In vitro anticandidal activity of xanthorrhizol isolated from \textit{Curcuma xanthorrhiza} Roxb

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Abstract

Objectives: Xanthorrhizol, isolated from the methanol extract of \textit{Curcuma xanthorrhiza} Roxb., was investigated for its anticandidal activity using six \textit{Candida} species.

Methods: The in vitro susceptibility tests for xanthorrhizol were carried out in terms of MIC and minimal fungicidal concentration (MFC) using the NCCLS M27-A2 broth microdilution method. Time–kill curves were determined to assess the correlation between MIC and fungicidal activity of xanthorrhizol at concentrations ranging from 0 MIC to 4x MIC.

Results: All \textit{Candida} species showed susceptibility to xanthorrhizol in the MIC range 1.0–15.0 mg/L for \textit{Candida albicans}, 1.0–10 mg/L for \textit{Candida glabrata}, 2.0–8.0 mg/L for \textit{Candida guilliermondii}, 2.5–7.5 mg/L for \textit{Candida krusei}, 2.5–25 mg/L for \textit{Candida parapsilosis} and 2.0–8.0 mg/L for \textit{Candida tropicalis}. Time–kill curves demonstrated that xanthorrhizol was able to kill the \textit{Candida} strains with MFCs of 20 mg/mL, 15 mg/mL, 12.5 mg/mL, 10 mg/L, 30 mg/mL and 10 mg/L for \textit{C. albicans}, \textit{C. glabrata}, \textit{C. guilliermondii}, \textit{C. krusei}, \textit{C. parapsilosis} and \textit{C. tropicalis}, respectively.

Conclusions: The potent anticandidal activity of xanthorrhizol may support the use of \textit{C. xanthorrhiza} for the treatment of candidiasis.

Keywords: \textit{C. xanthorrhiza}, MIC, MFC, antifungals