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Ameliorating Effects of Water-Soluble Extract of Goat Milk Yoghurt on Thyroid and Total Thyroxine in Experimental Autoimmune Hypothyroidism Rats

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Abstract: Bioactive peptides derived from Water-soluble Extract (WSE) of goat milk yoghurt had been known having immunomodulatory and antioxidative effect. The therapeutic potential of WSE of goat milk yoghurt for autoimmune thyroiditis (AITD) has not been established. The aim of this study was to investigate the effect of WSE of goat milk yoghurt thyroid histopathology and total thyroxine in AITD rats. Twenty female Wistar rats (*Rattus norvegicus*), were divided into five groups: the control, group of AITD which injected with thyroid protein, and group of AITD treated with varying dose: 300 mg/kg/day, 600 mg/kg/day, and 900 mg/kg/day of WSE of goat milk yoghurt. The thyroid protein in adjuvant were injected subcutaneously on day-0, -14, -28. The supplementation of WSE of goat milk yogurt added to the diet for 28 days on the 35th day after the induction. The results showed that supplementation was induced the improvement of thyroid gland structure and function, as evident by thyroid tissue amelioration and elevated levels of serum total thyroxine. Thyroxine were measured by ELISA. 600 mg/kg/day WSE was the effective dose increasing level of thyroxine in AITD rats. In conclusion, WSE of goat milk yoghurt can improve the thyroid gland activity in thyroxine production.

Key words: AITD, animal models, goat milk, thyroiditis, thyroxine, water-soluble extract, yoghurt.

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