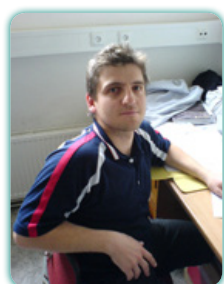


3<sup>rd</sup> International Conference on

# Applied Microbiology and Beneficial Microbes

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### Awakening of *Streptomyces*: Novel insights into germination of bacterial arthrospores

*Streptomyces* is a bacterial clade deeply studied for the capacity of its members to produce a wide variety of valuable compounds including antibiotics. Spore germination, as a developmental counterpoint to the production phase, represents an exceptional study model of bacterial cell differentiation that presents a complete transformation of cellular morphology and the restoration of all physiological processes. Dormant spores possess unique intracellular conditions where macromolecules are present, stabilized in a trehalose-milieu. The subsequent water influx into the hydrophobic cells retrigger the cellular metabolism. Then, germination can be understood as a sequence of cellular responses to external signals that are eventually reflected in complete cell reconstruction. The whole process is subjected to various controlling mechanisms that are responsible for appropriate changes in gene expression. Even production of secondary metabolites has been found recently presumably to coordinate the development by means of the intercellular communication. Focusing on the fore mentioned points, current knowledge about the process of germination in *Streptomyces* will be presented.

### Biography

Jan Bobek is the Head of Laboratory of Bacteriology in the Institute of Immunology and Microbiology in Prague. His entire professional career encompasses studies of bacterial gene expressions and their regulations. He has published about 20 papers in impacted scientific journals.

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