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The *Panax ginseng* Flowering Locus T Shows Age Specific Expression Pattern in Ginseng and Increases Root Length in Transgenic *Arabidopsis*

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Panax ginseng Meyer is a perennial medicinal plant, the roots of which has been used in the traditional formulations in Oriental countries. To understand its floral transition, we isolated Flowering Locus T (FT) from ginseng, the bioinformatics analysis of PgFT has revealed a considerable homology to the higher plants, with the essential amino acids for FT function are conserved. The phylogenetic analysis has shown that the PgFT is belonged to the shrub classes of plants and closest kin to Jatropha curcas FT. The expression profiling from juvenile (2-year-old) were abundant in leaves as well as in root and was concentrated in the secondary leaflet and stem bottom in adult (4-year-old) ginseng plant tissues, moreover PgFT transcript displayed photoperiod dependent oscillation. The ectopic expression of PgFT in *Arabidopsis thaliana*, exhibit precocious flowering and several floral pathway integrators were up-regulated, interestingly their root length was increased in the transgenic seedlings. Therefore, we could conclude that PgFT encodes a florigen that acts as a key regulator in the flowering pathway in ginseng and hypothesize that, it might involve in the underground organ development as well. We believe our finding could provoke future studies on the physiology and development in *P. ginseng*.

Key words: FT, *Panax ginseng*, Perennials, Root growth, Floral transition

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