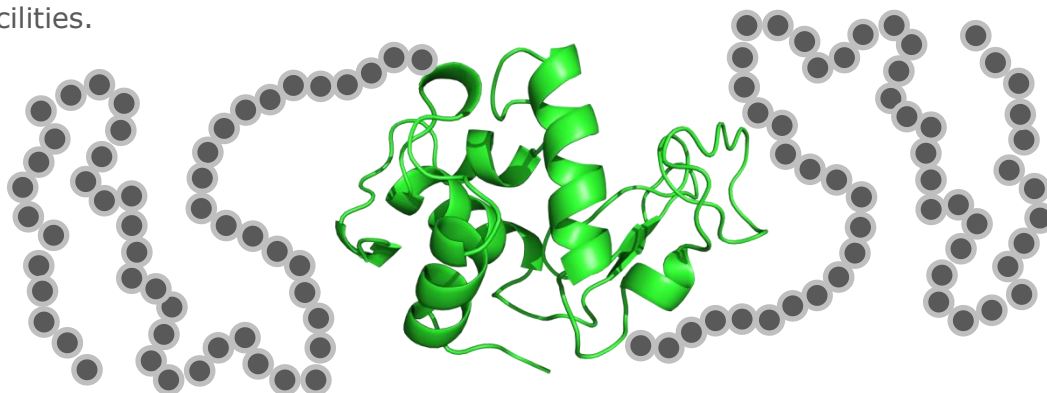


## Improving the stability of protein based medicine

Innovative and rational design of protein based pharmaceutical products is key to the success of Novo Nordisk A/S. To stabilize these drugs in the blood stream, and thereby obtain a prolonged duration of action, various polymer molecules can be attached to the protein. In collaboration with the NXUS project, new natural polymer molecules have been investigated. These polymers are highly interesting due to their ability to prolong the half life of proteins while being fully degradable in the human body. The length, structure and dynamics of these polymers are key determinants for their efficiency. These features have been investigated by advanced X-ray scattering experiments, performed at large scale international research facilities.



Showing a protein (green) decorated with the analyzed protraction polymers (grey)

The collaboration with the NXUS project revealed the underlying nanoscale structures and physical parameters that account for the different behavior of two new protein-stabilizing polymers. This unique knowledge has supplied Novo Nordisk A/S with new insight that will support better and more efficient development of future protein based drugs.



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