The hypolipidemic effects of *Tamarindus indica* fruit pulp extract in normal and diet-induced hypercholesterolemic hamsters are associated with altered levels of serum proteins

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**Electrophoresis**

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Abstract

The hypolipidemic effects of *Tamarindus indica* fruit pulp extract (Ti-FPE) have been earlier reported but the underlying molecular mechanisms are still uncertain. In this study, hamsters fed with Ti-FPE, both in the absence and presence of high-cholesterol diet, were shown to have significantly reduced levels of serum triglyceride, LDL-C and total cholesterol. The Ti-FPE-fed non-hypercholesterolemic hamsters also showed significant enhanced levels of serum apolipoprotein A1, antithrombin III, transferrin and vitamin D binding protein. In diet-induced hypercholesterolemic hamsters, apolipoprotein A1, antithrombin III and transferrin, which were relatively low in levels, became significantly enhanced when the hamsters were fed with Ti-FPE. These Ti-FPE-fed hypercholesterolemic hamsters also showed significant higher levels of serum vitamin D binding protein. When the different treated groups of hamsters were analyzed for the levels of the four serum proteins by ELISA, similar altered abundance were detected. Ingenuity Pathway Analysis of the Ti-FPE modulated serum proteins singled out “Lipid metabolism, molecular transport, small molecule biochemistry” as the top network. Our results suggest that the hypolipidemic effects of Ti-FPE are associated with alterations of serum proteins that are known to be cardioprotective and involved in the metabolism of lipids. The MS data have been deposited to the ProteomeXchange Consortium with the dataset identifier PXD010232.