

Synthesis of a tyrosine-containing biomimetic molecule and spherical selfassembly thereof

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In this study, a biomimetic molecule was designed and applied to prepare a spherical assembly. A bolaamphiphile biomimetic molecule was prepared from azelaic acid and L-tyrosine benzyl ester p-toluenesulfonate salt. These chemicals are conjugated through the peptide to form a bolaamphiphilic biomimetic molecule with self-assembling property. The synthesized biomimetics molecule has many functional groups such as peptide bonds, carboxylic groups, and phenol groups. Because of these functional groups with the hydrophobic interaction, the synthesized molecule self-assembled to form spherical structure in the aqueous solution. Physicochemical properties of the synthesized biomimetic molecule was characterized using a variety of analysis equipments, and applications of the self-assembled structure was explored. The outcome of this study would contribute to design a novel biomimetic molecule and to construct a complex structure through the molecular interaction.