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Characterization of *Asparagus officinalis* hinokiresinol synthase

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Norlignans, which have a diphenylpentane (C6-C5-C6) structure, were found in coniferous trees and some monocotyledonous plants including *Asparagus officinalis* [1,2]. Their biosynthesis is of interest especially in relation to heartwood formation, a metabolic event specific to woody plants, because norlignans are deposited specifically in tree heartwood regions. This implies that the molecular mechanisms can be a clue to help us elucidate mechanisms for metabolic events specific to woody plants.

Hinokiresinol is the simplest norlignan compound, it is therefore a good target for the study of norlignan biosynthesis. Hinokiresinol has two geometrical (*E*)- and (*Z*)-isomers, which are phytoalexins of *Cryptomeria japonica* (Japanese cedar) and *A. officinalis*, respectively. Recently, biosynthetic processes and enzymatic formation of (*E*)- and (*Z*)-hinokiresinols were demonstrated using *C. japonica* and *A. officinalis* cells, respectively [2-4].

In the present study, cDNAs encoding *A. officinalis* (*Z*)-hinokiresinol synthase were cloned for the first time and their recombinant proteins were characterized biochemically.

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