

## **Abstract**

Cytochrome P450 enzymes play a key role in the metabolism of endogenous and exogenous compounds. These enzymes are involved both in biotransformation and steroid hormone biosynthesis. An important member of this family is cytochrome P450 19, aromatase, which catalyzes the final step of estrogen hormone biosynthesis, conversion of androgens into estrogens. The physiologic functions of estrogens include development of secondary sexual characteristics, maintenance of bone mass or regulation of gonadotropin secretion. However, hormonal imbalance due to endocrine disruptors can result in development of certain cancers or impaired reproduction. Compounds with these effects include, in addition to environmental pollutants, some drugs and cosmetic additives which people are exposed to on a daily basis.

In the present study, the effect of selected perfumes and antiperspirants on the metabolic conversion of testosterone into estradiol, catalyzed by aromatase, was examined. The activity of this enzyme was detected using TLC chromatography.

The experiments showed that selected antiperspirants do not affect aromatase activity. For most of the perfumes tested, only a very low aromatase inhibition was observed. Only one sample showed this effect to a higher extent. Based on the comparison of perfume compositions, potential aromatase inhibitors could be, e.g. farnesol, coumarin or cinnamal.

**Key words:** cytochrome P450, aromatase, inhibition, steroidogenesis

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