

**Wogonin but not Nor-wogonin inhibits
lipopolysaccharide and lipoteichoic
acid-induced iNOS gene expression and NO
production in macrophages.**

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摘要

Abstract

Wogonin (Wog; 5,7-dihydroxy-8-methoxy flavone) has been shown to effectively inhibit lipopolysaccharide (LPS)-induced inducible nitric oxide synthase (iNOS) gene expression and nitric oxide production in our previous study. In the present study, we found that Nor-wogonin (N-Wog; 5,7,8-trihydroxyl flavone), a structural analogue of Wog with an OH substitution at C8, performed different effect on LPS- or lipoteichoic acid (LTA)-induced iNOS gene expression and nitric oxide (NO) production in macrophages. Wog, but not N-Wog, significantly inhibits LPS- or LTA-induced NO production through suppressing iNOS gene expression at both protein and mRNA without affecting NO donor sodium nitroprusside-induced NO production, NOS enzyme activity, and cells viability. Activation of JNKs (not ERKs) via phosphorylation induction, and an increase in c-Jun (not c-Fos) protein expression were involved in LPS- and LTA-treated RAW264.7 cells, and those events were blocked by Wog, but not N-Wog, addition. Furthermore, 5,7-diOH flavone, but not 5-OH flavone, 7-OH flavone, 5-OH-7-OCH₃ flavone, significantly inhibits LPS-induced iNOS protein expression and NO production, and 7,8-diOCH₃ flavone performs more effective inhibitory activity on LPS-induced NO production and iNOS protein expression than 7-OCH₃-8-OH flavone. These data suggest that OHs at both C5 and C7 are essential for NO inhibition of flavonoids, and OCH₃ at C8 may contribute to this activity, and suppression of JNKs c-Jun activation is involved.