

Optimization of novel Respiratory Syncytial Virus-inhibitors by multi-parametric profiling (OPTIS)

Initiative: Innovative Ansätze in der antiviralen Wirkstoffentwicklung

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Laufzeit: 1 Jahre 3 Monate

The respiratory syncytial virus (RSV) is the causative agent of globally prevalent respiratory tract infections. Treatment options are limited: the standard-of-care consist of support with fluids and oxygen. To address this unmet medical need, the project team aims to develop innovative RSV fusion protein inhibitors with superior potency and resistance-breaking properties. In own preliminary work, the researchers have established an innovative multi-parametric workflow for the lead optimization of differentiated inhibitors. The chemical optimization is informed by structural biology and a phenotypic RSV drug-resistance assay panel. There is a high potential for the development of drugs that evade resistance. This project involves collaborations with a pharmaceutical company, which has discovered an exquisitely potent RSV entry inhibitor with a unique three-fold symmetry matching the homo-trimeric structure of the fusion protein target. Sharing the RSV candidates, expertise and assay capacities of the consortium with the RSV entry inhibitor maximizes the synergies to deliver pre-candidates. The nomination of pre-candidates will be based on a proof-of-concept in a well-established RSV in vivo model.

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