The Effect of some Flavonoids on in-vitro Non-enzymatic Glycosylation of Proteins

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Introduction: Non-enzymatic glycosylation of proteins which is the major cause of diabetic complications, cardiovascular diseases retinopathy, nephropathy and neuropathy can effectively be inhibited by antioxidants.

Materials and Method: The antioxidant effects of several flavonoids, such as rutin, kaempferol, quercetin, apigenin, naringin, morin and biochanin A were studied on glycosylation of insulin, hemoglobin and albumin In-vitro.

Optimal glucose concentration as well as incubation time were determined and inhibition percentage of the proteins were measured at three different concentrations (0.5, 5 and 10 ?g/ml) using spectrophotometric method.

Results: This study showed that biochanin A has potent antioxidant effects as it inhibits glycosylation of hemoglobin insulin and albumin by 100%, 60% and 100% respectively. Apigenin is also inhibits albumin glycosylation by 100%.

Conclusion: As potent antioxidant effects are induced by flavonoids, preventive effects of some plants containing the flavonoids on diabetic complication is expected.

Keywords
: Flavonoids, protein glycosylation, antioxidants, albumin, insulin, hemoglobin, Biochanin A.

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