

## A new tool for rapid assembly and optimization of multigene constructs

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The purpose of this presentation is to give an overview of the tools available for multigene assembly and to introduce a new tool for rapid assembly and optimization of multigene constructs. For gene therapy or for creating cell-based model systems multiple genes might have to be introduced and at the same time one or many genes might have to be knocked down. However, a bottleneck is the time, cost and difficulty of optimizing the multigene construct. Therefore a technique for iterative multigene assembly of standardized modules which is inexpensive, fast, effective and with the possibility of high-throughput is desired. By combining proven technologies like Gateway and iterative site specific integration (ISSI) a more powerful tool for multigene assembly can be created. The Gateway technology allows assembly of up to five modules simultaneously in vitro which can be used for fast, easy and cost-effective assembly and customization of the individual genes of interest (GOIs) by using standardized modules of promoters, tags, open reading frames etc. The ISSI technology can be used in vivo to iteratively assemble the GOIs into a single multigene construct in a plasmid or directly in the genome effectively and inexpensively. ISSI in its current state is slow if a large number of GOIs have to be assembled, however, this can be circumvented by using a modified Gateway Destination Vector. Thus by simply combining existing proven technology a versatile, inexpensive, fast and effective technology with the possibility of high-throughput for multigen assembly can be created.

### Biography

Steffen Bank has been working as a geneticist for the last three years. He has published four papers concerning *Actinobaculum schaalii* and is co-founder of a study group whose purpose is to increase the awareness and detection of *A. schaalii* and works at the Department of Microbiology, Viborg Hospital, Denmark.

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