IMOL
SCIENCE
CLUB

Intercepting SARS-CoV-2 with nanobodies

May 4th, 2022

in person

CeNT – Lecture Hall
Warsaw, 2c Banacha Str.

2 pm.

Prof. Jim Naismith

Rosalind Franklin Institute, UK

IN PERSON SEMINAR

REGISTER

Camelid species have a different type of antibody which only has a heavy chain. As a result, the recognition element is confined to the variable portion of the heavy chain. This portion of the molecule, known as a nanobody, is around 125 residues in length stable and amenable to molecular biology.

We have used both lab-based and inoculation of llamas to generate nanobodies that bind to the receptor-binding domain of the spike protein of SARS-CoV-2. We have characterised these molecules by a range of biophysical techniques, including EM and crystallography.

The two techniques shed considerable light on the structural features that drive binding. We have been able to engineer the nanobodies based on our understanding of the affinity. Some of the nanobodies from the llama have extraordinary potency. We have progressed the molecules through biological assay and into animal trials where they show great promise.