

## ABSTRACT

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biotransformed soya

Breast cancer belongs to the most frequently diagnosed cancers in women. Approximately 60% of breast cancer is hormone-dependent containing estrogen receptors and requiring estrogen for tumour growth. Estrogens are able to promote transcription of genes involved in cell proliferation. Aromatase is responsible for the final step of estrogen biosynthesis and its inhibition has been considered as an important target for the treatment of estrogen-dependent breast cancer. Soya is a source of phytoestrogens, such as genistein and daidzein, which are thought to be effective in breast cancer prevention. However, the mechanisms associated with this effect are not fully understood. In this study we evaluated the effects of a soya extract containing genistein and daidzein on aromatase activity. Our results demonstrated that this extract had the ability to inhibit aromatase in a dose-dependent manner in placental microsomes and also in the MCF-7aro breast cancer cell line. It was also shown that, in the placental microsomes, the biotransformation by fungi *Aspergillus awamori* did not alter the capacity to induce aromatase inhibition. In this cell line it was also observed a dose dependent reduction in cell proliferation and morphological alterations after 48 hours of treatment. This biotransformed extract seems to be quite potent and a promising agent to induce aromatase inhibition, but further studies are required to better understand the mechanism of aromatase inhibition by soya contents and elucidate what kind of compounds are exactly responsible for the inhibitory effect.