Preclinical development of antiviral protease inhibitors targeting flavi- and coronaviruses

Initiative: Innovative Ansätze in der antiviralen Wirkstoffentwicklung

Bewilligung: 21.06.2021

Laufzeit: 3 Jahre

The project aims at the preclinical discovery and development of inhibitors of viral proteases from the flavivirus and coronavirus families, in particular Dengue virus, West Nile virus and MERS-CoV. A decisive element in this process will be reporter-gene-assays for protease inhibition. These intracellular model systems were proven to be highly valuable in past and ongoing efforts and resulted in the discovery of antiviral protease inhibitors that are currently in further preclinical development. The project will pursue the following aims: A) Extension of the reporter-gene-assay portfolio towards additional viral proteases of high but under-addressed medical need. B) Medicinal chemistry optimization of an existing class of lead compounds towards broad-spectral activity. C) Hit-to-lead chemistry for compounds identified in a high-throughput-screen at the European Lead Factory. D) Additional HTS screens carried out using the newly developed reporter-gene systems in combination with biochemical assays. Mid- and late-stage preclinical development of identified clinical candidate molecules will include a close collaboration with the industrial partner to ensure the diligent assessment of development potentials with a strong focus on clinical application.

Projektbeteiligte

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