维生素E琥珀酸酯诱导HER-2过表达乳腺癌细胞凋亡机制的研究

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Title: **The apoptosis effect of vitamin E succinate on human HER-2 over-expression breast cancer cells**

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摘要: 目的:探讨维生素E琥珀酸酯(vitamin E succinate,VES)对HER-2过表达乳腺癌细胞的生长抑制和诱导凋亡作用。方法：MTT法测定VES对乳腺癌MDA-MB-231和MDA-MB-453细胞增殖的抑制作用，应用Western blot法筛选HER-2过表达乳腺癌细胞系，同时检测VES处理后GSK-3、NF-κBp65、caspase 9蛋白在乳腺癌MDA-MB-231和MDA-MB-453细胞中的表达水平，划痕实验与侵袭实验观察VES对乳腺癌细胞体外迁移能力的影响，流式细胞术检测VES对乳腺癌细胞凋亡的作用。结果：VES处理后GSK-3、NF-κBp65、caspase 9蛋白在乳腺癌MDA-MB-453细胞中的表达明显高于在乳腺癌MDA-MB-231细胞中的表达，VES作用于HER-2低表达乳腺癌细胞使其迁移及侵袭能力明显增强，却能够抑制HER-2高表达乳腺癌细胞的迁移及侵袭。VES以直接杀伤方式作用MDA-MB-231细胞，而对MDA-MB-453则以诱导细胞凋亡方式杀伤，VES使HER-2高表达乳腺癌MDA-MB-453细胞发生G1/G0期阻滞。结论：VES促进乳腺癌细胞凋亡是通过影响多条信号传导途径完成的，VES作用于不同HER-2表达乳腺癌细胞其迁移及侵袭能力明显不同，其机制与细胞表面蛋白表达有关。

Abstract: Objective:To observe the apoptosis effect of vitamin E succinate (VES) on the growth and proliferation of HER-2 over-expression breast cancer cells in vitro.Methods:MTT assay was used to detect the growth inhibition.Western blot was used to screening HER-2 over-expression of breast cancer cell lines and detect the expression satus of GSK-3,NF-κBp65 and caspase 9 in MDA-MB-231 and MDA-MB-453 cell.To observe the migration ability of VES by Transwell assay and Wound-healing for breast cancer cells in vitro,and flow cytometry to detect the effect of VES on apoptosis of breast cancer cells.Results:After treatment,The expression of GSK-3,NF-κBp65 and caspase 9 protein in the breast cancer MDA-MB-453 cells was significantly higher than that in the breast cancer MDA-MB-231 cells.The effect of VES on MDA-MB-231 breast cancer cells significantly enhanced its migration and invasion ability,while inhibited the migration and invasion of MDA-MB-453 cells.VES was used to kill MDA-MB-231 cells directly,and MDA-MB-453 to induce apoptosis.VES had a G1/G0 block in the high expression of breast cancer MDA-MB-453.Conclusion:VES to promote breast cancer cells apoptosis is completed by influencing the multiple signal transduction pathway.VES on different HER-2 over-expression breast cancer cell migration and invasion ability are obviously different,and its mechanism is related to the cell surface protein expression.

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