Effect of epigenetic drugs on breast cancer cells and prostate cancer cells.

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In 2016, an estimated of 246,660 new cases of invasive breast cancer are expected to be diagnosed in women whereas there will be about 180,890 new cases of prostate cancer to be diagnosed among men in the U.S. Chemotherapy, surgery and the use of traditional drugs were used to treat patients of breast cancer or prostate cancer. However several clinical studies were conducted on many types of diseases such as cancer by the use of epigenetic drugs. Our research goal was to observe the effects of epigenetic drugs such as tamoxifen, 5-azacytidine and MB3 either alone or in combination with one another on MCF-7 (breast cancer) and PC-3 (prostate cancer) cell lines. Methods such as subculturing these cell lines in vitro, counting these cells with hemocytometer, developing various drug concentrations, cell proliferation assays, and performing MTT assays were all used to properly grow and observe the effects of these epigenetic drugs on these cell lines. Based on the MTT assays that were performed, the epigenetic drugs 5-azacytidine had a greater effect on inhibiting cell proliferation on both MCF-7 and PC3 cell lines than the other two drugs used. Regardless, the use of all these epigenetic drugs whether they were used alone or in combination with each other showed at least some effect on inhibiting cell proliferation. By observing the effect of epigenetic drugs on these cancer cell lines revealed that such drugs such as 5-azacytidine and other epigenetic drugs can be used therapeutically.