

Production of Sakuranetin, an Antifungal Flavonoid, with Flavonoid 7-O-Methyltransferase from *Streptomyces avermitilis*

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Abstract

O-Methylation commonly found in secondary metabolites of plants and microorganisms, appears to transfer a methyl group to the hydroxyl group of the recipient which increases the hydrophobicity of the recipient. O-Methyltransferase, SaOMT-2, was isolated and characterized from *Streptomyces avermitilis*. SaOMT-2 was expressed in *E. coli* as an His-tag fusion protein and showed that the methyl was transferred onto the 7- hydroxyl group of the (iso)flavones, daidzein, genistein, kaempferol, and quercetin, as well as the flavanone naringenin. Nuclear magnetic resonance (NMR) and liquid chromatography-mass spectrometry (LC-MS) were used to confirm the location of the methyl group on the recipient compound of naringenin, which was biotransformed into sakuranetin by *E. coli* transformant expressing SaOMT-2. Therefore, *E. coli* transformant containing SaOMT-2 is likely to be used for the synthesis of the antifungal flavonoid, sakuranetin through biotransformation.

References

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