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## Patent Search

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#### Abstract:

The proposed invention involves the development of self-assembling organic nanomaterials for targeted drug delivery. This technology addresses the current limitations of conventional drug delivery methods by providing a more efficient, targeted, and safe platform for drug delivery. The self-assembling organic nanomaterials are designed to selectively target cells or tissues at the site of action, which can potentially improve the efficacy of drugs and minimize the risk of adverse effects. The invention has potential applications in the fields of cancer treatment, autoimmune disorders, infectious diseases, and personalized medicine. The development of self-assembling organic nanomaterials for targeted drug delivery is an exciting and promising field of research that can have significant implications for the future of medicine.

#### Complete Specification

**Description:**The proposed invention is a field of invention that focuses on the development of self-assembling organic nanomaterials for targeted drug delivery. The nanomaterials are made up of organic compounds that are capable of assembling themselves into precise structures at the nanoscale level.

**Background of the invention :**

Nanotechnology has emerged as a promising field of research for drug delivery due to its ability to deliver drugs directly to the target site. Nanoparticles with sizes in the range of 1-100 nm can cross biological barriers and accumulate in specific tissues or cells, making them an ideal candidate for targeted drug delivery. However, the development of efficient and biocompatible nanoparticles remains a significant challenge.

One of the most promising types of nanoparticles for drug delivery is organic nanoparticles. Organic nanoparticles are made up of organic molecules that are biodegradable, biocompatible, and have low toxicity. They can be designed to have a high drug-loading capacity, which enables the delivery of a large amount of drug to the target site. However, the efficient delivery of organic nanoparticles to the target site remains a challenge.

To overcome these challenges, researchers have turned to the development of self-assembling organic nanomaterials. Self-assembly is a process in which molecules spontaneously organize themselves into a specific structure. In the case of self-assembling organic nanomaterials, organic molecules are designed to interact with each other in a specific way, leading to the formation of a nanomaterial with a precise structure.

Self-assembling organic nanomaterials have several advantages over traditional drug delivery methods. Firstly, they can be designed to be highly specific to target particular tissues or cells in the body. This specificity is achieved by modifying the surface of the nanomaterial with targeting moieties, such as antibodies, peptides, or aptamers that bind specifically to receptors on the surface of the target cells. Secondly, the nanomaterials can be designed to have a high drug-loading capacity, enabling the delivery of a large amount of drug to the target site.

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