ESCMID funds research on antifungal resistance and genetic evolution of the human papillomavirus

04/01/17, Basel: The European Society of Clinical Microbiology and Infectious Diseases (ESCMID) through its annual grant programme helps young investigators pursue ground-breaking research to advance our understanding of microorganisms and find better approaches to diagnose, prevent and treat infectious diseases. At the end of 2016 the society is highlighting two outstanding projects that have been funded through its research grants; one was a study on resistance after treating patients with antifungal drugs and another on the genetic evolution of the human papillomavirus (HPV) genotype 16 causing most of the HPV-related anogenital cancers in humans.

Like every year, ESCMID has reserved about EUR 330,000 for its grant programme to finance a number of promising research projects, carefully selected from the roughly 100 proposals it receives. To illustrate the value early research funding has in investigators’ careers, ESCMID wants to showcase two examples where its EUR 20,000 grants have allowed young researchers to successfully execute their projects.

A 2015 ESCMID grant helped Ville Pimenoff from the Catalan Institute of Oncology in Barcelona and colleagues conduct research on the evolution of human papillomavirus genotype 16 (HPV16). Pimenoff’s comparison of the evolutionary histories of HPV16 and humans generated evidence that one of the viral lineages that can cause anogenital cancers might have been evolving mostly among Neanderthals and, only in our recent evolutionary history, passed on to modern humans from Neanderthals. Pimenoff hopes that his research, which was widely covered by the mainstream media, will not only improve our understanding of one of the most widely spread viral infections but also help raise awareness of HPV and today’s options for prevention of HPV-related cancers including HPV vaccines and cervical cancer screening. The results of his study were published in the journal Molecular Biology and Evolution.

“Our study is the first evolutionary genetic study of infectious diseases explaining the pathogen evolution and related clinical cancer causality through ancient admixture (and subsequent HPV transmission) between Neanderthals and modern humans, which still today has a clear clinical relevance for millions of HPV-infected individuals,” Pimenoff commented. “ESCMID grants allow young investigators explore his/her own projects with autonomy and room for experimentation. Without the ESCMID grant I could not have accomplished this project. Therefore, I would like to encourage young investigators to make use of this great opportunity.”
Rasmus Hare (Jensen) from the Statens Serum Institut in Copenhagen received an ESCMID research grant in 2013. Hare and his colleagues investigated the prevalence of intrinsic and acquired drug resistance of *Candida* in patients treated for candidaemia, a potentially fatal bloodstream infection caused by *Candida* yeasts, which primarily affects patients with a compromised immune system. The researchers were able to isolate resistant yeasts – particularly *Candida glabrata* – in patients who had received an antifungal therapy with azoles, suggesting that the colonizing mucosal microbiota may be an unrecognized reservoir of resistant *Candida* species following candidaemia treatment. The resistance rates were high, raising concern in general for patients exposed to antifungal drugs, Hare and his colleagues concluded. The results of his study were published in the journal *Antimicrobial Agents and Chemotherapy*.

“More economic freedom allowed me to follow my ideas and thanks to administrative formalities held at an absolutely minimum I was able to focus my efforts on the scientific outcomes,” Hare commented.

“The grant has been an essential boost to my aspiring career within medical mycology and antifungal resistance, and I hope that I can humbly express my sincere gratitude for the grant and the work by the entire ESCMID network.”

Ref.:
Ville Pimenoff:

- *Transmission Between Archaic and Modern Human Ancestors During the Evolution of the Oncogenic Human Papillomavirus 16* [http://dx.doi.org/10.1093/molbev/msw214](http://dx.doi.org/10.1093/molbev/msw214)

Rasmus Hare (Jensen):


*Notes to editor*

ESCMID Research Grants are awarded to outstanding research projects proposed by young ESCMID members. The ESCMID Executive Committee selects the project(s) after peer-review by three independent experts per proposal.

ESCMID will be accepting applications for 2018 starting in July 2017 (with a submission deadline in October 2017). Only projects dealing with bacterial infections and diseases (including antibacterial susceptibility and resistance, diagnostics, pathogenesis, antibacterial stewardship, vaccines) will be accepted. Please find more information on the applications for research grants [here](http://defacto.com).

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ESCMID is a non-profit organization dedicated to improving the diagnosis, treatment and prevention of infectious diseases in Europe and beyond. The Society promotes and supports research, education and training and shares good medical practice in infection-related disciplines with a special focus on antimicrobial resistance to build capacity throughout the world. www.escmid.org