Aspergillus pragensis sp nov discovered during molecular reidentification of clinical isolates belonging to Aspergillus section Candidi - DTU Orbit (17/01/2019)

Aspergillus pragensis sp nov discovered during molecular reidentification of clinical isolates belonging to Aspergillus section Candidi

The identity of nine clinical isolates recovered from Czech patients and presumptively identified as Aspergillus sp. section Candidi based on colony morphology was revised using sequences of beta-tubulin, calmodulin gene sequence, and internal transcribed spacer rDNA. Six isolates were from suspected and proven onychomycosis, one from otitis externa, and two associated with probable invasive aspergillosis. The results showed that one Aspergillus candidus isolate was the cause of otitis externa, and both isolates obtained from sputa of patients with probable invasive aspergillosis were reidentified as A. carneus (sect. Terrei) and A. flavus (sect. Flavi). Three isolates from nail scrapings were identified as A. tritici, a verified agent of nondermatophyte onychomycosis. One isolate from toenail was determined to be A. candidus and the two isolates belonged to a hitherto undescribed species, Aspergillus pragensis sp. nov. This species is well supported by phylogenetic analysis based on beta-tubulin and calmodulin gene and is distinguishable from other members of sect. Candidi by red-brown reverse on malt extract agar, slow growth on Czapek-Dox agar and inability to grow at 37 degrees C. A secondary metabolite analysis was also provided with comparison of metabolite spectrum to other species. Section Candidi now encompasses five species for which a dichotomous key based on colony characteristics is provided. All clinical isolates were tested for susceptibilities to selected antifungal agents using the Etest and disc diffusion method. Overall sect. Candidi members are highly susceptible to common antifungals.

General information
State: Published
Organisations: Department of Systems Biology, Natural Product Chemistry, Czech National Institute of Public Health, Czech Academy of Sciences, General University Hospital , United States Department of Agriculture
Contributors: Lyskova, P., Hubka, V., Kolank, M., Skorepova, M., Peterson, S. W., Frisvad, J. C.
Number of pages: 12
Pages: 565-576
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: Medical Mycology
Volume: 52
Issue number: 6
ISSN (Print): 1369-3786
Ratings:
BFI (2019): BFI-level 1
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.58 SJR 0.973 SNIP 1.056
Web of Science (2017): Impact factor 2.799
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.28 SJR 1.049 SNIP 1.001
Web of Science (2016): Impact factor 2.377
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.53 SJR 1.077 SNIP 1.056
Web of Science (2015): Impact factor 2.644
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.43 SJR 1.04 SNIP 1.161
Web of Science (2014): Impact factor 2.335
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.29 SJR 1.002 SNIP 1.105
Web of Science (2013): Impact factor 2.261
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.35 SJR 0.977 SNIP 1.025
Original language: English
Keywords: Czech Republic, Europe, Palearctic region, invasive aspergillosis, Aspergillosis (MeSH), fungal disease epidemiology, onychomycosis, Onychomycosis (MeSH), integumentary system disease, fungal disease, otitis, Otitis (MeSH), ear disease, Fungi, Plantae (Fungi, Microorganisms, Nonvascular Plants, Plants) - Fungi Imperfecti or Deuteromycetes [15500*], Aspergillus flavus species, Aspergillus carneus species, Aspergillus pragensis species, new species pathogen description, Aspergillus Candidi species pathogen, Primates Mammalia Vertebrata Chordata Animalia (Animals, Chordates, Humans, Mammals, Primates, Vertebrates) - Hominidae [86215], human common host, Aspergillus carneus, Bt2a gene [Fungi Imperfecti or Deuteromycetes] expression, Aspergillus pragensis beta-tubulin gene [Fungi Imperfecti or Deuteromycetes] expression, Aspergillus pragensis calmodulin gene [Fungi Imperfecti or Deuteromycetes] expression, internal transcribed spacer rDNA, 00504, General biology - Taxonomy, nomenclature and terminology, 03502, Genetics - General, 03504, Genetics - Plant, 03508, Genetics - Human, 11102, Anatomy and Histology - Gross anatomy, 12502, Pathology - General, 18506, Integumentary system - Pathology, 20006, Sense organs - Pathology, 36008, Medical and clinical microbiology - Mycology, 50506, Botany: general and systematic - Fungi, 51000, Morphology, anatomy and embryology of plants, 62520, Chordata: general and systematic - Mammalia, 62552, Biochemistry and Molecular Biophysics, Human Medicine, Medical Sciences, phylogenetic analysis mathematical and computer techniques, Infection, Molecular Genetics, Otolaryngology, Systematics and Taxonomy, Mycology, Veterinary, Taxonomic Revision, Physiological Data, DNA-sequences, Color Mutants, Onychomycosis, Taichungensis, Metabolites, Fumigatus, Penicillium, Infections, Aspergillus candidus, Aspergillus tritici, antifungal susceptibility testing, nondermatophyte onychomycosis, ootomycosis, polyphasic approach

DOIs: 10.1093/mmy/myu022
Source: FindIt
Source-ID: 268512900
Research output: Research - peer-review > Journal article – Annual report year: 2014