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Self-assembly of protein nano-cages inside vesicles

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چکیده

Recent advances in computational protein engineering have provided assemblies of numerous forms, which have proven useful across broad areas of application. Designs that create well-defined nanoscale compartments are of particular interest. Similar protein compartments appear in nature and are intimately tied to important cellular processes, serving as enzymatic reaction vessels, storage containers, chaperones for protein folding and degradation, and even chambers with yet unknown purposes. The packaging, transport, and delivery of cargo within biological systems is one area where proteinaceous capsules perform particularly well; viruses are a convincing example. In this session I try to review some recent critical works in this field and also make an introduction about engineered protein nano-cages that containing extracellular vesicles; virus-like engineered nano-cages. We try to find affecting parameters controlling vesicles' size computationally and experimentally to design a well-defined system of enveloped protein nano-cages (EPN).

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