

Abstract

In the present study the amino-functionalized fullerenes (GP5, GP125) and the ammonium functionalized single wall carbon nanotubes (f-SWNTs) (NK28) were studied as potential gene carriers. The gene that was chosen to be studied is the gene of pectin lyase (PNL) that cleaves the α -1,4-glycosidic bond between the esterified molecules of D-galacturonic acid. For that purpose there were formed complexes between DNA and the functionalized: fullerenes & single wall nanotubes. The final purpose of these complexes is to study their ability to transform BL21[DE3] cells and Top10F⁻ cells, as well as their effect on the expression of pectin lyase gene and consequently the enzymic activity. The complexes were analyzed by Scanning Electron Microscopy-SEM, Atomic Force Microscopy-AFM, fluorimetry and agarose gel shift assay.