

Stopping microorganism invasions

The human body is continuously defending itself from millions of foreign microorganisms. At Copenhagen University Hospital, in the laboratory of molecular medicine, the earliest stages of the human defense against microbial invasion is studied down to atomic detail. Of special interest is the pattern recognition protein molecules that can recognize parts of invading organisms. Through collaboration with NXUS scientists, the interaction of a pattern recognition molecule and an immune system activator protein has been studied through a combination of size exclusion chromatography and solution-based small-angle X-ray scattering (SEC-SAXS).



Structural aspects of the complex interaction between pattern recognition molecules and activator proteins from the early stages of the human innate immune system was investigated.

The interaction between the two studied molecules is non-trivial and requires multiple copies of both molecules to be functional. Through this NXUS case project and other scientific work, it has been shown that the SAXS technique can be used to study the early stages of the human innate immune system. This also demonstrates the power of combining complementary biophysical techniques to study and understand complex biological problems.



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