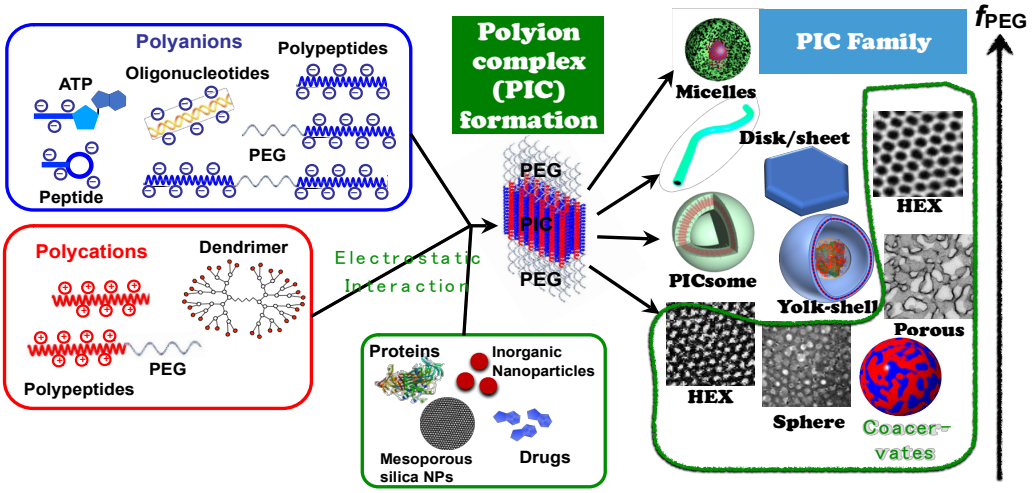
Protein Delivery Tool for Therapeutic Substances

- PICsome(polyion complex vesicle) and its family

Department of Intellectual Property Management

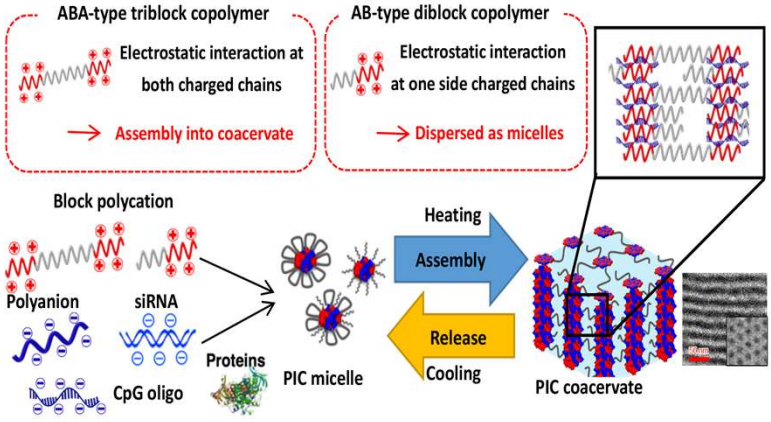
Key Technology

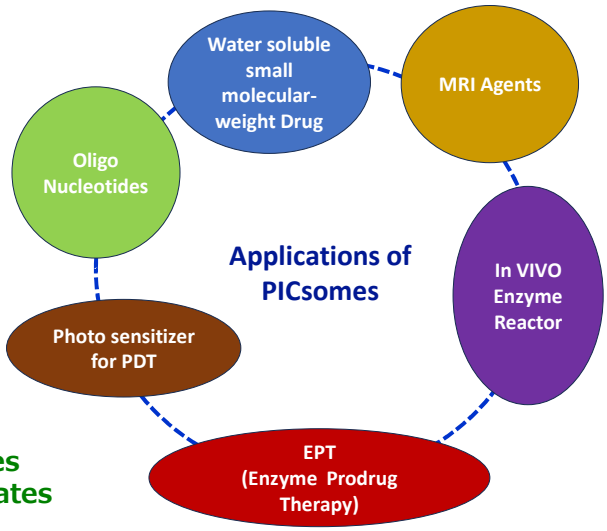
- Facile fabrication by mixing polyanion and polycation
- Selective formation of Micelle, Vesicle, and Nano structured microparticles by simply tuning PEG fraction (f_{PEG})



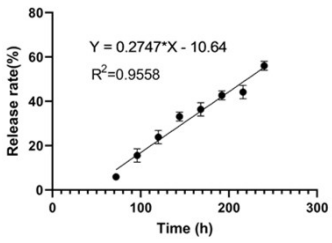
SUMMARY OF THE INVENTION (Methods of PIC nanostructure fabrication)

Highly ordered structure as a matrix for sustained release of ODN/proteins in nanoparticle forms





Release profile



- **Protein-loaded coacervates and siRNA-based coacervates can release protein- and siRNA-containing micelles in a sustained manner (zero-order release), respectively.**
- **It can last for > 150 h.**

ADVANTAGES over CURRENT TECHNOLOGIES

- Applicable for delivery of various substances widely used as medicines, e.g., conventional drugs, enzymes, siRNA, other nucleic acid etc.
- Applicable to targeted delivery to many tissues including brain.
- Can select suitable production method in accordance with the character of the substance.
- No need of organic solvents for fabrication. Simple fabrication methods.

APPLICATION

Treatment of brain diseases, cancers, and other diseases.

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Licensable Patent Title of Invention: Substance-encapsulating vesicle and process for producing the same
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