Surface Modification for Biocompatible Materials by Layer-by-Layer Assembled Polymer Thin Coatings

김다름, 양성윤†
충남대학교
(sungyun@cnu.ac.kr†)

As the life span of human beings increases, the importance of the medical implants are increasing. The stability in vivo and cytoxicity of the medical implants is important. The purpose of this study is improving the surface properties of the material toward biocompatible and non-cytotoxic for biomedical applications by using layer-by-layer self assembly. We have studied various polyelectrolytes and supramolecular complexes of the surface coating.

In this paper, We will introduce the polyelectrolyte multilayer films of using cyclodextrin polymer with ionic groups. We studied the physical, chemical properties and cellular interactions of the coated films. The results of the study indicated that the cellular interactions depending on the hydrophilicity of the polymer surface. Relatively hydrophilic coating enhanced the cell proliferation. We could apply these biocompatible coatings for the microfluidic devices to the study of cellular activities including adhesion, motility, proliferation in microfluidic system.