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Quantitative Determination of Magnolol in the Callus from Petioles and Mature Seeds of *Magnolia obovata*

In-Sun Park¹⁾, Ryo Funada²⁾, Susumu Kondo³⁾, Shinya Kajita³⁾ and Takafumi Kubo²⁾

- 1) United Graduate School of Agricultural Science, Tokyo University of Agriculture and Technology
- 2) Faculty of Agriculture, Tokyo University of Agriculture and Technology
- 3) Graduate School of Bio-Applications and Systems Engineering, Tokyo University of Agriculture and Technology

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Abstract: The bark of *Magnolia obovata* has been used as a source of traditional Japanese herbal medication because it contains the medicinal ingredient such as magnolol, which is a kind of neolignan. In this study, the contents of magnolol were determined in the calli derived from the petioles and mature seeds. Calli were induced on Murashige and Skoog medium (MS medium), supplemented with several concentrations of 2, 4-dichlorophenoxyacetic acid (2, 4-D) and 6-benzylaminopurine (BAP) or kinetin, and then subcultured on the same medium. Magnolol in plants and calli was identified by gas chromatography and mass spectrometry (GC/MS). High-performance liquid chromatography (HPLC) analyses revealed that the maximum contents of magnolol in the calli from petioles and mature seeds were 150μg/g and 70μg/g, respectively. The induced calli from mature seeds were well proliferated in the combination of 10μM 2, 4-D and 10μM BAP, while those obtained from petioles were dead during the subculture. The contents of magnolol were different among the culture conditions, the culture period of callus and original plant organs used for calli induction.

Keywords: callus, Magnolia obovata, magnolol, neolignan

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