

## Bioactive sesquiterpenes from *Curcuma ochrorhiza* and *Curcuma heyneana*

### ABSTRACT

*Curcuma ochrorhiza* ('temu putih') and *C. heyneana* ('temu giring') are two Zingiberaceous species which are commonly used in traditional medicine in Malaysia and Indonesia. Phytochemical investigations on these *Curcuma* species have resulted in the isolation of six sesquiterpenes, namely zerumbone (1), furanodienone (2), zederone (3), oxycurcumenol epoxide (4), curcumenol (5) and isocurcumenol (6), along with phytosterols stigmasterol and alpha-sitosterol. Compounds 1 and 2 were obtained for the first time for *C. ochrorhiza* while 4 was new to *C. heyneana*. The hexane extract of *C. ochrorhiza* and sesquiterpenes 1 and 3 showed very strong cytotoxicity activity against T-acute lymphoblastic leukaemia cells (CEM-SS), with IC(50) values of 6.0, 0.6 and 1.6 microg mL(-1), respectively. Meanwhile, constituents from *C. heyneana* (4-6) demonstrated moderate inhibition against CEM-SS in cytotoxic assay, with IC(50) values of 11.9, 12.6 and 13.3 microg mL(-1), respectively. The crude extracts and sesquiterpenes isolated were moderately active against certain bacteria tested in antimicrobial screening.

**Keyword:** *Curcuma ochrorhiza*; *Curcuma heyneana*; Sesquiterpenes; Cytotoxic; Antimicrobial