

عنوان مقاله:

Change in ascorbate and tocopherol contents under hydrogen peroxide oxidative stress in microalga *Dunaliella*

محل انتشار:

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خلاصه مقاله:

Ascorbate and tocopherol, are two important nonenzymatic antioxidants. They are able to protect cells against oxidative stress. *Dunaliella* microalga can live in the harsh environmental condition, thus its counteraction is the important issues for consideration. Two *Dunaliella* species, (D.S and D.G) have been exposed to oxidative stress, for 24 h, by different concentrations of hydrogen peroxide (0.1 to 0.3 mM). Reduced ascorbate showed an early increment in D.S and then was decreased following the arising of hydrogen peroxide concentration, but it has remained with no change in D.G. Similar to reduced ascorbate, DHA was also increased after treatment by 0.1 mM and then decreased by the subsequent levels, but this decrease was higher in D.G. than that in D.S. Oxidative stress also caused a decrease in tocopherol level in D.S, which was higher at 0.3 mM compared to in D.G. Chlorophyll content that was more decreased in D.S. at the highest concentration of oxidant than that in D.G. The ratio of beta-carotene /total chlorophyll was almost unchanged at both species, but its numerical quantity was lower in D.S. Totally, D.S. species seems to be more sensitive to oxidative stress than D.G, because of higher descending changes in reduced ascorbate and tocopherol, and inversely having a higher content of DHA and a lower beta-carotene/chlorophyll ratio. Therefore, this might be the reason for cell death and causing to bleach the cell suspension at the highest hydrogen peroxide level

کلمات کلیدی:

Ascorbate, Cell suspension bleaching, *Dunaliella* alga, Tocopherol

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