

Degradable Dendrimers Containing 1,3,5-Triazaadamantanes

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1,3,5-Triazaadamantanes (TAAs) are a class of compounds formed from the condensation of aldehydes with 1,1,1-tris(aminoethyl)ethane derivatives. Under acidic conditions these molecules degrade to their starting materials. Previous work in the group has shown that changing the electronic properties of the aromatic aldehyde alters the degradation kinetics of the TAA molecule. Therefore, these compounds are being investigated as pH sensitive building blocks for degradable biomaterials.

A TAA monomer building block was synthesized and dendrimers with two or three branch points at the core were produced using an iterative, divergent method. Dendrimers containing up to 39 TAA units (MW > 40 kDa) were made. The periphery of these compounds is being modified to create gene and drug delivery vehicles.

