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# Dendrimers and Miktoarm Polymers Based Multivalent Nanocarriers for Efficient and Targeted Drug Delivery

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## Abstract:

The delivery of biologically active agents to the desired site in the body and intracellular organelles is still a big challenge despite efforts made for more than five decades. With the elaboration of synthetic methodologies to branched and hyperbranched macromolecules such as miktoarm stars and dendrimers, the focus has shifted to nanocarriers able to release and direct drug molecules to a desired location in a controlled manner. We present here recent developments in the field of targeted drug delivery with a focus on two specific macromolecular nanocarriers, dendrimers and miktoarm stars, and provide examples of these nanocarriers tested in different biological systems. A particular attraction of miktoarm stars is their versatility in achieving superior drug loading within their self-assembled structures. Advantages of dendrimers over linear polymers are that the former provide a platform for development of multivalent and multifunctional nanoconjugates, in addition to their ability to accommodate a large number of molecules inside, or at their surfaces.

## Published In:

Chemical Communications, doi:10.1039/C1CC11981H , Vol. 47 , pp. 9572-9587