Amphiphilic Peptide Self-Assembly: Expansion to Hybrid Materials

ID 3932599
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Year 2017
Title Amphiphilic Peptide Self-Assembly: Expansion to Hybrid Materials
Journal Biomacromolecules
Volume 18
Number 11
Pages / **Article-Number** 3471-3480
Mesh terms Nanostructures, chemistry; Nanotechnology, trends; Peptides, chemistry; Polymers, chemistry; Surface-Active Agents, chemistry
The design of functional systems with sizes in the nanometer range is a key challenge in fields such as biomedicine, nanotechnology, and engineering. Some of the most promising materials nowadays consist of self-assembling peptides or peptideâ“polymer hybrid materials because of their versatility and the resulting properties that can be achieved with these structures. Self-assembly of pure amphiphilic peptides or in combination with block copolymers results in a large variety of nanostructures (micelles, nanoparticles (NPs), compartments, planar membranes) each with different characteristics and tunable properties. Here, we describe such novel peptide- or peptideâ“polymer-based supramolecular nanostructures and emphasize their functionality and various promising applications.
Publisher American Chemical Society
ISSN/ISBN 1525-7797 ; 1526-4602
edoc-URL http://edoc.unibas.ch/56322/
Full Text on edoc Available;
Digital Object Identifier DOI 10.1021/acs.biomac.7b00764
PubMed ID http://www.ncbi.nlm.nih.gov/pubmed/28776980
ISI-Number WOS:000415391900002
Document type (ISI) Journal Article, Review