

Impacts of Tributyl-tin (TBT) on *Tetraselmis suecica*: Evaluation of Growth, Viability and Stress Gene Expression

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Marine pollutants induced changes in micro algal metabolism; and algal cells make self protecting mechanisms against pollutants by specific gene expression. In this study, we tested the effects of tributyl-tin (TBT) on a marine micro alga, *Tetraselmis suecica*. TBT induced changes in growth rate, viability and biochemicals were studied along with stress gene expression. In acute exposure to TBT, EC₃₀ (24h) was 1.12 $\mu\text{g ml}^{-1}$ and EC₅₀ (24h) was 2.02 $\mu\text{g ml}^{-1}$, and after 48h at more than 2 $\mu\text{g ml}^{-1}$, all the cells were died. In chronic exposure to TBT, at higher concentrations (0.5-1 $\mu\text{g ml}^{-1}$) growth rate, chlorophyll pigments, carbohydrate and protein contents were reduced. In experiments conducted to isolate the TBT stress gene in *T. suecica*, we used DDRT-PCR in which both removal and expressed gene can be noticed with OPB 17 primer (5'AGGGAACGAG3') in 60 types of arbitrary primers. The removal gene size was 644 bp. This gene homology was Light-harvesting chlorophyll-a/b binding protein LhcII-3 with a similarity of 90%. The expressed gene size was 1,376 bp. This gene was crystal structure with coiled-coil domain and homology was 75%. The results of this study, indicates that TBT toxicity made molecular level changes in *T. suecica*.