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Isolation of antifungal compound from *Paeonia suffruticosa* and its antifungal mechanism

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To isolate antifungal compound from *Paeonia suffruticosa*, and to find the antifungal mechanisms by observing the ultrastructural modifications of yeasts in growth phase produced by 1,2,3,4,6-penta-O-galloyl-beta-D-glucose (PGG). Methods: Peony (*Paeonia suffruticosa*) root bark (PRB) was separated by solvent extraction and purified by high performance liquid chromatography (HPLC) method using analytical and preparative reversed phase C18 column on the basis of bio-assay method. In order to investigate the antifungal mechanism of PGG, Yeasts were submitted to different concentrations [3×minimum inhibition concentration (MIC), 0.3×MIC] for 1 h under constant stirring at 30 , and transmission electron microscopy was performed. Results: Based on the antifungal activity of PRB on Candida glabrata CBS138, the antifungal compound were isolated in ethyl acetate layer of PRB and identified as PGG by mass spectrometry, 1H nuclear magnetic resonance (NMR) analyses, with molecular weight of 940 and molecular formular as C41H32O26. Transmission electron microscopy showed that PGG degraded the cell wall envelope. Conclusion: The results suggest that PGG may be responsible for the antifungal activity of PRB by disrupting the structure of cell wall directly.

Biography

Zhao yong has completed his Ph.D at the age of 34 years from Capital Medical University in 2012. He has been a physician at the department of infectious diseases and critical care medicine in Beijing friendship hospital from 1999 to now. He has published 2 English papers about fungal infection and isolation of antifungal compound from herbal medicine, and several Chinese papers about therapy on infectious diseases and critical care medicine.

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