New ideas to fight infections

medac Research Award 2018 for HKI junior scientists

December 10, 2018

The awardees of the medac research award 2019

Three outstanding publications that also involved ILRS doctoral researchers were honoured by the medac research award at the Leibniz Institute for Natural Product Research and Infection Biology. The medac GmgH pharmaceutical company awards 10.000 Euro to foster cooperation between scientists and to find new ways to fight infections.

The award goes to the authors of three high-impact papers that were published in renowned scientific journals.

The team of Pierre Stallfort, including ILRS doctoral researcher Martin Klapper, discovered two new active compounds, Jessenipeptin and Mupirocin, which are synergistically active against MRSA. Both substances are only made when certain bacteria live together with amoeba. It was especially challenging to develop techniques to co-cultivate such distant species and then isolate the natural products.

Vito Valiante and his colleague Dirk Hoffmeister from the Friedrich Schiller University Jena developed a new biotechnological process for Psilocybin. ILRS doctoral researchers Jun Lin, Johann Kufs and Maria Stroe were involved in the production of this psychoactive natural product that has been shown to be active against severe and chronic depression.

Bernhard Hube and his coworkers study how the pathogenic yeast Candida albicans reaches the blood stream from the intestine. The could show that the fungal toxin candidalysin plays a key role by creating holes in the cell walls, allowing the fungus to penetrate the epithelial barriere.

Original publications:

Arp J, Götze S, Mukherji R, Mattern DJ, García-Altares M, Klapper M, Brock DA, Brakhage AA, Strassmann JE, Queller DC, Bardl B, Willing K, Peschel G, Stallforth P (2018) Synergistic activity of cosecreted natural products from amoebae-associated bacteria. *Proceedings of the National Academy of Sciences of the USA* 115, 3758-3763.

Hoefgen S, Lin J, Fricke J, Stroe MC, Mattern DJ, Kufs JE, Hortschansky P, Brakhage AA, Hoffmeister D, Valiante V (2018) Facile assembly and fluorescence-based screening method for heterologous expression of biosynthetic pathways in fungi. *Metabolic Engineering* 48, 44-51.

Allert S, Förster TM, Svensson CM, Richardson JP, Pawlik T, Hebecker B, Rudolphi S, Juraschitz M, Schaller M, Blagojevic M, Morschhäuser J, Figge MT, Jacobsen ID, Naglik JR, Kasper L, Mogavero S, Hube B (2018) *Candida albi*cans-induced epithelial damage mediates translocation through intestinal barriers. *mBio* 9(3). pii: e00915-18.