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Ansto



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Hybrid Protein-lipid materials for drug delivery into the cellular environment

Hybrid protein-lipid materials such as cubosomes are a novel way to encapsulate and protect proteins for a range of nanobiotechnological applications. Peptides and proteins used in new and exciting drug applications may degrade when introduced to the human blood stream, or undergo attack by the immune system. Therefore a biologically stable and safe compound such as a lipid based cubosomes are needed to transport these peptides to the cellular environment. To discover the loading potential of these lipid cubic phase(LCP) bulk and Cubosomes SAXS/WAXS was used to look at the lattice parameter of the LCP at a range of protein concentrations to analysis cubic phase swelling. This showed that the uptake and swelling of the LCP was dependent on the lipid used as well as layer stiffness. Synchrotron CD in Aarhus was used to determine the protein stability when incorporated into the cubic phase which showed no change in secondary structure when a protein is incorporated into the cubic phase.

Keywords or phrases (comma separated)

Cubosomes, Peptides, Lipid Cubic Phase, CD, SAXS, Drug Nanocarrier

Are you a student?

Yes

Do you wish to take part in</br>the Student Poster Slam?

Yes

Are you an ECR? (<5 yrs</br>since PhD/Masters)

No

What is your gender?

Male

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Track Classification: Biological Systems