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Special Issue Reprint

Dendrimers

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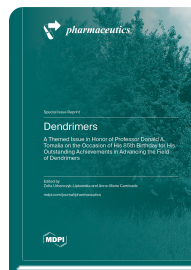
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This Special Issue Reprint is in honor of the creator of dendrimers, Prof. Donald A. Tomalia, on the occasion of his 85th birthday. Prof. Tomalia played a key role in establishing the place of dendrimers in polymer chemistry and in nanosciences. This Reprint displays the recent advances in the field of dendrimers and dendritic structures, with emphasis on diverse biological and pharmaceutical properties, written by many of the major contributors to the field. The first paper, a review, is a reflection on the beginning, past, present, and future of dendrimers in pharmaceutical, medicine, and life science. It is followed by three other reviews about ferrocene-based dendritic drugs inducing the Fenton mechanism to kill cancer cells, dendrimers functionalized with boron clusters for boron neutron capture therapy (BNCT) against cancers, and dendrimers used *in vivo* as drug carriers. Six research papers describe different types of dendritic structures, such as a large library of amphiphilic Janus dendrimers for the targeted delivery of mRNA and storage of vaccines, dendrons equipped with doxorubicin and an antibody against cancer cells, dendrons forming micelles encapsulating either doxorubicin or different drugs against cancer cells, dendrons cross-linked with polymers to form hydrogels suitable for drug release, and dendrons associated with human serum albumin. Three research papers concern dendrimers against choroidal neovascularization in eyes, protoporphyrin IX, and paclitaxel loaded in dendrimers against cancer cells.



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