

Ruthenium(II) Complex-loaded Peptide Self-Assembly as Luminescence Probes for Cellular Imaging

김소희, 김종민, 이상명†

강원대학교

(sangmyung@kangwon.ac.kr†)

Ruthenium(II) coordination compounds have rich photophysical properties as Luminescent transition metal complex, which enable newly development of responsive luminescence probes to specifically target and quantify analytes. Here, we developed peptide self-assembled nanostructure(YC₇@Au/Ru) using a Tyrosine rich peptide complexed with Ru(II) ion and Au(III) ion in a shape of sphere type and confirmed by TEM(EDX), UV-vis, PL, UV-vis, XPS and XRD. The resulting YC₇@Au/Ru nanostructure was modified with PEG-conjugated folic acid via carboxyl-activation. Confocal microscopy analyses showed that these YC₇@Au/Ru nanoparticles could selectively detect cancer cells expressing high-level Folate receptor. The cell viability was confirmed by MTT assay in the presence of YC₇@Au/Ru nanostructure. These achievements reveal that YC₇@Au/Ru can be applied to cellular uptake, intracellular targeting and cell tracking. Keyword : Ruthenium(II), peptide self-assembly, luminescence probe, cellular imaging