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Comparison of the *in vivo* antioxidant activity of traditional coconut oil, virgin coconut oil and soya oil

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When the nutritional quality of cooking oils is considered, it is extremely important to evaluate the contribution of cooking oils to the antioxidant activity in blood. In the present study, the *in vivo* antioxidant potentials of three cooking oils are compared. Male Wistar rats were fed with a special diet containing traditional coconut oil (TCO, prepared by boiling coconut milk), virgin coconut oil (VCO) and soya oil (SO). The effect of the consumption of these oils on the total antioxidant activity in blood serum was analyzed and compared. The decolorization of $ABTS^{\bullet+}$ (radical cation of 2,2'-azinobis-(3-ethylbenzothiazoline- 6-sulfonic acid) was used as a measure of antioxidant activity and the antioxidant activity was expressed as trolox equivalent antioxidant capacity (TEAC). The results are summarized in Table 1.

Table 1. Variation of TEAC in blood serum

Sample name	Baseline	28 days	56 days	84 days
	Trolox equivalent (µmole/ L)			
SO	34.9 ± 0.2^{a}	33.0 ± 0.3^{b}	35.5 ± 0.5^{ac}	36.1 ± 1.0^{c}
TCO	41.9 ± 0.7^{a}	41.1 ± 0.2^{ab}	47.1 ± 0.8^{c}	47.4 ± 0.3^{c}
VCO	39.2 ± 4.4^{a}	34.8 ± 0.2^{b}	36.1 ± 0.9^{ab}	37.5 ± 1.2^{a}

Values are means (n = 4) ± SD (n = 4), within the same raw different letters are significantly different at $P<0.05$ (ANOVA).

The results indicate that there is a noticeable improvement of the antioxidant capacity especially during the 28 – 84 day period and TCO shows the highest increment indicating that a better improvement of the antioxidant capacity in blood is resulted by the consumption of TCO compared with the consumption of VCO or SO. Higher antioxidant activity of TCO may be attributed to the higher polyphenol contents of TCO compared with those of VCO and SO.

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