522~528.sTie2通过阻抑血管生成拟态抑制结肠癌HCT116细胞的增殖、迁移和侵袭[J].孔祥琳,程先硕,李富荣,肖尤川,杨之斌,黄尤光,夏翠锋,余昆,李云峰.中国肿瘤生物治疗杂志,2013,20(5)

sTie2通过阻抑血管生成拟态抑制结肠癌HCT116细胞的增殖、迁移和侵袭

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摘要：

目的：探讨可溶性Tie2（soluble Tie 2，sTie2）对结肠癌HCT116细胞血管生成拟态（vascular mimicry，VM）形成、增殖、迁移及侵袭能力的影响。方法：将重组质粒pBLAST49-hsTie2及对照质粒pBLAST49通过脂质体转染至HCT116细胞，分别形成hsTie2-HCT116细胞和Ctrl-HCT116细胞。通过3D模型培养、SRB法、细胞划痕实验及Transwell法分别检测HCT116细胞的VM形成、增殖、迁移及侵袭能力，采用Western blotting法检测HCT116细胞中VE-cadherin蛋白的表达。结果：pBLAST49-hsTie2重组质粒成功转染至结肠癌HCT116细胞。与Ctrl-HCT116细胞相比，hsTie2-HCT116细胞中VM的形成\[（0.75±0.45） vs （7.50±0.52）个/视野, P<0.01\]及VE-cadherin蛋白的表达\[（1.23±0.08） vs （1.73±0.02）, P<0.05\]显著降低；细胞增殖率也显著降低\[（32.57±4.57）% vs （88.24±21.94）%，P<0.01\]；细胞迁移能力\[（0.37±0.07）vs（0.80±0.03）mm， P<0.01\]及侵袭能力\[（57.25±3.17） vs （127.25±6.25）个/视野， P<0.01\] 均显著减弱。结论：sTie2通过阻抑VM形成抑制结肠癌细胞的增殖、迁移和侵袭，有望成为既抗血管生成又抗VM形成的双靶向治疗结肠癌的药物。

关键词：血管生成拟态 sTie2 结肠癌 HCT116细胞 增殖 迁移 侵袭

Soluble Tie2 inhibits proliferation, migration and invasion of colonic cancer HCT116 cells through suppression of vascular mimicry formation

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Abstract:

Objective: To investigate the effect of soluble Tie 2 (sTie2) on the vascular mimicry (VM) formation, proliferation, migration and invasion of colonic cancer HCT116 cells. Methods: The recombinant plasmid pBLAST49-hsTie2 or control plasmid pBLAST49 was transfected into HCT116 cells by liposome to form hsTie2-HCT116 or Ctrl-HCT116 cells. 3D model culture, SRB, scratch and Transwell assay were conducted respectively to detect the VM formation, proliferation, migration and invasion of HCT116 cells. Western blotting was used to detect the expression of VE-cadherin protein. Results: The recombinant plasmid pBLAST49-hsTie2 was transfected into colorectal cancer HCT116 cells successfully. Compared with that in the Ctrl-HCT116 cells, the formation of VM (\[0.75±0.45\] vs \[7.50±0 52\], P<0.01) and the expression of VE-cadherin protein (\[1.23±0.08\] vs \[1.73±0.02\], P<0.01) in hsTie2-HCT116 cells was significantly decreased, and the survival rate was also significantly decreased (\[32.57±4.57\]% vs \[88.24±21 94\]%, P<0.01). The migration (\[0.37±0.07\] vs \[0.80±0.03\] mm, P<0.01) and invasion capacity (\[57 25±3.17\] vs \[127.25±6.25\], P<0.01) of HCT116 cells were inhibited significantly. Conclusion: sTie2 inhibits the proliferation, migration and invasion of colorectal cancer cells through suppression of the VM formation, which provides a good basis for the development of new drugs for the treatment of colorectal cancer by targeting both angiogenesis and VM formation.

Keywords:vascular mimicry (VM) soluble Tie2 (sTie2) colorectal cancer HCT116 cell proliferation migration invasion

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