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人肝癌PLC/PRF-5细胞中干细胞样细胞的分离及其特异性miRNAs的筛选 [点此下载全文](#)

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摘要:

目的: 分选及鉴定人肝癌PLC/PRF-5细胞中的肝癌干细胞样细胞, 研究其microRNAs(miRNAs)表达谱。方法: 以ABCG2为表面标志, 免疫磁珠法分选、流式细胞术检测ABCG2+和ABCG2-PLC/PRF-5细胞, 观察ABCG2+与ABCG2-PLC/PRF-5细胞的琼脂克隆形成能力和接种NOD/SCID小鼠的成瘤能力。应用miRNA芯片筛选ABCG2+和ABCG2-PLC/PRF-5细胞差异表达的miRNAs, real-time PCR验证部分差异表达的miRNAs。结果: 免疫磁珠分选的ABCG2+PLC/PRF-5细胞纯度可达(84.20±4.52)%。ABCG2+PLC/PRF-5细胞比ABCG2-PLC/PRF-5细胞形成更多、更大的克隆集落(47.17±10.50 vs 23.33±7.31, P<0.05); NOD/SCID小鼠接种1×104个ABCG2+PLC/PRF-5细胞即可成瘤, 而ABCG2-PLC/PRF-5细胞至少需要5×105个才可成瘤; 5×105个细胞时, ABCG2+PLC/PRF-5细胞组的肿瘤体积显著大于ABCG2-PLC/PRF-5细胞组[(3.73±1.19) cm3 vs (0.72±0.57) cm3, P<0.01]。ABCG2+PLC/PRF-5细胞和ABCG2-PLC/PRF-5细胞差异表达的miRNAs有20个: 上调的13个, 下调的7个; real-time PCR验证其中的hsa-miR-30a和hsa-miR-630的差异表达, 其结果与miRNA芯片结果基本一致。结论: 人肝癌细胞系PLC/PRF-5中ABCG2+细胞具有肿瘤干细胞特性; ABCG2+和ABCG2-PLC/PRF-5细胞差异表达的miRNAs有20个, 它们在肝癌发病中可能起重要的调控作用。

关键词: [肝癌](#) [肝癌干细胞](#) [microRNA](#) [表达谱](#) [免疫磁珠分选](#)

Isolation of stem-like cells from human hepatocellular carcinoma PLC/PRF-5 cells and screening for their specific miRNAs [Download Fulltext](#)

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Abstract:

Objective: To isolate stem-like cells from hepatocellular carcinoma cell line PLC/PRF-5 and to study their miRNA profile. Methods: [WTBZ] ABCG2+ and ABCG2- PLC/PRF-5 cells were isolated from the PLC/PRF-5 cell line by magnetic activated cell sorting (MACS) method, and further identified by flow cytometry. The colony formation ability in soft agar and tumor formation ability in NOD/SCID mice of ABCG2+ and ABCG2- PLC/PRF-5 cells were observed. miRNA chip was adopted to screen the differentially expressed miRNAs between ABCG2+ and ABCG2- PLC/PRF-5 cells; and real-time PCR assay was used to confirm the results of miRNA chip. Results: [WTBZ] The purity of ABCG2+PLC/PRF-5 cells isolated by MACS method was (84.20±4.52)%. The colony number and size formed by ABCG2+ PLC/PRF-5 cells were more and larger than those formed by ABCG2- cells (47.17±10.50 vs 23.33±7.31, P<0.05). 1×104 ABCG2+ cells could form tumors with at least 5×105 cells needed for ABCG2- cells. The size of tumors generated by 5×105 ABCG2+ cells was larger than that by the ABCG2- cells [(3.73±1.19) cm3 vs (0.72±0.57) cm3, P<0.01]. There are 20 miRNAs differentially expressed between ABCG2+ and ABCG2- cells, with 13 up-regulated and 7 down-regulated. Real-time PCR assay was applied to further verify the differential expression of hsa-miR-30a and hsa-miR-630, and the results were in accordance with those of miRNA chip. Conclusion: ABCG2+ PLC/PRF-5 cells in hepatocellular carcinoma cell line PLC/PRF-5 have the properties of cancer stem cells. Twenty miRNAs are differentially expressed between ABCG2+ and ABCG2- PLC/PRF-5 cells, which might play important roles in the carcinogenesis of hepatocellular carcinoma.

Keywords: [hepatocellular carcinoma](#) [hepatocellular carcinoma stem cell](#) [microRNA profile](#) [magnetic activated cell sorting](#)

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