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Unlocking the potential of fungi: QuantFung project

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The crisis of antibiotic resistance has been much discussed in recent decades within research communities and in public. However, options to slow down the spread of resistance and the opportunities to discover new antimicrobial agents seem to be limited at present. Can we, by unlocking the hidden potential of fungi, attain new means to gain advantage in this battle?

Filamentous fungi produce a large number of structurally and chemically diverse compounds known as secondary metabolites. These compounds include the industrially relevant antibiotic penicillin, the immunosuppressant cyclosporine and the cholesterol lowering agent lovastatin.

The fungal kingdom exhibits a huge reservoir of bioactive secondary metabolites. However, the wealth of diversity of the fungal species is still not represented in large scale bioprocesses and the development from discovery to application remains a challenge.

The Marie Curie Initial training Network on Quantitative Biology for Fungal Secondary Metabolite Production (QuantFung) has the objective to find novel bioactive molecules by exploiting the wealth of fungal biodiversity and to translate these into useful products. It involves seven universities and a research institute, one industrial company as a full partner and three associated industry partners, and is located in five different countries. 11 early-stage researchers and 4 experienced researchers are trained to work on discovery of secondary metabolite gene clusters, targeted activation of gene clusters, quantification of secondary metabolites in industrial hosts, and bioactivity testing. In the coming years, we envision to make a significant contribution to new methods for finding and producing novel bioactive molecules from fungi.