



Library Indian Institute of Science Education and Research Mohali



DSpace@IISERMohali / Thesis & Dissertation / Master of Science / MS-19

Please use this identifier to cite or link to this item: <http://hdl.handle.net/123456789/5730>

Title:	Study of supramolecular interactions between proteins and lanthanide complexes
Authors:	Panda, Rishab
Keywords:	supramolecular proteins
Issue Date:	Apr-2024
Publisher:	IISER Mohali
Abstract:	<p>The determination of the 3-D structure of any protein is essential for understanding its function. X-ray crystallography is the most used technique for the structure determination of biomacromolecules. Despite the availability of various experimental and computational methods for structure refinement, continuous improvement remains essential. Enter the crystallophore—a game-changing innovation. It is a lanthanide complex that acts as a molecular adhesive, enhancing the crystallization capacity of multiple proteins. This tiny molecule nestles between protein units, actively contributing to the crystal lattice. Due to the anomalous nature of f-block elements, it also acts as a very good phasing agent for X-ray crystallography. To boost performance, additional functional groups have been grafted onto the original compound. These modifications yield either fluorescent properties or more elegantly shaped crystals. Our focus lies on the understanding of the role of the crystallophore in the nucleation process through MD simulations and crystallization assays. We aim to unravel its interaction pattern with a model lysozyme protein, to understand the molecular basis of its nucleating properties. Additionally, we delve into other variants of the crystallophore, particularly to control and tune the size of protein crystals. We shall also study the impact of amino acid mutations in proteins on the efficiency of the crystallization process through the analysis of variants of the lysozyme protein.</p>
Description:	under embargo period
URI:	http://hdl.handle.net/123456789/5730
Appears in	MS-19
Collections:	

Files in This Item:

File	Description	Size	Format	
Under Embargo period.odt	under embargo period	9.72 kB	OpenDocument Text	View/Open

Show full item record



Items in DSpace are protected by copyright, with all rights reserved, unless otherwise indicated.