

Osteoporosis drug can kill resistant cancer

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Singapore: A research by Duke Cancer Institute has shown that osteoporosis drug bazedoxifene stops the growth of breast cancer cells, even in cancers that have become resistant to current targeted therapies. The findings were presented on June 15, 2013, at the annual Endocrine Society meeting in San Francisco, US.

The findings show that bazedoxifene not only prevents estrogen from fueling breast cancer cell growth, but also flags the estrogen receptor for destruction. In animal and cell culture studies, the drug inhibited growth both in estrogen-dependent breast cancer cells and in cells that had developed resistance to the anti-estrogen tamoxifen and/or to the aromatase inhibitors, two of the most widely used types of drugs to prevent and treat estrogen-dependent breast cancer. Currently, if breast cancer cells develop resistance to these therapies, patients are usually treated with toxic chemotherapy agents that have significant side effects.

Bazedoxifene is a pill that belongs to a class of drugs known as specific estrogen receptor modulators (SERMs). These drugs are distinguished by their ability to behave like estrogen in some tissues, while significantly blocking estrogen action in other tissues. But unlike tamoxifen, bazedoxifene has some of the properties of a newer group of drugs, known as selective estrogen receptor degraders, or SERDs, which can target the estrogen receptor for destruction.

The study was funded by a research grant from Pfizer Pharmaceuticals, which is a maker of bazedoxifene. In addition to Dr McDonnell, Dr Suzanne Wardell, Dr Erik Nelson and Dr Christina Chao of the Department of Pharmacology and Cancer Biology, Duke University School of Medicine, contributed to the research.

Dr Donald McDonnell, chair of Duke's Department of Pharmacology and Cancer Biology, US, said that, "We found bazedoxifene binds to the estrogen receptor and interferes with its activity, but the surprising thing we then found was that it also degrades the receptor; it gets rid of it."