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Delving KS-01 as a novel therapeutic strategy in treating breast cancer

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Cancer cells have an increased need for cholesterol, which is required for cell membrane integrity. Cholesterol accumulation has been described in various malignancies including breast cancer. Cholesterol has also been known to be the precursor of estrogen and vitamin D, both of which play a key role in the histology of breast cancer. Therefore, exhausting the cholesterol levels in growing cells is a proposed inventive procedure to treat the tumor. Along these lines, novel cholesterol-exhausting mixes are at present being examined. KS-01 is a cyclic amylose oligomer made out of glucose units. It solubilizes the cholesterol and it turned out to be toxicologically generous in people. This led us to hypothesize that it might deplete cholesterol from cancer cells and may prove to be a clinically useful compound. Our work provides preliminary experimental evidence to support this hypothesis. We distinguished the intensity of KS-01 in vitro against two bosom growth cell lines: MCF-7 (Estrogen positive, ER+), MDA-MB-231(Estrogen negative, ER-) and looked at the outcomes against two ordinary cell lines: MRC-5 (Normal Human Lung Fibroblasts) and HEK-293 (Normal human embryonic kidney cells) utilizing cytotoxic, apoptosis and cholesterol based tests. KS-01 treatment reduced intracellular cholesterol resulting in significant breast cancer cell growth inhibition through apoptosis. The outcomes remain constant for both ER+ and ER-. These data suggest that KS-01 can prevent cholesterol accumulation in breast cancer cells and is a promising new anticancer agent.

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