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Identification and characterization of (+)-catechin in coconut oil

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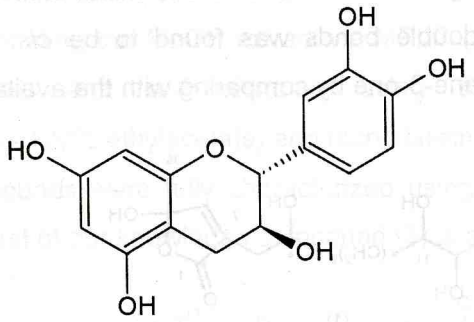
Reduced rates of heart disease and prevention of the growth of cancer cells have been shown to correlate with the consumption of flavanoid antioxidants. (+)-catechin is one of the important flavanoid antioxidant distributed in plant derived foods including red wine, green tea and fruits. Herein we report the identification and quantification of (+)-catechin in coconut oil.

Phenolic fraction of coconut oil was extracted by liquid-liquid extraction using Methanol/ water 80:20. (+)-Catechin in the phenolic extract was identified using reverse phase high-performance liquid chromatography by comparison of the retention time of an authentic (+)-catechin standard. A reverse phase Sorbax SB-C_{18} HPLC column and a fluorescence detector were used for the detection of (+)-catechin. The presence of (+)-catechin was also confirmed by HPLC-MS, which showed a m/z 289 ($(M-1)^-$) signal resulting from electrospray ionization and by comparison of UV spectra. The (+)-catechin content in coconut oil was determined using a standard curve prepared by considering HPLC signal areas for standard (+)-catechin solutions. Coconut oil prepared by boiling the water extract of scraped coconut kernel (homemade coconut oil) contained 2.4 ± 0.5 mg/kg oil of (+)-catechin while coconut oil prepared by pressing copra (commercial coconut oil) contained 0.44 ± 0.08 mg/kg oil of (+)-catechin.



(+)-Catechin

Experiments are underway to identify and quantify other phenolic antioxidants in coconut oil and incorporate more phenolic antioxidants to coconut oil prepared by pressing copra, in order to improve the quality of commercial coconut oil.

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