

**Isolation, Identification, Modification
and Bioactivity of Phytochemicals from
Curcuma Xanthorrhiza Roxb.**

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ABSTRACT

Hydrodistilled essential oil from the rhizomes of *Curcuma xanthorrhiza* was analyzed by GC and GC/MS. A total of 32 compounds representing 93.6% of the total volatile content were identified. The major components found were xanthorrhizol (33.2%), ar-curcumene (10.4%) and furanodiene (10.0%). The major constituents in the oil were purified by several chromatographic techniques to afford four sesquiterpenes. Their structures were identified as ar-curcumene, furanodiene, germacrone and xanthorrhizol. The dried rhizome yielded curcuminoids as the major component, together with xanthorrhizol and ar-curcumene. Structural modification of xanthorrhizol led to the synthesis of several other natural bisabolane type sesquiterpenoids. The bioassay studies revealed that xanthorrhizol, and its derivatives were active as antimicrobe, antioxidant, anti-inflammatory and antityrosinase.

Key words: *Curcuma xanthorrhiza*; sesquiterpenes; xanthorrhizol; Zingiberaceae.