New methods for controlled and targeted siRNA delivery

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Description:
Polymeric nanoparticles encapsulating inhibitory ribonucleic acids (RNAs) and methods of their manufacture and use are provided. Advantageous properties of the nanoparticles include: 1) high encapsulation efficiency of inhibitory RNAs into the nanoparticles, 2) small size of the nanoparticles that increases cell internalization, and 3) sustained release of encapsulated inhibitory RNAs by the nanoparticles that allows for administration of an effective amount of inhibitory RNAs to cells or tissues over extended periods of time. Encapsulation efficiency of inhibitory RNAs into the nanoparticles is greatly increased by complexing the inhibitory RNAs to polycations prior to encapsulation. Methods of using the polymeric nanoparticles for treating or inhibiting diseases or disorders are provided.

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