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### Anti-Oxidative Effects of *Ulva lactuca* Extract Fractions against CCl<sub>4</sub> Toxicification

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This study was to investigate the preventive effects in anti-oxidation of *Ulva lactuca* extract fractions(ULEF) against CCl<sub>4</sub> toxicification in liver total homogenate and mitochondrial fraction of ULEF-pretreated and carbon tetrachloride(CCl<sub>4</sub>)-posttreated rats. ULEF was intraperitoneally administered into rats at dose of 1 ml/kg for 14 days. On the day 15, 3.3 ml/kg of CCl<sub>4</sub> dissolved in olive oil(1:1) was injected 12 hr before anesthetization. Activities of superoxide dismutase(SOD) in mitochondrial fraction were measured and catalase(CAT), glutathione peroxidase(GPx), malondialdehyde(MDA) in liver total homogenate. SOD, CAT and GPx were higher in the ULEF-pretreated and CCl<sub>4</sub>-posttreated group than those in the CCl<sub>4</sub>-posttreated group, and the pretreatment of ULEF decreased MDA. These results showed that the pretreatment of ULEF had the preventive role in the activities of anti-oxidative enzymes, SOD, CAT and GPx

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### The Enzymatic Regulatory Effects of *Ulva lactuca* Fractions in LPS-induced Liver Inflammatory Reaction

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In this study was to investigated the effects of *Ulva lactuca* Fraction(ULF) through the enzymatic regulation against the liver inflammatory reaction-inducing lipopolysaccharide(LPS) and scavenging effect on the reactive oxygen species(ROS). ULF of 100 mg/kg concentration was intraperitoneally administered into rats for 14 days. On the day 15, 5mg/kg of LPS was injected 4 hours before anesthetization. We examined by measuring the changed values of superoxide dismutase(SOD) in mitochondrial fraction and catalase(CAT), glutathione peroxidase(GPx) in liver homogenate. The results showed that LPS treatment decreased the high values of SOD, CAT, GPx to the low values, but ULF pretreatment increased the low values of SOD, CAT, GPx to the high values. The potency total ROS scavenging activity was shown in the *Ulva lactuca* fractions. These results showed the ULF had the enzymatic regulatory effects against the liver inflammatory reaction-inducing LPS and scavenging effect on the ROS.

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