

ISHAM Working Group Annual Report 2018

1. Title of Working Group
Onygenales
2. Name(s) of Coordinator(s) with email addresses
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3. Website URL for external website (if relevant)
None. The web site of the group will be renovated during 2019.
4. Objectives and expected outcomes for the forthcoming year
<p>A thematic issue of the journal Mycopathologia on dermatophytes and other onygenalean fungi is currently in preparation. The content of this issue is based on the selected contributions presented at pre-ISHAM congress workshop in Amsterdam (“Workshop Onygenales”). Next workshop will be organized in Prague in 2020.</p> <p>Furthermore, the WG Onygenales has encouraged a number of studies on phylogenomics, metagenomics, virulence, epidemiology and taxonomy of dermatophytes. Special emphasis will be placed on the resolution of species boundaries and population genetic studies in the species complexes of critically important pathogenic dermatophytes: <i>Trichophyton mentagrophytes</i>/<i>T. interdigitale</i> complex, <i>Trichophyton tonsurans</i>/<i>T. equinum</i> and <i>Trichophyton benhamiae</i> complex.</p>
5. Achievements of the Working Group in 2018 (250 words) ¹⁻³
<p>A two-day pre-congress workshop “Onygenales: Dermatophytes and Systemic Fungi” was organized in Amsterdam before 20th ISHAM Congress. A total of 24 oral presentations were divided into four main thematic blocks: 1) Epidemiology; 2) Phylogeny/ Taxonomy/ Diagnostics; 3) Virulence and disease; 4) Novel techniques/ Transcriptomics/ Proteomics</p> <p>A significant progress has been achieved in the epidemiology of dermatophytes (publication 1, see below); taxonomy, biology and antifungal susceptibility testing of dimorphic pathogens belonging to the family Ajellomycetaceae (2-4). Whole-genome analyses of <i>T. rubrum</i> complex members brought new insight into the evolution, population genetics and mating behaviour of these pathogens (4-6). Other publications were devoted to new or improved diagnostic/identification methods (7, 8) and analysis of mating-type loci across dermatophytes (9). Review publications summarized our knowledge about dermatophytes (10, 11) and current developments in the dermatophyte research (12).</p>

6. Publications arising from the Working Group

- 1) Uhrlaß *et al.* (2018) Molecular epidemiology of *Trichophyton quinckeanum* - a zoophilic dermatophyte on the rise. *J Dtsch Dermatol Ges* 16:21-32.
- 2) Jiang *et al.* (2018) Phylogeny, ecology and taxonomy of systemic pathogens and their relatives in Ajellomycetaceae (Onygenales): *Blastomyces*, *Emergomyces*, *Emmonsia*, *Emmonsiiellopsis*. *Fungal Divers*: 1-47.
- 3) Borman *et al.* (2018) Adiaspiromycosis and diseases caused by related fungi in Ajellomycetaceae. In: Seyedmousavi *et al.* (eds). *Emerging and Epizootic Fungal Infections in Animals*: 147-158. Springer, Cham. ISBN 978-3-319-72091-3
- 4) Dukik *et al.* (2018) Antifungal susceptibility of emerging dimorphic pathogens in the family Ajellomycetaceae. *Antimicrob Agents Chemother* 62: e01886-17.
- 5) Zhan *et al.* (2018) Phylogeny of dermatophytes with genomic character evaluation of clinically distinct *Trichophyton rubrum* and *T. violaceum*. *Stud Mycol* 89: 153-175.
- 6) Persinoti *et al.* (2018) Whole genome analysis illustrates global clonal population structure of the ubiquitous dermatophyte pathogen *Trichophyton rubrum*. *Genetics* 208: 1657-1669.
- 7) Dukik *et al.* (2018) Ultra-High resolution mass spectrometry of closely related dermatophytes with different clinical predilections. *J Clin Microbiol* 56: e00102-18.
- 8) Normand *et al.* (2018) Nucleotide sequence database comparison for Internal Transcribed Spacer 2 genetic region DNA barcode dermatophyte routine identification. *J Clin Microbiol* 56: e00046-18.
- 9) Kosanke *et al.* (2018) Unequal distribution of the mating type (MAT) locus idiomorphs in dermatophyte species. *Fungal Genet Biol* 118: 45-53.
- 10) Hubka *et al.* (2018) Common and Emerging Dermatophytoses in Animals: Well-Known and New Threats. In: Seyedmousavi *et al.* (eds). *Emerging and Epizootic Fungal Infections in Animals*: 31-79. Springer, Cham. ISBN 978-3-319-72091-3
- 11) Boral *et al.* (2018) Majocchi's granuloma: current perspectives. *Infect Drug Resist* 11:751-760.
- 12) Gräser *et al.* (2018) New insights in dermatophyte research. *Med Mycol* 56: S2-S9.

7. Funding provided by ISHAM in the past 3 years (Budget and year)

2016:

2017:

2018: 5000 SFr in 2018