

Characteristics of O-methyltransferase cloned from rice

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Abstract

ROMT9 is a kind of O-methyltransferase in rice. It is composed of 368 amino acids. It has high homology (56.2%) with caffeic acid OMT (1KYZ.pdb). ROMT9 uses quercetin, luteolin and kampherol as its substrates. Quercetin and luteolin are methylated on 3'-OH by ROMT9. It methylates 3-OH of kampherol because it dose not have 3'-OH. SOMT2 is a soybean O-methyltrasferase. It methylates 4'-hydroxylated flavonoids. It has high homology (70.27%) with iso-flavone OMT (1FP2.pdb). SOMT2 methylates 4'-OH of quercetin. In order to find the reason why ROMT9 and SOMT2 produce different products from the same substrate, quercetin, authors looked for differences of binding sites based on molecular modeling.1)

Reference

1. H. Yang, J-H. Ahn, R. K. Ibrahim, S. Lee, Y. Lim, The three-dimensional structure of Arabidopsis thaliana O-methyltransferase predicted by homology-based modeling, (2004), J. Mol. Graph. 23, 77-87.