

Classification of O-methyltransferase cloned from *Oriza sativa*

Yukyung Lee, Bong Gyu Kim, Yoon Jung Lee, Joong-Hoon Ahn, Yoongho Lim

Bio/Molecular Informatics Center, Konkuk University

TEL: +82-2-450-3760, FAX: +82-2-453-3761

Abstract

ROMT17 is an O-methyltransferase isolated from rice. Its molecular weight is 28.3kDa. According to blast search, it is Mg²⁺-dependent OMT and CCoAOMT. Even though it seems to be an OMT included in class I, it uses flavonoids as its substrates. This character is included in class II. Therefore, ROMT17 is a noble OMT which has characteristics of both classes. Its characterization revealed that flavonoids with ortho dihydroxy groups substituted on aromatic ring were used as its substrates. This character shows us that ROMT17 is Mg²⁺-dependent OMT.1) However, it does not use 2', 3'-dihydroxylated flavonoids and those without double bond in C-ring. To clarify this, we determined 3D structure of ROMT17 and analyzed interaction between the enzyme and substrates based on the structural data.

Reference

1. L. Hoffmann, S. Maury, M. Bergdoll, L. Thion, M. Erard, and M. Legrand, Identification of the enzymatic active site of tobacco caffeoyl coenzyme A O-methyltransferase by site-directed mutagenesis (2001), J. Biol. Chem. 276, 36831-36838.