

Complete NMR chemical shifts of four flavonolderivatives

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Abstract

The function of the gene can be expressed by its translated protein. One of major groups of proteins is an enzyme. About 50% of proteins deposited in Protein Data Bank belong to enzymes. The function of an enzyme can be determined based on the discovery of its substrate. Methyltransferases can transfer methyl groups, and their roles in plants are to protect against phytopathogens and UV light, to regulate auxin transport, and to resist insects, so that the knowledge about methyltransferases gives the solutions of pathogen resistance, tolerance, and growth.^{1,2} It is known that many methyltransferases use flavonoids as their substrates.³ The enzymatic experiments on methyltransferases were carried out in vitro and in vivo conditions using HPLC.⁴ However, such experimental methods do not give information about the methylated positions of the substrates. The knowledge about the structures of flavonoides used as substrates may help us decide the methylated positions. Authors carried out the structural study of four mono-oxygenated flavonol derivatives based on the conventional NMR experiments. The NMR data of other two flavonol derivatives published previously were compared with ours.

References

1. J. H. Harborne, (1994) *The Flavonoids: Advances in Research*. Chapman & Hall, London.
2. I. O. Vvedenskaya and N. Vorsa, (2004) *Plant Sci.* 167, 1043.
3. Y. Yoon, Y. S. Yi, . Lee, S. Kim, B. G. Kim, J.-H. Ahn and Y. Lim, (2005) *Biochem. Biophys. Acta.*1730, 85.
4. W. Wu, C. Yan, L. Li, Z. Liu, and S. Liu, (2004) *J. Chromatogr. A* 1047, 213.