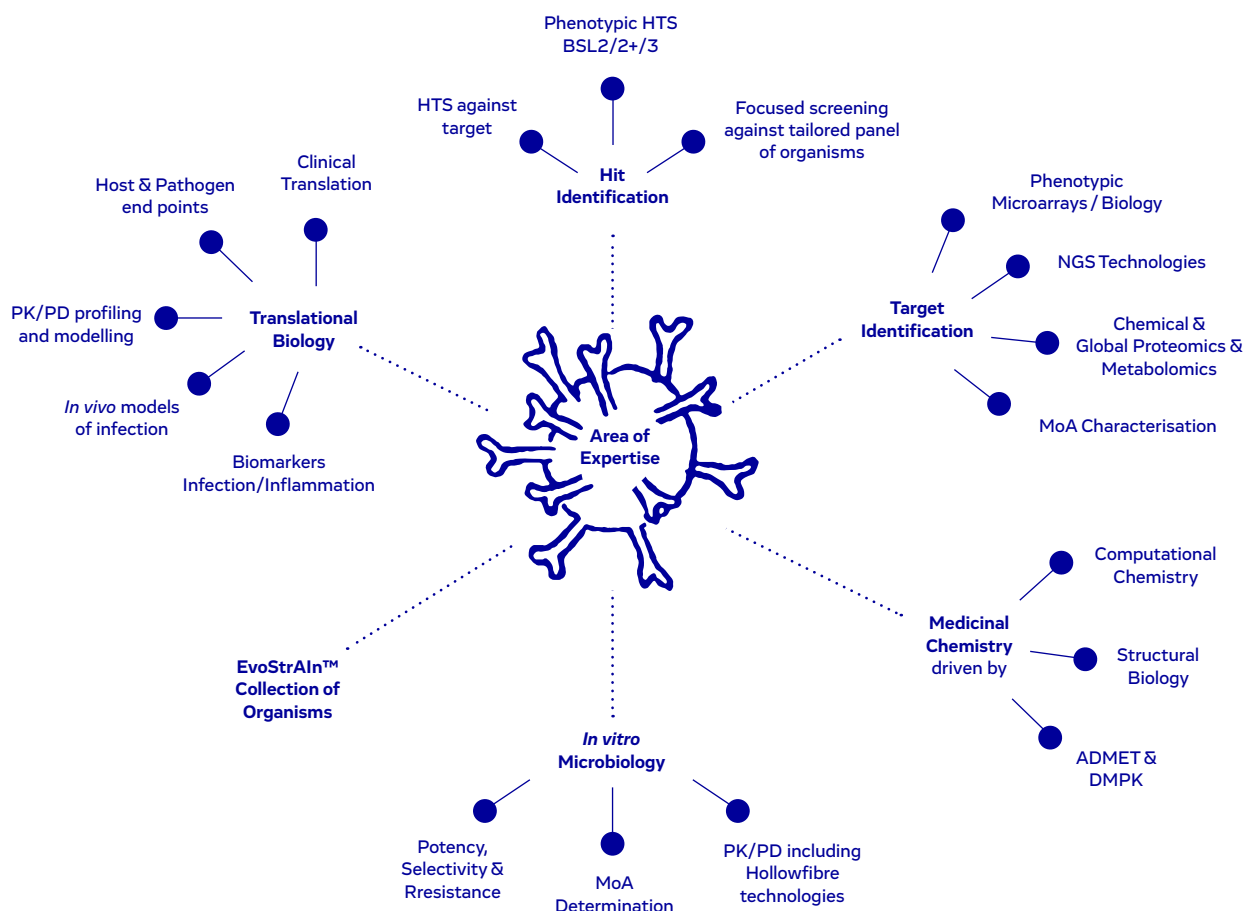


# Anti-Infectives: Virology Platform

- ▶ Fully integrated platform for fast and efficient identification and progression of novel antiviral therapeutics
- ▶ Cutting edge technologies and discovery platforms flexibly tailored around projects' scientific requirements
- ▶ Focus on respiratory viruses including SARS-CoV2 as well as hepatitis B virus, capabilities ranging from screening to animal models
- ▶ Development of novel tools, assays and models based on project requirements





## Viral *in vitro* assays

- ▶ Viral ToxGlo™ screening assay
  - Single step assay measuring metabolic activity
  - Increase in luminescence signal by inhibition of virus
  - Also suitable for cytotoxicity counter screens
  - Available for a range of viruses including SARS-CoV2
- ▶ Plaque assay
  - Quantification and validation of viral stocks
  - Quantification of viral burden in tissue
  - Generation of resistant virus
  - Mechanistic studies
- ▶ ELISA
  - Quantification of virus in infected cell culture
  - Quantification of virus specific antibodies from infected animals
- ▶ Microneutralisation assay
  - Quantification of virus specific neutralising antibodies from infected animals
- ▶ SARS-CoV2-spike pseudotype infection assay for all variants of concern

## Viral animal models – example SARS-CoV2 in hamster model

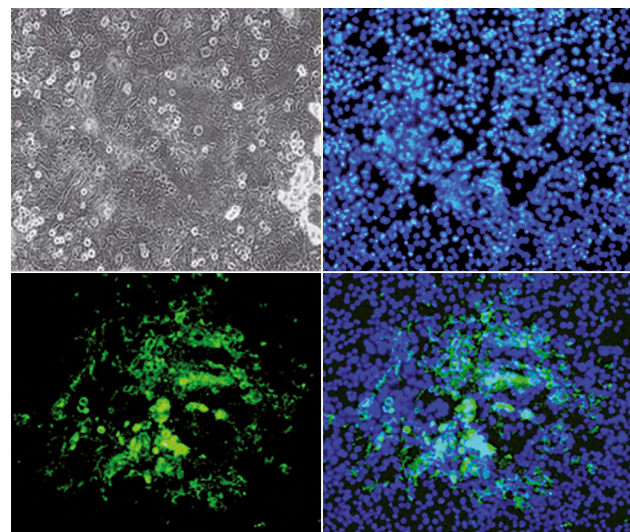
- ▶ Gold standard model for development of SARS-CoV2 treatment
- ▶ Hamster standard laboratory animals for SARS-CoV2 infection
- ▶ Model validated endpoints
  - Viral load in lung, nasal or other tissues homogenate by plaque assay and RT-qPCR
  - Viral titre in oral swabs by RT-qPCR
  - Antibody titre via ELISA
  - Immunohistochemistry
  - qPCR for viral load under development
- ▶ Transmission model and ACE2 transgenic mouse model in development
  - Neutralising antibodies in neutralisation assay
  - Blood and tissue cytokine/chemokine quantification

## Virology platform: From screening to pharmacodynamic assessment

- ▶ Antiviral HTS experience from reporter based replicon read-outs to infected cell assays handled in BSL2+ / BSL3
- ▶ Medium throughput screening in 96- and 384- well format, in infected cell assays with metabolic or enzyme read-out
- ▶ SAR screening for integrated programmes – antiviral potency vs. cytotoxicity
- ▶ MoA work e.g. resistant virus generation, order of addition effects, cell and virus strain specificity
- ▶ Access to Evotec platforms, e.g. Target identification by PhotoAffinity Labelling Mass Spectrometry (PALMS) studies, which can be performed in infected and uninfected cells
- ▶ Routine PK in mouse, rat and hamster, other rodent hosts are possible
- ▶ Development and performance of relevant rodent models

HEp2 cell infected with RSV-A2

Stained with DAPI (nucleus)



Stained with anti-RSV-F

Stained with anti-RSV-F (green) and DAPI (blue)