MORUS ALBA LEAVES EXTRACTS AS A COMPONENT OF FUNCTIONAL FOOD

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Morus alba leaves are rich in phytochemicals, which may have played a significant role in diet based therapies to cure various human maladies. Both the flavonoids (more specifically, phenolic acids and flavonols) and iminosugars represent the most interesting groups of compounds, which can be used in functional foods production, because consumer’s trends are to use in diet foods indicating potential benefits for health.

The aim of the study is to compare the amount of selected phytochemicals of three Morus alba leaves extracts: acetone-water, ethanol-water and water and specify the destination for functional foods.

The phenolics content such as phenolic acids, flavonols, proanthocyanidins, and other phytochemicals as: 1,5-dideoksy-1,5-imino-D-sorbitol (DNJ), β-carotene, L-ascorbic acid and α-β-chlorophylls by spectrophotometric and HPLC methods are determined. The antioxidant properties of these extracts by DPPH and ABTS method as well as, Fe+2 chelating are estimated.

These extracts possess high antioxidant activities measured by ABTS and DPPH assay or chelating activity. The ethanol-water extract is characterized by the highest amount of total phenolic acids, such as chlorogenic, caffeic and ferulic acid, flavonols such as rutin, quercetin and total phenolics and flavonoids content. Acetone-water extract contains the highest amount of proanthocyanidins, β-carotene, L-ascorbic acid and α- and β-chlorophylls. However water extract is reaches in 1,5-dideosksy-1,5-imino-D-sorbitol. Therefore water extract can be consider to be suitable for use as functional food for non-insulin-dependent diabetes mellitus. But ethanol-water extract will be adequate in food preventing cardiovascular diseases.

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