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Frequent ID4 gene promoter hypermethylation in breast cancer

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The aim of the present study is to explore the possible mechanism of ID4 gene in breast tumorigenesis by observing the methylation status of ID4 gene promoter in breast cancer and its relationship with clinical pathological characteristics. The methylation level of ID4 promoter region in breast tumor (n=40) and normal tissue (n=20) specimens was detected by pyrosequencing and the correlation between the methylation level of ID4 gene and clinical pathological characteristics was analyzed. The methylation level of ID4 in MM-453 cell line before and after demethylation treatment was detected by pyrosequencing and the mRNA expression of ID4 was detected by RT-PCR. The methylation level of ID4 promoter region in breast tumor tissue was $(31.16\pm 1.5\%)$ and significantly higher than that in normal breast tissue $(19.89\pm 0.22\%)$. The methylation level of ID4 gene in ER positive breast cancer tissue was $(36.57\pm 1.97\%)$ and significantly higher than that in ER negative group $(27.91\pm 1.83\%)$. After the demethylation treatment in MM-453 cell line, the methylation level of ID4 gene decreased and the mRNA expression of ID4 increased remarkably. ID4 gene may play an important role in the breast cancer formation by a variety of ways including gene promoter hypermethylation, especially in ER positive breast cancer.

Biography

Yan Zhang has completed her MD from Ulm University in Germany and studied at the Heidelberg University. She is an Associate Chief Physician in Jiangsu Cancer Hospital in China. Presently, she is mainly involved in tumor biological target and chemotherapy, especially in lymphoma. She has published more than 15 papers in many reputed journals.

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