



## Research Article

# Antioxidant and Nutritional Properties of Domestic and Commercial Coconut Milk Preparations

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The aqueous extract of scraped coconut kernel is known as coconut milk. Coconut milk preparations are also commercially available in the form of desiccated powders or liquids. While these various coconut milk preparations are heavily used in cooking in the Asian countries as a major source of dietary fat, limited studies have been conducted on their chemical and nutritional composition. In this study, we have determined the chemical composition and nutritional effects of both domestic preparations of coconut milk and the commercially available counterparts. The results indicate that the phenolic compounds of all coconut milk preparations provide protection against oxidative damage on lipids and inhibit oxidative damage of both proteins and DNA. The lipid profiles are not significantly affected by the consumption of the three coconut milk preparations despite their different fat contents.

## 1. Introduction

Coconut milk is the aqueous extract of the solid endosperm (kernel) of coconut. In addition to the use for coconut oil extraction by wet process, coconut milk is directly used as a liquid medium in culinary applications to prepare dishes including meat and vegetable dishes. Domestic coconut milk is prepared by adding water to the scraped coconut kernel and mixing in a blender followed by filtering coconut milk through a strainer. Coconut milk is also available in the market in powder form and in liquid form. Some nutritional constituents and antioxidant properties of coconut milk have been reported. Coconut milk is an emulsion containing mainly lipid carbohydrates and proteins. It also contains several minor compounds including phenolic substances [1]. Antioxidant properties evaluated by ferric reducing power (FRAP) assay and 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay indicate that coconut milk displays higher antioxidant properties than cow's milk [2]. Antioxidant properties of the methanolic extracts of the coconut kernel

have also been tested with DPPH and 2,2-azino-bis(3-ethyl-benzothiazoline-6-sulfonic acid) diammonium (ABTS) assays, as a function of maturity, and the antioxidant activities increased up to 190 days from the date of pollination and then decreased or remain unchanged [3]. Studies also indicate that the serum LDL levels decreased while the HDL levels increased in healthy subjects on a diet containing coconut milk [4].

Although few studies have reported the chemical and nutritional information of coconut milk, the chemical and nutritional properties of different coconut milk preparations have not been compared, and detailed studies on the protective effect of coconut milk antioxidants on oxidative stress-induced macromolecular damage have not been reported to the best of our knowledge. Harmful features of oxidative stress arise when oxidative forces exceed the antioxidant defense systems in biological systems. Oxidative stress is well known to be closely related to cancer, atherosclerosis, hypertension and diabetes mellitus. Phenolic antioxidants are well known to confer protection against oxidative damage in