

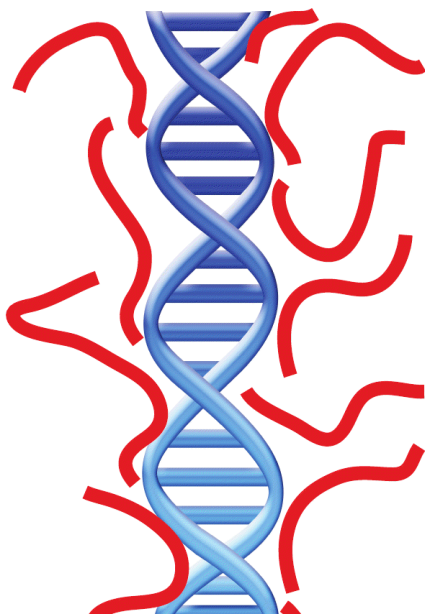


Complexation of Cell Penetrating Polymer

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Representation of siRNA (blue) and polymer (red) complex. The positive guanadine tail groups on the polymer are ionically attracted to the negative backbone of the RNA

Cell Penetrating Peptides (CPPs) are small amino acid sequences that are rich in arginine. These CPPs and their synthetic mimics, due to the guanadine functionality, have shown high uptake in cells. Recently, guanadine rich molecules have attracted interest as potential drug delivery agents and antimicrobials. Resesarch has shown that negative ions can form complexes with these molecules.

In this project, both siRNA and DNA were complexed with several different synthesized guanadine rich polymers. When formed, these complexes become neutrally charged, allowing the validity of the complex to be tested through gel electrophoresis. The size and surface charges were also compared to the unbound polymer. Through siRNA delivery and flow cytometry studies, these complexes have shown promise as drug delivery agents.