乳腺癌细胞条件培养基对成骨细胞增殖抑制作用的机制探讨

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Title: **Mechanism of osteoblast proliferation inhibited by breast cancer cell conditioned medium**

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关键词: 乳腺癌细胞条件培养基; 骨转移; 增殖; Notch信号

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摘要: 目的：探讨MDA-MB-231、MCF-7乳腺癌细胞条件培养基对hFOB1.19成骨细胞的增殖抑制作用与Notch信号通路的相关性。方法：MTT法检测MDA-MB-231、MCF-7乳腺癌细胞条件培养基对hFOB1.19细胞的增殖抑制效果；Western Blot与qRT-PCR分别检测hFOB1.19细胞的Notch1、Jagged1、Hes1蛋白与mRNA的表达。结果：MDA-MB-231、MCF-7条件培养基抑制hFOB1.19细胞增殖，DAPT（Notch阻断剂）可明显降低MDA-MB-231、MCF-7条件培养基对hFOB1.19细胞增殖的抑制作用。MDA-MB-231、MCF-7条件培养基上调hFOB1.19细胞Notch1、Jagged1、Hes1的mRNA和蛋白的表达，并随着条件培养基浓度的增加，以上指标的表达呈先上升而后下降的趋势。Notch阻断剂DAPT明显抑制两细胞条件培养基对hFOB1.19细胞的Notch1、Jagged1、Hes1 mRNA和蛋白表达的上调作用。结论：MDA-MB-231、MCF-7条件培养基对hFOB1.19细胞增殖抑制作用的机制与Notch信号通路相关。

Abstract: Objective：To investigate the relationship between the inhibitory effect of MDA-MB-231 and MCF-7 breast cancer cell conditioned medium on the proliferation of hFOB1.19 osteoblast and the Notch signal pathway.Methods：MTT assay was used to detect the inhibition of hFOB1.19 osteoblast proliferation.The protein and mRNA expression of Notch1，Jagged1 and Hes1 in hFOB1.19 osteoblast were detected by Western Blot and qRT-PCR respectively.Results：The MDA-MB-231 and MCF-7 conditioned medium inhibited the proliferation of hFOB1.19 cells.DAPT（Notch blocker) could significantly reduce the effect of the conditioned medium on hFOB1.19 cells.The mRNA and protein expressions of Notch1，Jagged1 and Hes1 in hFOB1.19 cells were up-regulated by MDA-MB-231 and MCF-7 conditioned medium.The dose-effect relationship was that as the concentration of conditioned media increasing，and the expression of the three tested items showed the tendency of first increasing and then decreasing.Notch blocker DAPT significantly inhibited the up-regulation of Notch1，Jagged1，Hes1 mRNA and protein expression in hFOB1.19 cells with MDA-MB-231，MCF-7 conditioned medium.Conclusion：The mechanism of hFOB1.19 cells proliferation inhibited by MDA-MB-231 and MCF-7 cells conditioned medium is related to the Notch signaling pathway.

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