

# 17<sup>th</sup> EURO BIOTECHNOLOGY CONGRESS

September 25-27, 2017 Berlin, Germany

## Overexpression of snapdragon *Delila (Del)* gene in tobacco enhances anthocyanin accumulation and abiotic stress tolerance

Aung Htay Naing and Chang Kil Kim

Kyungpook National University, South Korea

**R**oseal (*Ros1*) and *Del (Delila)* co-expression controls anthocyanin accumulation in snapdragon flowers, while their overexpression in tomato strongly induces anthocyanin accumulation. However, little data exist on how *Del* expression alone influences anthocyanin accumulation. In tobacco (*Nicotiana tabacum* 'Xanthi'), *Del* expression enhanced leaf and flower anthocyanin production through regulating *NtCHS*, *NtCHI*, *NtF3H*, *NtDFR*, and *NtANS* transcript levels. Transgenic lines displayed different anthocyanin colors (e.g., pale red: T<sub>0</sub>-P, red: T<sub>0</sub>-R, and strong red: T<sub>0</sub>-S), resulting from varying levels of biosynthetic gene transcripts. Under salt stress, the T2 generation had higher total polyphenol content, radical (DPPH, ABTS) scavenging activities, antioxidant-related gene expression, as well as overall greater salt and drought tolerance than wild type. We propose that *Del* overexpression elevates transcript levels of anthocyanin biosynthetic and antioxidant-related genes, leading to enhanced anthocyanin production and antioxidant activity. The resultant increase of anthocyanin and antioxidant activity improves abiotic stress tolerance.

### Biography

Aung Htay Naing has completed his PhD from Kyungpook National University, South Korea. He has published more than 30 papers in SCI/E in journals and has been serving as an Editorial Board Member of some plant science journals.

aunghtaynaing2005@gmail.com

### Notes: