Antiestrogenic Conjugates as New Breast Cancer Chemoprevention Agents

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Tamoxifen is the first drug specifically approved for the prevention of cancer and arguably the most successful anticancer drug of all time. Although millions of breast cancer patients have benefited from tamoxifen therapy, there are side effects that hinder the broad use of tamoxifen as a chemopreventive agent. We have developed analogs of tamoxifen and other estrogenic compounds conjugated to polymer scaffolds and have found that these conjugates can still inhibit breast cancer cell proliferation with mechanisms distinct from any known antiestrogen. Changing the type of polymer changes the cellular localization of the conjugate and its activity. With novel mechanisms of action, we hypothesize that these conjugates may exhibit different physiological responses than tamoxifen and serve as superior breast cancer chemopreventive agents.