

## Anti-Inflammatory Activity of 4,7-Dimethoxy-5-Methyl-1,3-Benzodioxole from *Antrodia Camphorata* in LPS-Induced RAW264.7 Macrophages

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### Background & Aim :

4,7-dimethoxy-5-methyl-1,3-benzodioxole (DMB) is a major monophenyl compound isolated from *Antrodia camphorata*. DMB has been reported to exhibit several biological activities. However, the cellular mechanism of its anti-inflammatory activity has not yet been elucidated. In this study, we attempted to evidence the anti-inflammatory potential of DMB by investigating the effect of DMB on the inflammatory response in LPS-induced RAW264.7 Macrophages.

### Materials & Methods :

#### Results :

DMB significantly decreased the productions of inflammatory mediators, such as NO, IL-1 $\beta$  and TNF- $\alpha$  in LPS-induced RAW264.7 Macrophages. The reduction of inflammatory mediators were accompanied by a reduction in iNOS and COX-2 protein expression, as evaluated by Western blotting. DMB also inhibited the nuclear factor  $\kappa$ B (NF- $\kappa$ B) nuclear translocation and mitogen-activated protein kinases (MAPKs) phosphorylation in LPS-induced stimulated RAW264.7 cells. In addition, DMB induced translocation of Nrf2 and further induction of HO-1 expressions

#### Conclusion :

These results indicate that anti-inflammatory activity of DMB might be mediated by NF- $\kappa$ B, MAPK and Nrf2/HO-1 signaling pathway. Therefore, we suggest that DMB has a potential as an anti-inflammatory drug.

#### Keywords:

4,7-dimethoxy-5-methyl-1,3-benzodioxole; anti-inflammation; NF- $\kappa$ B; MAPKs; Nrf2/HO-1 signaling pathway