

Comparison of Cell Targeting Efficiency: Tumor Cell Receptor Binding vs. Cell Penetrating Peptide

조은지, 정소진, 문옥정, 이지원[†]
고려대학교
(leejw@korea.ac.kr[†])

The endocytosis-mediating performances of two types of peptide ligands, tumor cell receptor binding peptide (TRBP) and tumor cell membrane penetrating peptide(TMPP), were analyzed and compared with a carrier of peptide ligands-human ferritin heavy chain(hFTH) nanoparticle. 24 copies of a TMPP(human immunodeficiency virus-derived TAT peptide) and/or a TRBP (peptide ligand with specific and strong affinity for either human integrin($\alpha v\beta 3$) or epidermal growth factor receptor I(EGFR) that is overexpressed on various cancer cells) were genetically presented on the surface of each hFTH nanoparticle. The quantitative level of intracellular localization and endocytosis of fluorescence dye-labeled TRBP- and TMPP-presenting nanoparticles were estimated in the in vitro cultures of integrin- and EGFR-overexpressing cancer and human dermal fibroblast cells(control).