

## عنوان مقاله:

Suppressive role of Viola odorata extract on malignant characters of mammospheres derived breast cancer stem cells

## محل انتشار:

سومین کنگره بین المللی و چهارمین همایش ملی زیست فناوری گیاهان دارویی و قارچهای کوهی (مجازی) (سال: 1400)

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## خلاصه مقاله:

Background: Mammospheres are breast cancer stem cells (BCSCs) that could be yielded through culturing cells in non-adherent & non-differentiating condition. With regard to therapy resistance of cancer stem cells (CSCs), it is essential to discover efficient approaches targeting CSCs. Viola odorata extract has been considered as a traditional herbal anti-metastatic drug in several cancer cells. Effect of this drug on BCSCs has not been clearly identified. Current study tries to detect and to compare effect of Viola odorata extract on malignant characterization of breast cancer cell lines and BCSCs. Material and methods: MCFY and SKBR<sup>3</sup> and their derived mammospheres as BCSCs were used and the effect of alcoholic extraction of Viola odorata on apoptosis and malignant characters of MCFY, SKBR<sup>3</sup> and their derived BCSCs were analyzed and compared. Results: Viola odorata extract induced cell death in MCFY, SKBR<sup>3</sup> and their derived mammospheres through apoptosis without any effects on MCF10A. Also, this extract showed anti-migratory, anti-invasion and anti-colony formation activity in MCFY, SKBR<sup>3</sup> and their derived mammospheres which was significantly more in MCFY- and SKBR<sup>3</sup>-derived mammospheres. Also, this extract decreased size and volume of tumors generated by MCFY, SKBR<sup>3</sup> and their derived mammospheres in chicken embryo model. Conclusion: Viola odorata extract exerted anti-cancerous activity on both breast cancer cell lines and their derived BCSCs. Anti-cancerous activity of this extract was significantly more in MCFY-, SKBR<sup>3</sup>-derived mammospheres in comparison with dedicated cell lines. Data suggest that Viola odorata extract mostly targets cancerous cells, not normal cells with exception in high concentration. It acts in a cell dependent manner

