

The antimicrobial activity of heyneanol A extracted from the root of taiwanese wild grape

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摘要

Abstract

Aims: To search for antimicrobial compounds against pathogenic bacteria from grape vines (*Vitis* spp.). To investigate the antimicrobial efficacy of active compounds towards methicillin-resistant *Staphylococcus aureus* (MRSA). **Methods and Results:** The root extracts of taiwanese wild grape (*Vitis thunbergii* var. *taiwaniana*) showed marked activities against Gram-positive bacteria using the disc diffusion method. After purification, the active compound 1 was confirmed as heyneanol A by mass spectroscopy and nuclear magnetic resonance. Heyneanol A showed an minimum inhibitory concentration (MIC) value of 2 .g ml⁻¹ towards MRSA and a value of 2 to 4 .g ml⁻¹ for *Enterococcus faecium*, *S. aureus*, *Streptococcus agalactiae* and *Streptococcus pyogenes*. In addition, the contents of heyneanol A were determined as 36 mg g⁻¹ in roots of taiwanese wild grape. **Conclusions:** The root extracts of grapevines have good antimicrobial activities towards some strains of Gram-positive pathogens. Heyneanol A, the major antimicrobial compound, is especially active towards MRSA. In addition, the abundances of heyneanol A and other stilbenes in the roots of grapevines make it possible to produce natural antimicrobial compounds from this plant species. **Significance and Impact of the Study:** This study reports for the first time the antimicrobial compounds in the root extracts of grapevines. The results will have clinical significance owing to their activities against MRSA