

## CPPs-proteins complexes as a novel topical protein delivery system

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**Background and Aims:** Plasma membrane (PM) is a major barrier for the cellular delivery of large hydrophilic therapeutic agents. To overcome the PM impermeability, short carrier peptides called Cell Penetrating Peptides (CPPs) have been recently designed and used to improve drug delivery in different disease models.

**Methods:** In our study, we used amphipathic CPPs as a novel drug delivery system to transport proteins into cells and we investigated properties of the CPP- Protein complexes. The morphology of the CPP-Protein complexes was studied by scanning electron microscopy (SEM), SDS-PAGE and photon correlation spectroscopy (PCS).

**Results:** PCS and SEM data confirmed complex formations as nanoparticles with the best diameter of below 300 nm. By using SDS-PAGE we found formation of complex and also the molecular weight of CPP-Protein complexes (43 kDa).

**Conclusions:** Data collected from SDS-PAGE, PCS, and SEM experiments strongly suggest globular nanoparticle formation of our CPP-Protein complexes which is considered an advantage for therapeutic purposes.

**Keywords:** Cellular delivery; Cell Penetrating Peptides (CPPs); Plasma membrane; SDS-PAGE