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# Histone deacetylation effects of the proliferation and apoptosis of cells in human breast cancer cells

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Trichostatin A, an antifungal antibiotics, and new compound IN2001 are potent and specific inhibitor of histone deacetylase activity. Histone deacetylase inhibitors are new class of chemotherapeutic drugs able to induce tumor cell apoptosis and/ or cell cycle arrest. In this study, we have compared the antiproliferative activities of trichostatin A and IN2001 between estrogen receptor positive human breast cancer cell MCF-7 and estrogen receptor negative human breast cancer cell MDA-MB-468. IN2001 as well as trichostatin A showed potent antiproliferative activity in both MCF-7 and MDA-MB-468 cells dose-dependently. The growth inhibition of these cells with HDAC inhibitors was associated with profound morphological change, which suggests the HDAC inhibitors induced apoptosis of cells. Both trichostatin A and IN2001 showed cell cycle arrest at $G_2$/M phases of MCF-7 and MDA-MB-468 cells in a dose dependent manner. Also trichostatin A and IN2001 induced apoptosis from both MCF-7 and MDA-MB-468 cells, in a dose dependent manner.

**Keyword** : HDAC inhibitors, human breast cancer cells