Seyma Akarsu et al., J Comput Sci Syst Biol 2014, 7:5
http://dx.doi.org/10.4172/0974-7230.S1.009

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Summit on
Integrative Biology
August 04-05, 2014 Hilton-Chicago/Northbrook, Chicago, USA

Investigation of mRNA expression of photosystem II D1 protein (psbA) and usnic acid production in manganese tolerance in lichen Xanthoria parietina

Seyma Akarsu, Hulya Silah and **Dilek Ozakca**
Bilecik Seyh Edebali University, Turkey

In this study, the effects of short-term manganese tolerance on the lichen Xanthoria parietina were investigated at the physiological and transcriptional levels. Usnic acid production was increased with manganese application depending on concentration and application period. The expression of the photosystem II D1 protein (*psbA*) gene and non-reducing polyketide synthases (*PKS*) gene was quantified using semi-quantitative RT-PCR. Increased non-reducing *PKS* and *psbA* mRNA transcript levels were observed in the X. parietina thalli that were treated with different concentrations of manganese. The results showed that there was positive correlation between usnic acid production and non-reducing *PKS* transcript levels. In the present study, the data also demonstrated that non-reducing PKS and *psbA* mRNA transcript levels could be play important roles in manganese tolerance.

seyma-akarsu-23@hotmail.com