

Preparation of microtubes in centimeter scale by self-assembly of pyrrole derivatives

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Various nano/micro structures can be made through self-assembly where the molecular interaction directs. In this study, a novel amphiphilic molecule was synthesized through the conjugation of amide bond-containing hydrophilic molecule and carboxyl-pyrrole, and long, transparent microtubes were obtained by the self-assembly thereof. The prepared microtube grew straight with a length of several centimeters in both aqueous and organic phase. It is supposed that the hydrophobic interaction as well as hydrogen bond will induce the self-assembly of the molecules. These microtubes are expected to be applied as templates to make nanowires and scaffolds guiding the growth of a cell in a single direction.