

论著

## 5-氟尿嘧啶上调干细胞标记物CD133在结肠癌细胞中的表达

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**摘要** 目的: 研究通过5-氟尿嘧啶(5-FU)对结肠癌干细胞标记物CD133表达的影响,探讨5-FU对结肠癌干细胞的影响。方法: 用流式细胞仪检测CD133在结肠癌细胞株表面的表达,磁珠细胞分离的方法分离结肠癌细胞株DLD1中CD133阳性和阴性的细胞群,细胞克隆形成实验检测2群细胞的自我更新能力,新型四唑氮盐方法(MTS)检测2群细胞对5-FU敏感性的差异,qPCR方法检测5-FU处理结肠癌细胞后CD133mRNA水平的变化。结果: 结肠癌细胞株DLD1、HT29、SW480、HCT116、Lovo、RKO细胞表面CD133的表达率分别为30.20%、82.00%、0.34%、91.80%、85.30%、0.28%。DLD1细胞中以CD133为标记有2群明显的细胞,MACS方法分离后阳性细胞群中CD133为87.21%±5.33%,而阴性细胞群中阴性细胞的比例为84.30%±4.65%;CD133阳性的细胞与未分离及CD133阴性细胞相比,克隆形成能力强(46.33%±4.44% vs 31.00%±2.00%,P<0.05),对5-FU的敏感性下降20%,P<0.01。在DLD1和HT29细胞中,5-FU 1 mg/L上调CD133mRNA水平的表达,从1升为1.684±0.012(P<0.01)、HT29细胞从30.702±0.284升为49.379±0.460(P<0.01)。结论: 与CD133阴性细胞相比CD133阳性细胞克隆形成能力强,对5-FU的敏感性下降;5-FU上调干细胞标记物CD133mRNA水平的表达,CD133阳性的结肠癌干细胞在5-FU的治疗过程中被富集。

**关键词** [结肠肿瘤干细胞](#) [CD133](#) [氟尿嘧啶](#)

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## 5-FU upregulates stem cell marker CD133 expression in colon cancer cells

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### Abstract

<FONT face=Verdana>AIM: To investigate the effect of 5-fluorouracil(5-FU)on the expression of the stem cell marker CD133 on colon cancer stem cells. METHODS: CD133 expression on several colon cancer cell lines was detected by flow cytometry. The CD133 positive cells from DLD1 cells were separated by the method of magnetic activated cell separation. Colony assay was used to measure self-renew ability and MTS assay was used to detect the sensitivity to 5-FU after separation. After 5-FU treatment, the change of CD133 mRNA level was measured by qPCR. RESULTS: CD133 expression on the surface of colon cancer cell lines DLD1, HT29, SW480, HCT116, Lovo, RKO was 30.20%, 82.00%, 0.34%, 91.80%, 85.30%, 0.28% respectively. DLD1 cells had two obvious populations according to CD133 expression. CD133 positive cells were separated from DLD1 cells, the positive purity was 87.21%±5.33% and the negative purity was 84.30%±4.65%. CD133 positive cells formed more colonies with limited dilution colony assay(46.33%±4.44% vs 31.00%±2.00%, P<0.05). CD133 positive cells were less sensitive to 5-FU compared to CD133 negative cells(20% less, P<0.01). 5-FU at concentration of 1 mg/L upregulated CD133 mRNA expression in both DLD1 and HT29 cells, the relative quantity was increased from 1 to 1.684±0.012(P<0.01)and 30.702±0.280 to 49.379±0.460(P<0.01)in HT29 and DLD1, respectively. CONCLUSION: Compared to CD133 negative cells, CD133 positive cells show more ability to form colonies in vitro, and are less sensitive to 5-FU. 5-FU upregulates the mRNA expression of CD133, resulting in the CD133 colon cancer stem cells enrichment during 5-FU

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treatment.</FONT>

**Key words** [Colon neoplasm stem cells](#) [CD133](#) [Fluorouracil](#)

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