

Abstract

This work is focused on the synthesis of macromolecular hydrophilic polymer conjugates with fluorophores for visualization of solid tumors. These polymer probes were designed for their utilization within the image-guided endoscopic surgery, where the boundaries of the tumor tissue would be fluorescently marked after i.v. administration. Polymer carriers should provide prolonged circulation of the probe in the body and the transport of the fluorescent dye into the desired place.

Polymer probes based on *N*-(2-hydroxypropyl)methacrylamide (HPMA) copolymers prepared by radical copolymerization containing fluorescent dye cyanine7-NH₂ (Cy7-NH₂) were synthesized and evaluated. The dye was conjugated to the carrier via an enzymatically cleavable peptide linker, specifically Gly-Phe-Leu-Gly and Val-Cit-4-aminobenzylalcohol. The enzymatic hydrolysis of these polymer conjugates was studied using a model lysosomal enzyme cathepsin B. *In vitro* study was carried out using hypopharyngeal cancer cell line FaDu, in which the internalization of the probes into cells and accumulation in cell compartments was evaluated by the fluorescent confocal microscopy.

Key words: nanomaterials, polymer probes, fluorescence, EPR effect

[IN CZECH]