



Vereinigung für  
Allgemeine und  
Angewandte  
Mikrobiologie



## 15. VAAM Industry-Academia Panel

19.09.2024, 4 pm, online via Zoom

***„Next generation transformation - bioportides for gene delivery in various eucaryotic and procaryotic microorganisms“***



**Christoph Kutzner, Badische Peptide und Proteine (BPP) GmbH, Heidelberg**  
***Better Peptides - From peptide production to Gene Delivery***

BPP is a young Biotech company with three scalable, cost efficient and environmentally friendly technology platforms for the production and application of peptides and proteins. The company is also one of the bioeconomy key players in Baden-Württemberg. During the development of the linear production technology of BPP, a joint project with RLP Agrosience to use certain peptides as gene delivery tools in plants revealed fascinating results that in turn led to the development of BPP Bioportides. These are currently tested in gram-negative and -positive bacteria as well as other microorganisms. Bioportides constitute the first kit product by BPP for multipurpose gene delivery of various nucleic acid types into various cell types. The university of Tübingen is a partner institution that hosts some of our cooperating work groups. One of the successful testers is the work group of Prof. Forchhammer and Dr. Doello.



**Dr. Sofia Doello, Dept. of Microbiology/ Organismic Interactions, University of Tübingen**  
***Bioportide mediated transformation of cyanobacteria***

Cyanobacteria hold immense potential for biotechnological applications. Thus, they are often genetically modified/engineered for the mass production of sustainable energy sources. However, till date, the efficient transformation of cyanobacteria is still a significant challenge, primarily due to the thick cell walls and complex regulatory mechanisms that hinder the uptake and expression of exogenous genes. Advancements in transformation methods would facilitate more precise genetic manipulations, enabling scientists to explore gene functions and regulatory networks with greater accuracy. Till date, cyanobacteria are transformed by a variety of techniques, including as electroporation, tri-parental conjugation, and natural transformation. These techniques are frequently laborious, inefficient, and not suitable for all cyanobacteria. Therefore, we are using Bioportide, a transmembrane protein that binds to the target gene and transfers it across the cell membrane, to induce more successful transformation in a variety of cyanobacteria species.