

시스테인을 가진 양친성 분자 자기조립체의  
산소 흡착 성능 평가

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Cysteine plays considerably important role as a binding motif in many biological systems such as zinc fingers, coenzyme A, and glutathione. In addition, reversible oxidation–reduction reaction of cysteine is an essential process in many biochemical reaction systems. This strong oxidation–reduction activity was mainly driven from the thiol group. In this study, a novel biomimetic bolaamphiphilic molecule containing cysteinyl group at both ends was synthesized through conjugation of alkyl chain with cysteine. The newly synthesized bolaamphiphilic molecule self-assembled in a pH-controlled aqueous solution to display coiled structures. Structure of the molecule and the mechanism of the self-assembly were investigated through microscopy and spectroscopic methods. The cysteinyl bolaamphiphile constructed coil structures functioned as a solid support with binding sites of hemin. The prepared hemin–bolaamphiphile self-assembly suprastructure was examined as a oxygen adsorbent which absorbs oxygen in water.