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Down-regulation of HLA-A mRNA in peripheral blood mononuclear cell of colorectal cancer

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Purpose: It has been demonstrated that the alteration of human leukocyte antigen (HLA) class I expression frequently occurs in colorectal tumor. Previous studies focus on investigating HLA-A expression on tumor cells. However, the expression of HLA-A in peripheral blood mononuclear cell (PBMC) was unknown. In current study, with the aim of developing a non-invasive diagnostic method for colorectal cancer (CRC), we investigated the expression of HLA-A mRNA in peripheral blood mononuclear cell (PBMC) in patients with CRC.

Methods: Real-time quantitative RT-PCR was used to study the expression of HLA-A mRNA in PBMC from 48 patients with colorectal cancer, 38 patients with benign colorectal lesions, 20 patients with rheumatoid arthritis, 20 patients with esophageal cancer and 40 healthy individuals. Protein chip was utilized to detect serum CEA, CA 19-9 and CA 242 in all the cases. Overall results from the two methods were compared.

Results: The relative expression ratio of HLA-A mRNA in PBMC was 1.11 ± 0.45 in healthy group, 0.81 ± 0.42 in benign colorectal lesion group and 0.39 ± 0.34 in cancer group, respectively. The diagnostic sensitivity of HLA-A mRNA, CEA, CA19-9 and CA242 was 81%, 59%, 61% and 63%, and their diagnostic specificity was 75%, 64%, 52% and 67%, respectively.

Conclusions: The expression of HLA-A mRNA in PBMC from colorectal cancer group was significantly lower than that in both benign group and healthy group ($P < 0.001$). It could be potentially developed as a tumor assistant marker in future.

Biography

Feng Yan, has completed her Ph.D. from Yangzhou University in China. She is the vice director of Department of Clinical Laboratory in Jiangsu Cancer Hospital, and an Professor of Nanjing Medical University. The research works of Feng Yan focus on the bioanalytical chemistry in laboratory medical diagnostics, particularly in detection of tumor markers and tumor cells. She was the Outstanding Medical Talents, Excellent Medical Talent and Leading Medical Talent of Jiangsu Province.

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