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Distinguishing Tumor Cells *via* Analyzing Intracellular Telomerase Activity

Lin CHEN[1], **Junyi HUANG**[1], **Fanben MENG**[2] **and Nandi ZHOU**[3]

1) Laboratory of Biosensing Technology, School of Life Science, Shanghai University
2) Department of Biochemistry and National Key Laboratory of Pharmaceutical Biotechnology, Nanjing University
3) School of Biotechnology and the Key Laboratory of Industrial Biotechnology, Ministry of Education, Jiangnan University

  Two strategies to identify tumor cells were developed in this research *via* analyzing the activity of telomerase inside the cells, which is regarded as the mark enzyme of tumors. The lysate of cells was used to assay directly. In the electrochemical assay, the substrate of telomerase was incubated with the lysate, followed by PCR amplification of the elongated products. Then the oxidation peak current of guanine that existed in the hydrolyte of PCR products was used as a target to identify tumor cells. In the spectral assay, the lysate of cells was used to catalyze the elongation of the substrate of telomerase modified on the surface of gold nanoparticles. Due to the formation of G-quadruple structures after elongation and subsequent aggregation of gold nanoparticles, the changes in UV-visible spectra can also be utilized to identify tumor cells.

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