

## Spotlight

By Caroline Seydel

### **A Better Weapon Against Breast Cancer**

Suzuki *et al.*

<http://doi.wiley.com/10.1002/ijc.25659>

Tamoxifen, widely used because it effectively fights breast cancer, also contributes to endometrial cancer. Despite decades of investigation, nobody has come up with anything that fights cancer more effectively but with fewer side effects. Now, Suzuki, *et al.*, report that an antiestrogen they created can do just that: the compound suppresses human breast cancer without causing the DNA damage that can lead to endometrial cancer.

Tamoxifen has been in use to treat breast cancer since 1973, but when it's used over long periods, its estrogenic action and DNA-binding properties can cause endometrial cancer. To combat this problem, researchers have probed tamoxifen's mode of action and learned how tamoxifen binds with DNA, causing the mutations that lead to cancer. Other antiestrogens, modified to decrease their mutagenic activity, have been employed against breast cancer, but newer, safer alternatives are still needed. In their previous work, the authors describe a new antiestrogen that they developed, specifically designed to eliminate its ability to interact with DNA and cause harmful mutations.

The researchers pitted SS5020 against tamoxifen and other antiestrogens in a series of tests, and the new compound came through with flying colors. First, they showed that SS5020 did not cause DNA damage, nor did it show significant estrogenic activity, making it a potentially safer alternative to tamoxifen, raloxifene, and other antiestrogens currently under consideration for clinical trials, which can promote uterine cell proliferation through estrogenic action. When put to the test against cancer cells, the new compound beat back rat mammary tumors as well as human breast tumor xenografts in rats. SS5020 worked even better than tamoxifen and raloxifene at lower doses, making it an exciting prospect for future clinical studies.

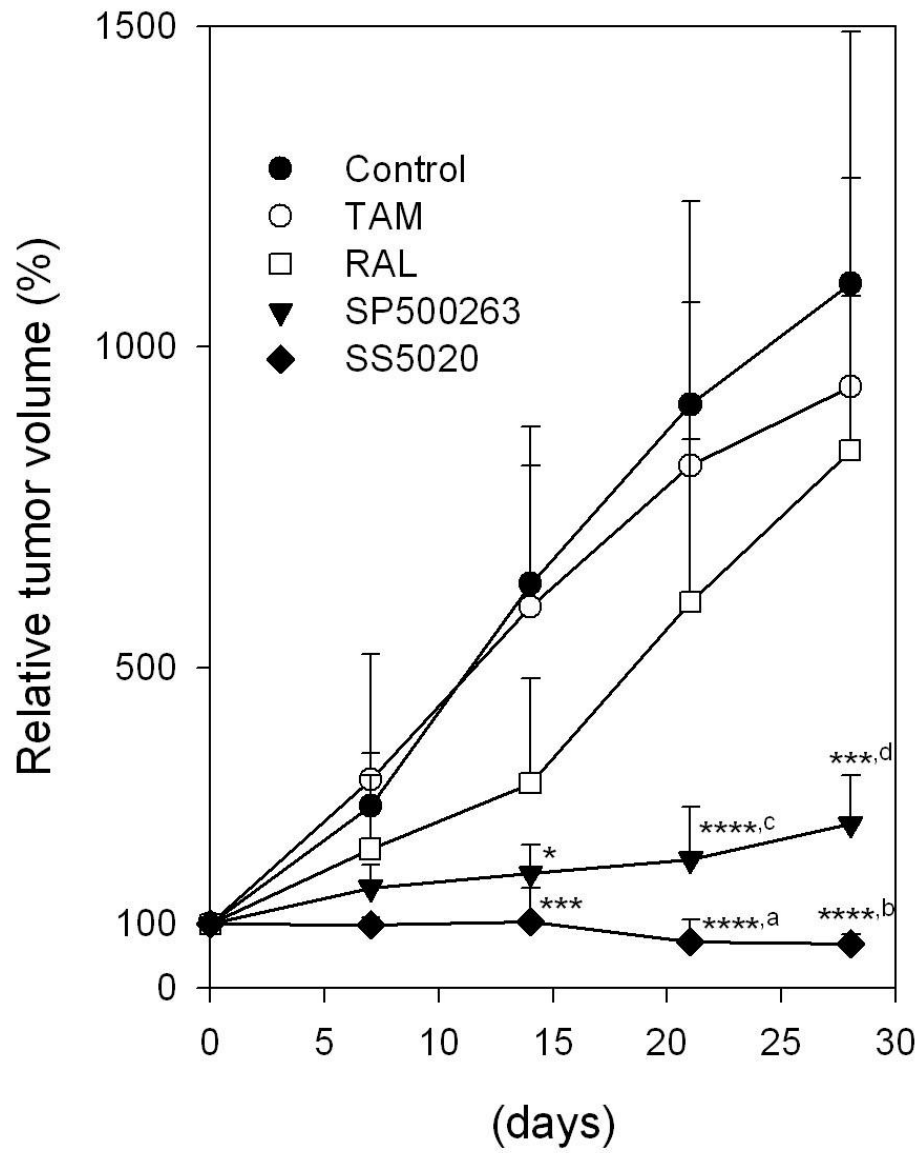


Figure 4a. The new compound reduced tumors more effectively than tamoxifen or raloxifene