

## **Transcriptional response of a dual phototrophic bacterium to environmental changes**

**Dr. Jürgen Tomasch**

Laboratory of Anoxygenic Phototrophs, Centre Algatech, Institute of Microbiology CAS,  
Třeboň

*Sphingomonas* sp. AAP5, isolated from an alpine lake, contains genes for rhodopsin and bacteriochlorophyll-based phototrophy. We used high-throughput RNA-sequencing to study how this bacterium adapts to changes of environmental parameters and under which conditions which photosystem is preferred. Co-regulation suggests a role of photosynthesis in transport of nutrients. Analysis of rhodopsin gene expression with single-nucleotide resolution suggests two different modes of regulation, promotor activity and transcriptional attenuation. I will also discuss technical aspects like sequencing depth and replication that should be taken into consideration when designing transcriptome experiments.