

Nano-Virology

Interaction between Spike of SARS-CoV-2 and cell membrane molecule TMPRSS2

Kontakt: Rong.zhu@jku.at

Motivation:

- The mechanism of the entry of SARS-CoV-2 into the cell
- The binding strength and kinetics between the Spike and the TMPRSS2
- Dependence of the Spike-TMPRSS2 interaction on other molecules
- Kinetics of the enzymatic cleavage of the Spike by TMPRSS2

Tasks:

- Tip-chemistry: Functionalization of AFM cantilever tips with Spike or part of Spike molecule (e.g. S2)
- Force spectroscopy: Using AFM to measure interaction forces between Spike or S2 and TMPRSS2 in the cell membrane.
- Data evaluation and extraction of interaction force, kinetic rate constants, k_{on} , k_{off} , etc.

