenia, C., A. P. Lori, F. Boecklin, A. Torosantucci, P. Chiani, P. De Fabritiis, F. Taglietti, A. Cassone, and P. Martino. 1999. Fusarium infections in patients with severe aplastic anemia: review and implications for management. Haematologica. 84:114-118.

861. Goldblum, D., B. E. Frueh, S. Zimmerli, and M. Bohnke. 2000. Treatment of postkeratitis fusarium endophthalmitis with amphotericin B lipid complex [In Process Citation]. Cornea. 19:853-6.

916. Guarro, J., and J. Gene. 1995. Opportunistic fusarial infections in humans. Eur. J. Clin. Microbiol. Infect. Dis. 14:741-754.

918. Guarro, J., M. Nucci, T. Akiti, J. Gene, M. D. C. Barreiro, and R. T. Goncalves. 2000. Fungemia due to Fusarium sacchari in an immunosuppressed patient. J Clin Microbiol. 38:419-421.

952. Gupta, A. K., and R. C. Summerbell. 1999. Combined distal and lateral subungual and white superficial onychomycosis in the toenails. J Am Acad Dermatol. 41:938-44.

1024. Hennequin, C., E. Abachin, F. Symoens, V. Lavarde, C. Reboux, N. Nolard, and P. Berche. 1999. Identification of Fusarium species involved in human infections by 28S rRNA gene sequencing. J Clin Microbiol. 37:3586-3589.

1130. Johnson, E. M., A. Szekely, and D. W. Warnock. 1998. In-vitro activity of voriconazole, itraconazole and amphotericin B against filamentous fungi. J Antimicrob Chemother. 42:741-745.

1131. Johnson, E. M., A. Szekely, and D. W. Warnock. 1999. In vitro activity of Syn-2869, a novel triazole agent, against emerging and less common mold pathogens. Antimicrob. Agents Chemother. 43:1260-1263.

1152. Kappe, R. 1999. Antifungal activity of the new azole UK-109, 496 (voriconazole). Mycoses. 42:83-86.

1241. Kovacicova, G., S. Spanik, A. Kunova, J. Trupl, A. Sabo, P. Koren, M. Sulcova, F. Mateicka, J. Novotny, E. Pichnova, L. Jurga, B. Chmelik, T. Obertik, D. West, and V. Krcmery, Jr. 2001. Prospective study of fungaemia in a single cancer institution over a 10-y period: Aetiology, risk factors, consumption of antifungals and outcome in 140 patients. Scand J Infec Dis. 33:367-374.

1248. Krcmery, V., Jr., and G. Kovacicova. 2000. Longitudinal 10-year prospective survey of fungaemia in Slovak Republic: trends in etiology in 310 episodes. Diagn Microbiol Infect Dis. 36:7-11.

1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.

1340. Liesegang, T. J., and R. K. Forster. 1980. Spectrum of microbial keratitis in South Florida. Am J Ophthalmol. 90:38-47.

1374. Louie, T., F. el Baba, M. Shulman, and V. Jimenez-Lucho. 1994. Endogenous endophthalmitis due to Fusarium: case report and review. Clin Infect Dis. 18:585-8.

1380. Lozano-Chiu, M., S. Arikan, V. L. Paetznick, E. J. Anaissie, D. Loebenberg, and J. H. Rex. 1999. Treatment of murine fusariosis with SCH 56592. Antimicrob. Agents Chemother. 43:589-591.

1426. Manfredini, L., A. Garaventa, E. Castagnola, C. Viscoli, C. Moroni, G. Dini, M. L. Garre, G. Manno, C. Savioli, Z. Kotitsa, and et al. 1995. [Fungal infections in pediatric oncology]. Pediatric Med Chir. 17:435-41.

1433. Marco, F., M. A. Pfaller, S. A. Messer, and R. N. Jones. 1998. Antifungal activity of a new triazole, voriconazole (UK- 109,496), compared with three other antifungal agents tested against clinical isolates of filamentous fungi. Med Mycol. 36:433-436.

1434. Marco, F., M. A. Pfaller, S. A. Messer, and R. N. Jones. 1998. In vitro activity of a new triazole antifungal agent, Sch 56592, against clinical isolates of filamentous fungi. Mycopathologia. 141:73-77.

1473. Mayayo, E., I. Pujol, and J. Guarro. 1999. Experimental pathogenicity of four opportunist Fusarium species in a murine model. J Med Microbiol. 48:363-366.

1494. McGinnis, M. R., L. Pasarell, D. A. Sutton, A. W. Fothergill, C. R. Cooper, and M. G. Rinaldi. 1998. In vitro activity of voriconazole against selected fungi. Med Mycol. 36:239-242.

1577. Moriarty, A. P., G. J. Crawford, I. L. McAllister, and I. J. Constable. 1993. Severe corneoscleral infection. A complication of beta irradiation scleral necrosis following pterygium excision. Arch Ophthalmol. 111:947-51.

1581. Morrison, V. A., R. J. Haake, and D. J. Weisdorf. 1993. The spectrum of non- Candida fungal infections following bone marrow transplantation. Medicine (Baltimore). 72:78-89.

1780 Pfaller, M. A., F. Marco, S. A. Messer, and R. N. Jones. 1998. In vitro activity of two echinocandin derivatives, LY303366 and MK-0991 (L-743,792), against clinical isolates of Aspergillus, Fusarium, Rhizopus, and other filamentous fungi. Diagn. Microbiol. Infect. Dis. 30:251-255. 1804 Pitt, J. I. 2000. Toxigenic fungi: which are important? Med Mycol. 38:17-22.

1806 Pitt, J. I., A. D. Hocking, K. Bhudhasamai, B. F. Miscamble, K. A. Wheeler, and P. Tanboon-Ek. 1994. The normal mycoflora of commodities from Thailand. 2. Beans, rice, small grains and other commodities. International Journal of Food Microbiology. 23:35-43.

1826. Ponton, J., R. Ruchel, K. V. Clemons, D. C. Coleman, R. Grillot, J. Guarro, D. Aldebert, P. Ambroise-Thomas, J. Cano, A. J. Carrillo-Munoz, J. Gene, C. Pinel, D. A. Stevens, and D. J. Sullivan. 2000. Emerging pathogens. Med Mycol. 38:225-236.

1854. Pujol, I., J. Guarro, J. Gene, and J. Sala. 1997. In vitro antifungal susceptibility of clinical and environmental Fusarium spp. strains. J. Antimicrob. Chemother. 39:163-167.

1864. Radford, S. A., E. M. Johnson, and D. W. Warnock. 1997. In vitro studies of activity of voriconazole (UK-104,496), a new triazole antifungal agent, against emerging and less-common mold pathogens. Antimicrob. Agents Chemother. 41:841-843.

1866. Rahman, M. R., G. J. Johnson, R. Husain, S. A. Howlader, and D. C. Minassian. 1998. Randomized trial of 0.2% chlorhexidine gluconate and 2.5% natamycin for fungal keratitis in Bangladesh. Br J Ophthalmol. 82:919-25.

1895. Restrepo, A. 1994. Treatment of tropical mycoses. J. Amer. Acad. Dermatol. 31:S91-102.

1899. Reuben, A., E. Anaissie, P. E. Nelson, R. Hashem, C. Legrand, D. H. Ho, and G. P. Bodey. 1989. Antifungal susceptibility of 44 clinical isolates of Fusarium species determined by using a broth microdilution method. Antimicrob. Agents Chemother. 33:1647-1649.

1921. Richardson, S. E., R. M. Bannatyne, R. C. Summerbell, J. Milliken, R. Gold, and S. S. Weitzman. 1988. Disseminated fusarial infection in the immunocompromised host. Rev. Infect. Dis. 10:1171-1181.

1955. Rolston, K. V. I. 2001. The spectrum of pulmonary infections in cancer patients. Curr Opin Oncol. 13:218-223.

1961. Romano, C., C. Miracco, and E. M. Difonzo. 1998. Skin and nail infections due to Fusarium oxysporum in Tuscany, Italy. Mycoses. 41:433-437.
1963. Rosa, R. H., Jr., D. Miller, and E. C. Alfonso. 1994. The changing spectrum of fungal keratitis in south Florida. Ophthalmology. 101:1005-13.
1973. Rotowa, N. A., H. J. Shadomy, and S. Shadomy. 1990. In vitro activities of polyene and imidazole antifungal agents against unusual opportunistic fungal pathogens. Mycoses. 33:203-11.
2015. Sampathkumar, P., and C. V. Paya. 2001. Fusarium infection after solid-organ transplantation. Clin Infect Dis. 32:1237-1240.
2039. Schaafsma, A. W., R. W. Nicol, M. E. Savard, R. C. Sinha, L. M. Reid, and G. Rottinghaus. 1998. Analysis of Fusarium toxins in maize and wheat using thin layer chromatography. Mycopathologia. 142:107-13.
2041. Schell, W. A. 2000. Histopathology of fungal rhinosinusitis. Otolaryngol Clin N Amer. 33:251-276,VII,VIII,NIL_5.
2072. Segal, B. H., T. J. Walsh, J. M. Liu, J. D. Wilson, and K. J. Kwon-Chung. 1998. Invasive infection with Fusarium chlamydosporum in a patient with aplastic anemia. J Clin Microbiol. 36:1772-1776.
2111. Singh, G., and S. R. Malik. 1972. Therapeutic keratoplasty in fungal corneal ulcers. Br J Ophthalmol. 56:41-5.
2136. Speeleveld, E., B. Gordts, H. W. Van Landuyt, C. De Vroey, and C. Raes-Wuytack. 1996. Susceptibility of clinical isolates of Fusarium to antifungal drugs. Mycoses. 39:37-40.
2137. Spielberger, R. T., M. J. Falleroni, A. J. Coene, and R. A. Larson. 1993. Concomitant amphotericin B therapy, granulocyte transfusions, and GM- CSF administration for disseminated infection with Fusarium in a granulocytopenic patient. Clin. Infect. Dis. 16:528-30.
2141. Squier, C., V. L. Yu, and J. E. Stout. 2000. Waterborne Nosocomial Infections. Curr Infect Dis Rep. 2:490-496.
2194. Summerbell, R. C., S. Krajden, and J. Kane. 1989. Potted plants in hospitals as reservoirs of pathogenic fungi. Mycopathologia. 106:13-22.
2202. Sutton, D. A., A. W. Fothergill, and M. G. Rinaldi (ed.). 1998. Guide to Clinically Significant Fungi, 1st ed. Williams & Wilkins, Baltimore.
2223. Tanure, M. A., E. J. Cohen, S. Sudesh, C. J. Rapuano, and P. R. Laibson. 2000. Spectrum of fungal keratitis at Wills Eye Hospital, Philadelphia, Pennsylvania. Cornea. 19:307-12.
2226 Tawara, S., F. Ikeda, K. Maki, Y. Morishita, K. Otomo, N. Teratani, T. Goto, M. Tomishima, H. Ohki, A. Yamada, K. Kawabata, H. Takasugi, K. Sakane, H. Tanaka, F. Matsumo, and S. Kuwahara. 2000. In vitro activities of a new lipopeptide antifungal agent, FK463, against a variety of clinically important fungi. Antimicrob. Agents Chemother. 44:57-62.
2282 Van Cutsem, J. 1989. The in-vitro antifungal spectrum of itraconazole. Mycoses. 32:7-13.
2283 Van Cutsem, J. 1992. In vitro antifungal spectrum of itraconazole and treatment of systemic mycoses with old and new antimycotic agents. Chemotherapy. 1:3-11.
2297 Vartivarian, S. E., E. J. Anaissie, and G. P. Bodey. 1993. Emerging fungal pathogens in immunocompromised patients: classification, diagnosis, and management. Clin. Infect. Dis. 17:S487-91.
2304. Venditti, M., A. Micozzi, G. Gentile, L. Polonelli, G. Morace, P. Bianco, G. Avvisati, G. Papa, and P. Martino. 1988. Invasive Fusarium solani infections in patients with acute leukemia. Rev. Infect. Dis. 10:653-660.
2334. Visconti, A., M. Solfrizzo, G. Avantaggiato, and A. De Girolamo. 2000. Strategies for detoxification of Fusarium mycotoxins and assessing in vivo the relevant effectiveness. BCPC Conference: Pests & Diseases:721-728.
2345. Wadhwani, K., and A. K. Srivastava. 1984. Fungi from otitis media of agricultural field workers. Mycopathologia. 88:155-9.
2370. Walsh, T. J., N. L. Seibel, C. Arndt, R. E. Harris, M. J. Dinubile, A. Reboli, J. Hiemenz, and S. J. Chanock. 1999. Amphotericin B lipid complex in pediatric patients with invasive fungal infections. Pediat Inf Dis J. 18:702-708.
2432. Wildfeuer, A., H. P. Seidl, I. Paule, and A. Haberreiter. 1998. In vitro evaluation of voriconazole against clinical isolates of yeasts, moulds and dermatophytes in comparison with itraconazole, ketoconazole, amphotericin B and griseofulvin. Mycoses. 41:309-319.
2452. Wolff, M. A., and R. Ramphal. 1995. Use of amphotericin B lipid complex for treatment of disseminated cutaneous Fusarium infection in a neutropenic patient. Clin. Infect. Dis. 20:1568-1569.
2471. Yildiran, S. T., S. Komurcu, M. A. Saracli, A. Gonlum, C. Beyan, H. Gun, and A. Yalcin. 1998. Fusarium fungaemia in severely neutropenic patients. Mycoses. 41:467-469.

29 Sinonasal mycetoma - Enrique Palacios, MD, FACR; Wesley Jones, MD; Jorge Alvernia, MD; From the Department of Radiology (Dr. Palacios and Dr. Jones) and the Department of Neurosurgery (Dr. Alvernia), Tulane University Hospital and Clinic, New Orleans.

REFERENCES:

(1.) Som PM, Brandwein MS. Inflammatory diseases. In: Som PM, Curtin HD. Head and Neck Imaging. 4th ed. St. Louis: Mosby; 2003:193-259.

(2.) Fellows DW, King VD, Conturo T, et al. In vitro evaluation of MR hypointensity in Aspergillus colonies. AJNR Am J Neuroradiol 1994;15 (6):1139-44.

(3.) Gunduz K, Orguc S, Demireli P, et al. A case of mycetoma successfully treated with itraconazole and co-trimoxazole. Mycoses 2006;49 (5): 436-8.

(4.) Jiang RS, Hsu CY. Serum immunoglobulins and IgG subclass levels in sinus mycetoma. Otolaryngol Head Neck Surg 2004;130 (5):563-6.

(5.) Kumar J, Kumar A, Sethy P, Gupta S. The dot-in-circle sign of mycetoma on MRI. Diagn Interv Radiol 2007;13(4):193-5.

(6.) Klossek JM, Serrano E, Peloquin L, et al. Functional endoscopic sinus surgery and 109 mycetomas of paranasal sinuses. Laryngoscope 1997;107(1):112-17.

(7.) deShazo RID. Fungal sinusitis. Am J Med Sci 1998;316(1):39-45.

(8.) Pagella F, Matti E, De Bernardi F, et al. Paranasal sinus fungus ball: Diagnosis and management. Mycoses 2007;50(6):451-6.

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30 Mold Biology and Mold Related Heath Issues

34 Biological Safety Principles and Practices; Laboratory, Growth Chamber, and Greenhouse Microbial Safety; Plant Pathogens and Plant-Associated Microorganisms of Significance to Human Health 4th Edition; Anne K. Vadaver, Sue A. Tolin, and Patricia Lambrecht

35 Molecular mechanisms of pathogenicity; how do pathogenic microorganisms develop cross-kingdom host jumps?, pages 239-277; Peter van Baarlen, Alex van Belgium, Richard C. Summerbell, Pedro W. Crous, Bart P.H.J. Thomma Volume 31, Issue 3

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
HELMINTHOSPORIUM (fungi)  **Cross-Over Infection** **Soil/Plant** **To Human**	**Found in soil** [20] **Found in grass** [20]	**Allergic Asthma** [10] **Allergic Bronchopulmonary - Mycoses** [10] **Asthma (can require hospitalization)** [9] **Rhinitis** [10]	**HELMINTHO-SPORIUM HIGH POSITIVE** **8-11-2004** **PHYSICIAN PATH LABS**	U.S. PATENTS **5,491,122 Filed 12/7/1994** AGRAQUEST PRODUCTS **Arabesque**

HELMINTHOSPORIUM REFERENCES [but not limited to]

9 Association between sensitization to Aurebasidlium pullulans (Pullularia sp) and severity of asthma, PMID: 17304882 [PubMed - indexed for MEDLINE

10 The Spectrum of Fungal Allergy; International Archives of Allergy and Immunology 2008;145:58–86

20 The Taxonomy of "Helminthosporium" Species; j. L. Alcorn - Plant Pathology Branch, Department of Primary Industries, Indooroopilly, Queensland 4068, Australia

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
MUCOR (FUNGI)  **Cross-Over Infection Soil/Plant/Decaying Vegetation To Human**	**Found in soil [21] Found in plants [21] Found in decaying fruits and vegetables [21, 35] common laboratory contaminant [21]**	**Gastritis [21] Mucocutaneous infections [21] Opportunistic infection [35] Perineural invasion [21] Pulmonary infections [21] Renal infections [21] Rhinocerebral infections [21] Septic arthritis [21] Vascular invasion that causes necrosis of the infected tissue [21]Zygomycosis [21]**	**MUCOR POSITIVE 8-11-2004 PHYSICIAN P ATH LABS**	U.S. PATENTS 6,911,338 Filed 4/11/2002 AGRAQUEST PRODUCTS Arabesque

MUCOR REFERENCES [but not limited to]

21. Mucor spp. (described by Micheli ex Saint-Amans in 1821); Dr Fungus

References:

3. Abe, F., H. Shibuya, M. Tateyama, Y. Ommura, N. Azumi, and K. Kimura. 1986. Mucormycosis in diabetic ketoacidosis: Role of unbound iron binding capacity of transferrin. Acta Pathol. Jpn. 36:1307-1312.

8. Adam, R. D., G. Hunger, J. DiTomasso, and G. Comerci, Jr. 1994. Mucormycosis: Emerging prominence of cutaneous infections. Clin. Infect. Dis. 19:67-76.

12. Aderka, A., Y. Sidi, D. Garfinkel, A. Rothem, A. Weinberger, and J. Pinkhas. 1983. Roentgenologically invisible mucormycosis pneumonia. Respiration. 44:158-160.

19 Agger, W. A., and D. G. Maki. 1978. Mucormycosis: a complication of critical care. Arch. Intern. Med. 138:925-927.

217 Bennett, C. L., C. A. Westbrook, B. Gruber, and H. M. Golomb. 1986. Hairy cell leukemia and mucomycosis: Treatment with alpha-2 interferon. Am. J. Med. 81:1065-1067. •

234. Berns, J. S., M. M. Lederman, and G. B. M. 1984. Nonsurgical cure of pulmonary mucomycosis. Am. J. Med. Sci. 287:42-44.

243. Bigby, T. D., L. M. Turney, and M. A. Matthay. 1986. Clinical spectrum of pulmonary mucomycosis. Chest. 89:435-439.

277. Boelaert, J. R., M. de Locht, and Y.-J. Schneider. 1994. The effect of deferoxamine on different zygomycetes. J. Infect. Dis. 169:231-232.

278. Boelaert, J. R., M. de Locht, J. Van Cutsem, V. Kerrels, C. B, A. Verdonck, H. W. Van Landuyt, and Y.-J. Schneider. 1993. Mucormycosis during deferoxamine therapy is a siderophore-mediated infection: In vitro and in vivo animal studies. J. Clin. Invest. 91:1979-1986.

279. Boelaert, J. R., G. F. van Roost, P. L. Vergauwe, J. J. Verbanck, C. de Vroey, and M. F. Segaert. 1988. The role of desferrioxamine in dialysis- associated mucomycosis: report of three cases and review of the literature. Clinical Nephrology. 29:261-266.

292. Boogaerts, M. A., G. E. Verhoef, P. Zachee, H. Demuynck, L. Verbist, and K. De Beule. 1989. Antifungal prophylaxis with itraconazole in prolonged neutropenia: correlation with plasma levels. Mycoses. 32 (Suppl 1):103-108.

375. Caraveo, J., A. A. Trowbridge, B. W. Amaral, J. B. Green, P. T. Cain, and D. L. Hurley. 1977. Bone marrow necrosis associated with a mucor infection. Am. J. Med. 62:404-408.

531. de Hoog, G. S., J. Guarro, J. Gene, and M. J. Figueras. 2000. Atlas of Clinical Fungi, 2nd ed, vol. 1. Centraalbureau voor Schimmelcultures, Utrecht, The Netherlands.

723. Ferguson, B. J. 2000. Mucormycosis of the nose and paranasal sinuses. Otolaryngol Clin N Amer. 33:349-365,IX,X,NIL_5.

763. Frater, J. L., G. S. Hall, and G. W. Procop. 2001. Histologic features of zygomycosis - Emphasis on perineural invasion and fungal morphology. Arch Pathol Lab Med. 125:375-378.

805. Garcia-Diaz, J. B., L. Palau, and G. A. Pankey. 2001. Resolution of rhinocerebral zygomycosis associated with adjuvant administration of granulocyte-macrophage colony- stimulating factor. Clin Infect Dis. 32:E166-E170.

815. Gaviria, J. M., L. A. Grohskopf, R. Barnes, and R. K. Root. 1999. Successful treatment of rhinocerebral zygomycosis: A combined- strategy approach. Clin Infect Dis. 28:160-161.

887. Grauer, M. E., C. Bokemeyer, T. Welte, M. Freund, and H. Link. 1993. Successful treatment of Mucor pneumonia in a patient with relapsed lymphoblastic leukemia after bone marrow transplantation. Bone Marrow Transplant. 12:421-424. 36 37

911. Guardia, J. A., J. Bourgoignie, and J. Diego. 2000. Renal mucormycosis in the HIV patient. Amer J Kidney Dis. 35:E241-E245.

1004. Hay, R. J. 1994. Liposomal amphotericin B, AmBisome. J. Infect. 28:35-43.

1233. Kontoyiannis, D. P., V. C. Wessel, G. P. Bodey, and K. V. I. Rolston. 2000. Zygomycosis in the 1990s in a tertiary-care cancer center. Clin Infect Dis. 30:851-856.

1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press,Washington, D.C.

1366. Lopez-Berestein, G., V. Fainstein, R. Hopfer, K. Mehta, M. P. Sullivan, M. Keating, M. G. Rosenblum, R. Mehta, M. Luna, E. M. Hersh, and et al. 1985. Liposomal amphotericin B for the treatment of systemic fungal infections in patients with cancer: a preliminary study. J Infect Dis. 151:704-10.

1470. Maury, S., T. Leblanc, M. Feuihade, J.-M. Molina, and G. Schaison. 1998. Successful treatement of disseminated mucormycosis with liposomal amphotericin B and surgery in a child with leukemia. Clin. Infect. Dis. 26:200-202.

1581. Morrison, V. A., R. J. Haake, and D. J. Weisdorf. 1993. The spectrum of non- Candida fungal infections following bone marrow transplantation. Medicine (Baltimore). 72:78-89.

1588. Moses, A. E., G. Rahav, Y. Barenholz, J. Elidan, B. Azaz, S. Gillis, M. Brickman, I. Polacheck, and M. Shapiro. 1998. Rhinocerebral mucormycosis treated with amphotericin B colloidal dispersion in three patients. Clin Infect Dis. 26:1430-1433.

1656. Nosari, A., P. Oreste, M. Montillo, G. Carrafiello, M. Draisci, G. Muti, A. Molteni, and E. Morra. 2000. Mucormycosis in hematologic malignancies: an emerging fungal infection. Haematologica. 85:1068-1071.

1683. Okhuysen, P. C., J. H. Rex, M. Kapusta, and C. Fife. 1994. Successful treatment of extensive posttraumatic soft-tissue and renal infections due to Apophysomyces elegans. Clin. Infect. Dis. 19:329-331.

1703. Pagani, J. J., and H. I. Libshitz. 1981. Opportunistic fungal pneumonias in cancer patients. Am. J. Roentgenol. 137.

1751. Penk, A., and L. Pittrow. 1999. Therapeutic experience with fluconazole in the treatment of fungal infections in diabetic patients. Mycoses. 42:97-100.

1755. Perez, A. 1999. Terbinafine: broad new spectrum of indications in several subcutaneous and systemic and parasitic diseases. Mycoses. 42:111-114.

1792. Pickles, R., G. Long, and R. Murugasu. 1994. Isolate renal mucormycosis. Med. J. Aust. 160:514-516.

1794. Pidhorecky, I., J. Urschel, and T. Anderson. 2000. Resection of invasive pulmonary aspergillosis in immunocompromised patients. Annals Surg Oncology. 7:312-317.

1918. Ribes, J. A., C. L. Vanover-Sams, and D. J. Baker. 2000. Zygomycetes in human disease. Clin Microbiol Rev. 13:236-301.

2023. Sane, A., S. Manzi, J. Perfect, A. J. Herzberg, and J. O. Moore. 1989. Deferoxamine treatment as a risk factor for zygomycete infection. 159:151-152.

2033. Sastre, J. L., J. Perez-Oteyza, J. Lopez, C. Cervero, A. Sanchez-Sousa, J. Garcia- Larana, J. A. Cancelas, J. Odriozola, and J. L. Navarro. 1994. [Pulmonary mucormycosis in leukemic patients. Apropos of 2 cases]. Sangre. 39:53-5.

2144. St-Germain, G., and R. Summerbell. 1996. Identifying Filamentous Fungi - A Clinical Laboratory Handbook, 1st ed. Star Publishing Company, Belmont, California.

2149. Stave, G. M., T. Heimberger, and T. M. Kerkering. 1989. Zygomycosis of the basal ganglia in intravenous drug users. Am. J. Med. 85:115-116.

2165. Stewart, N. J., B. L. Munday, and T. Hawkesford. 1999. Isolation of Mucor circinelloides from a case of ulcerative mycosis of platypus (Ornithorhynchus anatinus), and a comparison of the response of Mucor circinelloides and Mucor amphibiorum to different culture temperatures. Med Mycol. 37:201-206.

2182. Stringer, S. P., and M. W. Ryan. 2000. Chronic invasive fungal rhinosinusitis. Otolaryngol Clin N Amer. 33:375-387,X.

2185. Sugar, A. M., and X. P. Liu. 2000. Combination antifungal therapy in treatment of murine pulmonary mucormycosis: Roles of quinolones and azoles. Antimicrob. Agents Chemother. 44:2004-2006.

2202. Sutton, D. A., A. W. Fothergill, and M. G. Rinaldi (ed.). 1998. Guide to Clinically Significant Fungi, 1st ed. Williams & Wilkins, Baltimore.

2341. Voigt, K., E. Cigelnik, and K. O'Donnell. 1999. Phylogeny and PCR identification of clinically important zygomycetes based on nuclear ribosomal-DNA sequence data. J Clin Microbiol. 37:3957-3964.

2432 Wildfeuer, A., H. P. Seidl, I. Paule, and A. Haberreiter. 1998. In vitro evaluation of voriconazole against clinical isolates of yeasts, moulds and dermatophytes in comparison with itraconazole, ketoconazole, amphotericin B and griseofulvin. Mycoses. 41:309-319.

2486. Zander, D. S., M. J. Cicale, and P. Mergo. 2000. Durable cure of mucormycosis involving allograft and native lungs. J Heart Lung Transplant. 19:615-618.

35 Molecular mechanisms of pathogenicity; how do pathogenic microorganisms develop cross-kingdom host jumps?, pages 239-277; Peter van Baarlen, Alex van Belgium, Richard C. Summerbell, Pedro W. Crous, Bart P.H.J. Thomma Volume 31, Issue 3

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
PULLULARIA (PULLULANS) (fungi)  **Cross-Over Infection Plant - Tree To Human**	**Found in moldy redwood dust [33]**	**SevereAsthma [9]**	**PULLULARIA POSITIVE 8-11-2004 PHYSICIAN PATH LABS**	**?**

PULLULARIA (PULLULANS) REFERENCES [but not limited to]

9 Association between sensitization to Aurebasidlium pullulans (Pullularia sp) and severity of asthma, PMID: 17304882 [PubMed - indexed for MEDLINE

33 National Ag Safety Database; Dusts From Decayed Grain, Hay, and Silage Agriculturally-Related Hypersensitivity Pneumonitis, PennState - The National Dairy Database (1992) \NDB\OCCSAFE\TEXT2\OF200500.TXT

NON REPORTED Occupational Exposures & Illnesses Sustained From Employment At Agraquest, Inc. A Microbial Biotechnology Research & Development Company - Founder Pamela Gail Marrone

MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
RHIZOPUS (fungi)  **Cross-Over Infection Soil/Plant To Human**	**Found in soil [22] Fruit rots of pineapple, mango, and carrot [34] Pre and post harvest soft rots of many fruits, vegetables and crops [34] Sunflower head rot [34] Seedling blight on lupine [34] Found in decaying fruit and vegetables [22, 35]**	**Disseminated infections [22] Gastrointestinal infections [22] √ Genitourinary [22] Mucocutaneous [22] Opportunistic infection [35] Perineural invasion are the most frustrating features of these infections [22] Pulmonary infections [22] Rhinocerebral [22] Vascular invasion that causes necrosis of the infected tissue [22] Zygomycosis [22] Zygomycosis - disseminated [22] Zygomycosis is frequently fatal [22, 34]**	**RHIZOPUS POSITIVE** **8-11-2004** **PHYSICIAN PATH LABS**	**U.S. PATENTS** 6,004,774 Filed 11/25/1998 **AGRAQUEST PRODUCT** Arabesque

RHIZOPUS REFERENCES [but not limited to]

22 Rhizopus spp. (described by Ehrenberg ex Corda in 1838); Dr Fungus

References:

104. Anstead, G. M., D. A. Sutton, E. H. Thompson, I. Weitzman, R. A. Otto, and S. K. Ahuja. 1999. Disseminated zygomycosis due to Rhizopus schipperae after heatstroke. J Clin Microbiol. 37:2656-2662.

192. Barratt, D. M., K. Van Meter, P. Asmar, T. Nolan, C. Trahan, L. Garcia-Covarrubias, and S. E. Metzinger. 2001. Hyperbaric oxygen as an adjunct in zygomycosis: Randomized controlled trial in a murine model. Antimicrob. Agents Chemother. 45:3601-3602.

408. Chakrabarti, A., A. Das, A. Sharma, N. Panda, S. Das, K. L. Gupta, and V. Sakhuja. 2001. Ten years' experience in zygomycosis at a tertiary care centre in India. J Infection. 42:261-266.

462. Collier, L., A. Balows, and M. Sussman. 1998. Topley & Wilson's Microbiology and Microbial Infections, 9th ed, vol. 4. Arnold, London, Sydney, Auckland, New York.

502. Cuvelier, I., D. Vogelaers, R. Peleman, D. Benoit, V. Van Marck, F. Offner, K. Vandewoude, and F. Colardyn. 1998. Two cases of disseminated mucormycosis in patients with hematological malignancies and literature review. Eur. J. Clin. Microbiol. Infect. Dis. 17:859-863.

531. de Hoog, G. S., J. Guarro, J. Gene, and M. J. Figueras. 2000. Atlas of Clinical Fungi, 2nd ed, vol. 1. Centraalbureau voor Schimmelcultures, Utrecht, The Netherlands.

558. Del Poeta, M., W. A. Schell, and J. R. Perfect. 1997. In vitro antifungal activity of pneumocandin L-743,872 against a variety of clinically important molds. Antimicrob. Agents Chemother. 41:1835-1836.

689. Espinel-Ingroff, A., K. Dawson, M. Pfaller, E. Anaissie, B. Breslin, D. Dixon, A. Fothergill, V. Paetznick, J. Peter, M. Rinaldi, and T. Walsh. 1995. Comparative and collaborative evaluation of standardization of antifungal susceptibility testing for filamentous fungi. Antimicrob. Agents Chemother. 39:314-319.

696. Eucker, J., O. Sezer, B. Graf, and K. Possinger. 2001. Mucormycoses. Mycoses. 44:253-260.

723. Ferguson, B. J. 2000. Mucormycosis of the nose and paranasal sinuses. Otolaryngol Clin N Amer. 33:349-365,IX,X,NIL_5.

763. Frater, J. L., G. S. Hall, and G. W. Procop. 2001. Histologic features of zygomycosis - Emphasis on perineural invasion and fungal morphology. Arch Pathol Lab Med. 125:375-378.

805. Garcia-Diaz, J. B., L. Palau, and G. A. Pankey. 2001. Resolution of rhinocerebral zygomycosis associated with adjuvant administration of granulocyte-macrophage colony- stimulating factor. Clin Infect Dis. 32:E166-E170.

812. Gartenberg, G., E. J. Bottone, G. T. Keusch, and I. Weitzman. 1978. Hospital- azquired mucormycosis (Rhizopus rhizopodiformis) of skin and subcutaneous tissue: Epidemiogy, mycology, and treatment. N. Engl. J. Med. 299:1115-1118.

910. Grossi, P., C. Farina, R. Fiocchi, and D. Dalla Gasperina. 2000. Prevalence and outcome of invasive fungal infections in 1,963 thoracic organ transplant recipients - A multicenter retrospective study. Transplantation. 70:112-116.

963. Hagensee, M. E., J. E. Bauwens, B. Kjos, and R. A. Bowden. 1994. Brain abscess following marrow transplantation: experience at the Fred Hutchinson Cancer Research Center, 1984-1992. Clin Infect Dis. 19:402-8.

1004. Hay, R. J. 1994. Liposomal amphotericin B, AmBisome. J. Infect. 28:35-43.

1039. Herreros, E., M. J. Almela, S. Lozano, F. G. De las Heras, and D. Gargallo-Viola. 2001. Antifungal activities and cytotoxicity studies of six new azasordarins. Antimicrob. Agents Chemother. 45:3132-3139.

1130. Johnson, E. M., A. Szekely, and D. W. Warnock. 1998. In-vitro activity of voriconazole, itraconazole and amphotericin B against filamentous fungi. J Antimicrob Chemother. 42:741-745.

1233. Kontoyiannis, D. P., V. C. Wessel, G. P. Bodey, and K. V. I. Rolston. 2000. Zygomycosis in the 1990s in a tertiary-care cancer center. Clin Infect Dis. 30:851-856.

1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.

1318. Leong, A. S. Y. 1978. Granulomatous mediastinitis due to Rhizopus species. Am. J. Clin. Path. 70:103-107.

1433. Marco, F., M. A. Pfaller, S. A. Messer, and R. N. Jones. 1998. Antifungal activity of a new triazole, voriconazole (UK- 109,496), compared with three other antifungal agents tested against clinical isolates of filamentous fungi. Med Mycol. 36:433-436.

1434. Marco, F., M. A. Pfaller, S. A. Messer, and R. N. Jones. 1998. In vitro activity of a new triazole antifungal agent, Sch 56592, against clinical isolates of filamentous fungi. Mycopathologia. 141:73-77.

1470. Maury, S., T. Leblanc, M. Feuihade, J.-M. Molina, and G. Schaison. 1998. Successful treatement of disseminated mucormycosis with liposomal amphotericin B and surgery in a child with leukemia. Clin. Infect. Dis. 26:200-202.

1588. Moses, A. E., G. Rahav, Y. Barenholz, J. Elidan, B. Azaz, S. Gillis, M. Brickman, I. Polacheck, and M. Shapiro. 1998. Rhinocerebral mucormycosis treated with amphotericin B colloidal dispersion in three patients. Clin Infect Dis. 26:1430-1433.

1656. Nosari, A., P. Oreste, M. Montillo, G. Carrafiello, M. Draisci, G. Muti, A. Molteni, and E. Morra. 2000. Mucormycosis in hematologic malignancies: an emerging fungal infection. Haematologica. 85:1068-1071.

1731. Patel, R., D. Portela, A. D. Badley, W. S. Harmsen, J. J. Larson-Keller, D. M. Ilstrup, M. R. Keating, R. H. Wiesner, R. A. Krom, and C. V. Paya. 1996. Risk factors of invasive Candida and non-Candida fungal infections after liver transplantation. Transplantation. 62:926-934.

1751. Penk, A., and L. Pittrow. 1999. Therapeutic experience with fluconazole in the treatment of fungal infections in diabetic patients. Mycoses. 42:97-100.

1755. Perez, A. 1999. Terbinafine: broad new spectrum of indications in several subcutaneous and systemic and parasitic diseases. Mycoses. 42:111-114.

1780. Pfaller, M. A., F. Marco, S. A. Messer, and R. N. Jones. 1998. In vitro activity of two echinocandin derivatives, LY303366 and MK-0991 (L-743,792), against clinical isolates of Aspergillus, Fusarium, Rhizopus, and other filamentous fungi. Diagn. Microbiol. Infect. Dis. 30:251-255.

1782. Pfaller, M. A., S. A. Messer, R. J. Hollis, and R. N. Jones. 2002. Antifungal activities of posaconazole, ravuconazole, and voriconazole compared to those of itraconazole and amphotericin B against 239 clinical isolates of Aspergillus spp. and other filamentous fungi: Report from SENTRY Antimicrobial Surveillance Program, 2000. Antimicrob. Agents Chemother. 46:1032-1037.
1918. Ribes, J. A., C. L. Vanover-Sams, and D. J. Baker. 2000. Zygomycetes in human disease. Clin Microbiol Rev. 13:236-301.
2042. Schell, W. A. 2000. Unusual fungal pathogens in fungal rhinosinusitis. Otolaryngol Clin N Amer. 33:367-373,X.

34 Biological Safety Principles and Practices; Laboratory, Growth Chamber, and Greenhouse Microbial Safety; Plant Pathogens and Plant-Associated Microorganisms of Significance to Human Health 4th Edition; Anne K. Vadaver, Sue A. Tolin, and Patricia Lambrecht

MICROORGANISM	PATHOGEN HABITAT	HUMAN HEALTH RELATED	IDENTIFIED Source IgG	AGRAQUEST CONNECTIONS
STEMPHYLIUM (fungi)  **Cross-Over Infection Soil/Decaying Vegetation To Human**	**Found in soil** [7, 8] **Found in decaying vegetation** [8]	**Allergies** [7] √ **Asthma** [7] √ **Hay fever** [7] √ **phaeohyphomycosis: ~Dark lesion on the septum is a common presentation; sinusitis √ is associated with allergic rhinitis, √ polyps √ and/or some form of immunosuppression √ (immunodeficiency) [*Employee was diagnosed with CVD in 2003 & began 3 years of IV Immunoglobulin infusions*] Pphaeohyphomycotic (phaeohyphomycosis) sinusitis** [7, 8]	**STEMPHYLIUM POSITIVE** **8-11-2004** **PHYSICIAN PATH LABS**	**U.S. PATENTS** **6,004,774 Filed 11/25/1998** **AGRAQUEST PRODUCT** **Arabesque**

STEMPHYLIUM REFERENCES [but not limited to]

7 Quantus Analytical - mold spore descriptions

8. Stemphylium spp. (described by Wallroth in 1833); Dr Fungus
References:
531 de Hoog, G. S., J. Guarro, J. Gene, and M. J. Figueras. 2000. Atlas of Clinical Fungi, 2nd ed, vol. 1. Centraalbureau voor Schimmelcultures, Utrecht, The Netherlands.
1295. Larone, D. H. 1995. Medically Important Fungi - A Guide to Identification, 3rd ed. ASM Press, Washington, D.C.
2202. Sutton, D. A., A. W. Fothergill, and M. G. Rinaldi (ed.). 1998. Guide to Clinically Significant Fungi, 1st ed. Williams & Wilkins, Baltimore.
2432. Wildfeuer, A., H. P. Seidl, I. Paule, and A. Haberreiter. 1998. In vitro evaluation of voriconazole against clinical isolates of yeasts, moulds and dermatophytes in comparison with itraconazole, ketoconazole, amphotericin B and griseofulvin. Mycoses. 41:309-319