S06-1 Flavonoid-specific prenyltransferase genes of plants and its utilization

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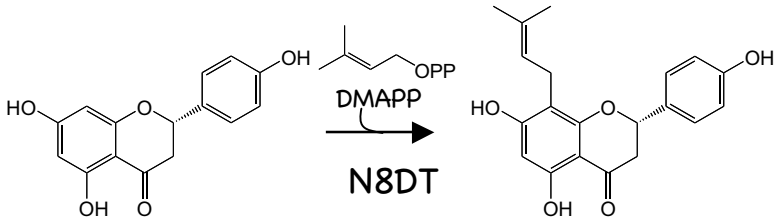
Prenylated flavonoids are natural products that exhibit diverse biological effects, and ca. 1000 compounds have been isolated from various medicinal plants as their active components. Those activities are, for example, antibacterial, antitumor, anti-androgen, anti-leishmania, and anti-NO production, which are largely dependent on the prenyl moiety attached to the aromatic rings of flavonoid core. Prenyltransferases responsible for the transfer of prenyl residue to flavonoid molecules were unidentified more than three decades, but recently we isolated a *naringenin 8-dimethylallyltransferase* cDNA (*N8DT*) encoding a membrane-bound enzyme from *Sophora flavescens* in a combination of informatics approach and functional screening by use of EST clones. This enzyme can specifically prenylate flavanones at their 8-position. This finding indicates that these enzymes belong to the family of membrane-bound prenyltransferase involved in vitamin E or plastoquinone biosynthesis. By use of the yeast transformant expressing N8DT, we have made an attempt to produce prenylated naringenin.



naringenin 8-prenylnaringenin