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Transcriptome analysis of colchicine producing plant species: *Gloriosa superba* and *Colchicum autumnale***Annette Frenk Oquendo and Ganapathy Sivakumar**

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Colchicine is a FDA-approved plant-based alkaloid that is commonly used to treat gout. It has also been proven to be beneficial in cardiovascular diseases and its antimitotic properties make it a promising cancer treatment. Traditionally, the natural isomer of colchicine is extracted from *Gloriosa superba*, which was initially isolated from *Colchicum autumnale*. The biosynthetic pathway of colchicine is not yet characterized, and the pathway genes and mechanisms must be elucidated to improve colchicine production. *G. superba* and *C. autumnale* transcriptomes were analyzed and compared against NCBI and Swissprot protein databases to identify the biosynthetic pathway genes. The annotation data of these transcriptomes revealed that there were 60927 assembled multi-tissue transcripts of *C. autumnale*, which represented 21945 unigenes. Additionally, *G. superba* has 32312 assembled multi-tissue transcripts which represented 15088 unigenes in known plant-specific Gene Ontology (GO). Gene annotation and pathway mapping data will be presented.

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