Abstract

Flavonoids belong to the group of phenolic compounds included in the secondary metabolites of plants, which are represented mainly in fruits and vegetables. These compounds have antioxidant and anti-carcinogenic effects. Some of them can affect biotransformation enzymes, which include the cytochrome P450 and can interfere with the metabolism of xenobiotics.

In the present work we studied effect of dihydromyricetine on the gene expression of cytochrome P450 1A1, 1A2 and cytochrome b_5 in livers, lungs, kidneys, colon and small intestine of laboratory rats. The small intestine was divided into three parts namely a proximal, middle and distal. At first, isolation of total RNA was made using commercial reagents and isolated RNA was converted to cDNA by reverse transcription. Finally, using polymerase chain reaction in real time (RT-PCR), the relatively gene expression of genes observed in the organs of laboratory rats pretreated dihydromyricetine and control laboratory rats (untreated) to a reference gene β-actin was determined. It was found that dihydromyricetine did not significantly affect the gene expression of studied genes in most organs. However, a significant decrease of gene expression of CYP1A1 and CYP1A2 was observed in the lungs. On the contrary, an increase of gene expression of CYP1A2 was found in the kidneys and of cytochrome b_5 in livers.

Keywords: flavonoids, expression, RT-PCR, cytochrome P450