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抑制结肠癌细胞与肝窦内皮细胞黏附的功能性抗体的初步研究 [点此下载全文](#)

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摘要:

**摘要** 目的: 研制抑制结肠癌细胞与肝窦血管内皮细胞黏附的功能性单抗, 鉴定该单抗识别的抗原分子。方法: 以人肝窦内皮细胞(human liver sinusoidal endothelial cell, HLSEC)免疫BALB/c小鼠, 将小鼠脾细胞与SP2/O细胞融合, 采用甲基纤维素选择培养液培养, 制备抗HLSEC的单克隆抗体库。采用免疫荧光染色、黏附实验等方法筛选、鉴定能抑制结肠癌Ls174T细胞与肝窦内皮细胞黏附的功能性单克隆抗体。提取肝窦内皮细胞膜蛋白, 采用Western blotting方法鉴定单抗识别的功能性抗原蛋白。结果: HLSEC免疫小鼠的脾细胞与SP2/O细胞融合后产生1 440个杂交瘤株, 获得119株产生抗HLSEC抗体的阳性克隆, 其中20株能显著抑制具有肝转移能力的结肠癌Ls174T细胞与HLSEC的黏附; 其中15株为IgM型, 3株为IgG型, 2株测不到重链; 其中1株抗黏附能力最强的单抗(黏附抑制率为51%)命名为12B6, 该单抗在5~200 μg/ml范围内显著阻断HLSEC与Ls174T的黏附, 且呈剂量依赖性; 单抗12B6所识别的HLSEC抗原蛋白的相对分子质量为46 000。结论: 建立了抗HLSEC单克隆抗体库, 获得了20株具有抑制结肠癌细胞与肝窦血管内皮细胞黏附的功能性抗体, 初步鉴定了一种可能参与结肠癌肝转移的黏附分子, 为结肠癌的组织器官特异转移机制及靶向治疗的研究奠定了一定的基础。

关键词: [结肠癌](#) [肝窦内皮细胞](#) [黏附](#) [功能性单克隆抗体](#) [抗原](#)

Establishment of functional antibodies for inhibition on adhesion between colon cancer and human liver sinusoidal endothelial cells [Download Fulltext](#)

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Abstract:

**Abstract Objective:** To screen for functional monoclonal antibody which can inhibit the adhesion between colon cancer cells and human liver sinusoidal endothelial cells (LSECs), and to identify the specific antigen of the screened antibody. **Methods:** BALB/c mice were immunized with LSECs, the spleen cells of the immunized mice were fused with SP2/O cells and cultured on methyl cellulose to establish anti LSECs monoclonal antibody library. Functional monoclonal antibodies which inhibited the adherence between colon cancer cells (Ls174 T cells) and LSECs were screened and identified by immunofluorescence, ELISA and adhesive assay. The membrane proteins were extracted from LSECs and the specific antigen recognized by monoclonal antibody was detected by Western blotting assay. **Results:** Totally 1 440 monoclonal antibody clones were obtained by the fusing spleen cells of immunized mice with SP2/O cells, 199 of the monoclonal antibodies recognized LSECs; and 20 clones, including 15 IgM type, 3 IgG type, and 2 with the heavy strand undetectable, significantly suppressed the adherence between colon cancer cells and LSECs. One of these clones with the strongest anti adhesive ability (inhibitory rate 51%) significantly inhibited the adhesion between colon cancer cells and HLSECs at 15-200 μg/ml in a dose dependent manner and reacted with antigens of 46 kD. **Conclusion:** We have successfully established an anti HLSEC monoclonal antibody library and obtained 20 functional monoclonal antibodies which can suppress the adherence of colon cancer cells with LSECs. One adhesive molecule which might mediate colon cancer liver metastasis has been preliminarily identified. These antibodies may help to understand the mechanism of organ specific metastasis of colon cancer cells and shed light on anti metastasis therapy of colon cancer.

Keywords: [colon cancer](#) [liver sinusoidal endothelial cell](#) [adhesion](#) [functional monoclonal antibody](#) [antigen](#)

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