Abstract

Substances which cause an endocrine dysfunction have a negative impact on the human body and can be found all around us. One of the main mechanisms of their action is the binding to cell receptors or the inhibition of key enzymes involved in steroid hormone synthesis. In this study, the inhibitory effect of selected perfumes and car air fresheners on the activity of aromatase, the key enzyme of steroidogenesis, was examined. Aromatase converts male sex hormones into the female ones. Inhibition of this enzyme results in decreased estrogen concentrations and may thus affect human fertility. The aromatase activity was examined based on the aromatization reaction of testosterone into estradiol. The formation of estradiol was monitored by TLC method. Based on the results of the pilot study the tested perfumes do not significantly inhibit the aromatase activity, while air fresheners in cars appear to be potential aromatase inhibitors.

Keywords:

Endocrine dysfunction, steroidogenesis, aromatase, perfumes, air fresheners, TLC, chromatography