April 5th, 2016

Dear Editors:

We are pleased to submit this manuscript for your consideration, “Co-expression of onion *chalcone isomerase* in *Del/Ros1*-expressing tomato enhances anthocyanin and flavonol production”. This study represents a significant progress made towards the understanding of anthocyanin and flavonol production by co-expression of onion *chalcone isomerase* in *Del/Ros1*-expressing tomato.

We believe our findings are of interest to a wide range of readers of Functional Plant Biology and researchers in biology, genetics, agriculture, health and nutrition. Highlights of the significance and broad impact of our work are as follows:

* This study focus on anthocyanins and flavonoid production in tomato, which are responsible for the purple color of various fruits and vegetables and have been associated with potentially health-beneficial effects in various diseases, such as cardiovascular disease, diabetes, and cancer;
* *Del/Ros1 (DR)-*expressing tomatoes have been generated, however, they cannot sufficiently upregulate all necessary key endogenous genes, for full utilization of the anthocyanin production pathway. To increase anthocyanin levels, we have cloned *CHI* from onion *Allium cepa* and transformed it into DR-expressing tomatoes.
* Stacking *CHI* with *DR* in transgenic tomato plants led to 100-fold and 120-fold increases in tomato peel and flesh, compared to *DR* overexpressing lines. Furthermore, *CHI/DR*-expressing tomatoes increased up to 200-fold more total flavonol content compared with the wild-type tomatoes.
* In summary, *CHI/DR-*co-expressing tomatoes could help supplement a healthy diet to lower the risk of cancer, cardiovascular disease, diabetes, and promote healthy brain function.

Thank you very much for your time and consideration!

Sincerely,

Wansang Lim