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## **Does efficiency of glycogen metabolism relate with salinity resistance on gills and hepatic tissues of Tilapia (*Oreochromis mossambicus*)**

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Salinity change is one of stressor on freshwater fish and fish will regulate osmolality balance to acclimate seawater environment. The ionic/osmotic regulation mechanisms include the morphological modification of gill MR cells and stimulation of both the expression and activity of ion transporters. All need energy to active. The Previous study had found that the GR cells were initially stimulated to provide promote energy for neighboring MR cells that trigger ion-secretion mechanism. Therefore, the objective of this study is to explore the energy metabolism of Tilapia (*Oreochromis mossambicus*) upon acute salinity exposure in gills and liver. There are four groups of treatments in the present study which are included: Fish were adapted in the brackish water (20% for 1 or 2 days and then transferred to 28% seawater (respectively to BW1d-SW; BW2d-SW representation); Fish were transferred directly to 20% brackish water group (FW-BW); Fish were transferred directly to the group of 28% seawater (FW-SW). The study was to compare the biochemical reactions of the glycogen metabolism between the gills and hepatic tissues. Results showed that the glycogen phosphorylase (GP) activity was significantly increased at 1 hour after acute salinity exposure. It was interesting to find that the BW1d-SW and BW2d-SW groups although their osmolality increased following the salinity change but they eventually recovered to the normal level soon. Furthermore, the plasma ions content of FW-SW groups elevated over following the time of SW exposure. Comparatively, it showed a peak within 1 hour and recovery as control on the BW1d-SW and BW2d-SW groups. According to the data, we suggested that the GP activity changes have potential as an effective indicator upon salinity stress.

### **Biography**

Su Mei Wu earned her Master Degree from Marine Biology Institute of National Taiwan University and PhD from National Taiwan Normal University both are in Taiwan. She is a Fellow of the Institute of Aquatic Biosciences of Chiayi University. She has published more than 85 papers in reputed journals and has been serving as reviewer of several repute journals. Her major include aquatic toxicology and fish physiology. Teaching programs have "Stress and Fish", "Fish Endocrinology", "Environment Sciences" etc.

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