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## Research article

# Toxicity and Anti-Oxidation Capacity of The Extracts from *Caulerpa lentillifera*

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**Abstract** *Caulerpa lentillifera* (sea grape) has been widely used in pharmaceutical industry and health-care products in Thailand. In this study, we attempted to evaluate the toxicity and antioxidant capacity of sea grape extracts in five fractions (ethanol- CLET, hexane- CLHE, ethyl acetate- CLEA, butanol-CLBU, and aqueous-CLAQ). The extracts were evaluated for cytotoxicity by MTT and LDH assays on four cell lines, fibroblast (L929), macrophages (RAW 264.7), hepatocytes (FL83B), and keratinocytes (HaCaT). Genotoxicity was tested by comet assay and micronucleus assay on human lymphoblast cells (TK6). The antioxidant capacity was measured by DPPH and ABTS scavenging assays. Our results demonstrated low cytotoxicity and genotoxicity of CLET, CLBU and CLAQ. When tested by DPPH and ABTS assays, CLET, CLEA, and CLHE showed high antioxidant activity. In conclusion, CLET, CLBU, and CLAQ demonstrated no toxic effects, and CLET, CLEA, and CLHE exhibited high antioxidant capacity. Therefore, our results indicated that CLET, CLEA, and CLHE could be consumed safely at doses lower than 500 and 200 µg/ml for CLHE and CLEA, respectively.

**Keywords:** Anti-oxidation, *Caulerpa lentillifera*, Cytotoxicity, Genotoxicity

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