Target efficiency of FITC-NGR-GD probe to HEPG2 cells in vitro

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Objective: To construct FITC-NGR-Gd targeted contrast agents and observe its targeting efficiency to HEPG2 cells in vitro.

Procedures: To use amide linkage to chemically synthesize the stable connector of FITC-NGR-Gd. To establish HEPG2 experimental group and HT-29 control group for cell fluorescence assay and observe the targeting efficiency of contrast agent to HEPG2 in vitro. To establish HEPG2 experimental group and HT-29 control group for cell in vitro MRI test, change the gadolinium concentration and observe the targeting efficiency of contrast agent to HEPG2 in vitro by measuring changes in T1 values. Results: FITC-NGR-Gd has a higher T1 relaxivity; immunofluorescence assay shows that in the cell test, HEPG2 experimental group has more CY3 targeted red fluorescence on the surface of cell membrane and the HT-29 control group has no marked red fluorescent substance on the cell membrane; FITC-NGR-Gd cell fluorescence assay shows that HEPG2 experimental group has more green FITC targeted fluorescence on the surface of cell membrane and HT-29 control group has no marked green fluorescent substance on the cell membrane. In vitro the cell MRI test shows T1 values of HEPG2 experimental group are significantly higher than that of HT-29 control group, P <0.05. There is statistically significant difference between two groups. With the increasing concentrations of gadolinium, T1 values of experimental groups increase progressively and the intensity enhances.

Conclusion: FITC-NGR-Gd can take HEPG2 cells as target in vitro and realize targeted fluorescence imaging and MRI imaging.

Key words: Fluorescein Isothiocyanate, NGR Peptide, Gadolinium , Liver Cancer , MRI

Biography
Xiaoguang you is MD and working in the department of Radiology, the affiliated hospital of Hainan Medical University. He has been engaged in the research and development of MR targeted contrast agents for nine years. He participated and chaired a number of national and provincial Natural Science Foundations and obtained a national patent.

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