



Immunoenhancing property of dietary un-denatured whey protein derived from three camel breeds in mice

Hossam Ebaid, Gamal Badr & Ali Metwalli

Abstract:

Data have demonstrated that whey protein (WP) enhances the immune system. The aim of this study was to investigate and compare the effects of WP from three camel breeds on oxidative stress, blood lipid profile and the cytokine levels. Seventy five male mice were randomly split into five groups. The first served as a control group. The second, the third and the fourth groups were orally administrated the WP from Majaheim, Maghateer and Soffer camel breeds, respectively, at a dose of 100 mg/kg mouse body weight. The fifth group was supplemented with bovine serum albumin(BSA). Results showed similar electrophoretic patterns of the three whey proteins. WP was found to significantly inhibit the hydroperoxide and the Reactive Oxygen Species (ROS) in leukocytes, liver and skin as well as the blood cholesterol level in a time dependent manner. A significant enhancement of glutathione was revealed in WP groups. Furthermore, WP was found to significantly elevate the IL-2 with a significant time dependent enhance of IL-8. On contrast, a significant lowering effect of whey proteins on the pro-inflammatory cytokines, IL-1 α , IL-1 β , IL-6 and IL-10 was detected. Moreover, a mitogenic activity of WP was observed on the lymphocytes. Non-significant changes were observed in AST, ALT, creatinine and glucose level. These findings suggest that WP significantly improved the levels of the oxidative markers and the immune functions without any difference in the bioactivities of the three studied whey proteins.

Keywords:

whey proteins; oxidative stress; glutathione; cytokines; lymphocytes

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