



ABSTRACT

In vitro screenings predict polymer ability to facilitate RNAi through its use as a delivery vehicle of siRNA

Gene therapy techniques have emerged in recent decades as a method of combating genetic disorders. One prospective branch of gene therapy is using RNA Interference (RNAi) to regulate gene expression. RNAi employs small interfering RNA (siRNA) to knockdown gene expression posttranscriptionally. The challenge for scientists is figuring out how to deliver the siRNA to target cells. Many groups are currently researching siRNA delivery techniques. It is hypothesized that in vitro screening of delivery techniques by measuring gene expression knockdown and viability will predict delivery success in vivo. For my senior thesis I will be studying a delivery mechanism of foreign siRNA and using in vitro screening techniques to analyze siRNA delivery by measuring gene knockdown and technique toxicity. It can be concluded that in vitro screening can predict in vivo delivery success.

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