

Screening and Component Identification of Traditional Chinese Medicine for Anti Staphylococcus Aureus Activity

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Abstract

Background: With the increasingly severe problem of antibiotic resistance of Staphylococcus aureus, which poses a serious threat to human health and the medical field, there is an urgent need to find new antibacterial candidate drugs. Screening substances with antibacterial potential from traditional Chinese medicine can provide a theoretical basis for the research and development of new drugs. **Objective:** To screen traditional Chinese medicines which possess anti-Staphylococcus aureus effects and further isolate and extract its antibacterial active components. **Methods:** Ten kinds of traditional Chinese medicines, namely Rhubarb, Platycladus orientalis leaves, Scutellaria baicalensis, Houttuynia cordata, Dandelion, Taxus chinensis, Raw Xanthocarp, Ripe Xanthocarp, Aconite and processed aconite, were selected. The separation and extraction of each component of the traditional Chinese medicine were carried out by Hangzhou Zungui Biomedicine Technology Co., LTD. 10 to 40 components were obtained from each traditional Chinese medicine. The minimum inhibitory concentration test (MIC) was used to detect the antibacterial effects of different components of traditional Chinese medicine on Staphylococcus aureus (ATCC25923). **Result:** Platycladus orientalis leaves possess anti-Staphylococcus aureus activity. Further detection of 36 components of Platycladus orientalis leaves revealed that component 13 had a significant antibacterial effect on Staphylococcus aureus (figure 1), with a MIC value of $\leq 30\mu\text{g/mL}$, which was close to the antibacterial concentration of the vancomycin positive control. The remaining 9 components of traditional Chinese medicine had no obvious anti-Staphylococcus aureus activity ($\text{MIC} \geq 250\mu\text{g/mL}$). **Conclusion:** The leaves of the traditional Chinese medicine Platycladus orientalis have an antibacterial effect on Staphylococcus aureus, and the effective antibacterial part is component 13.

Keywords

Traditional Chinese Medicine, Platycladus Orientalis Leaves, Component, Staphylococcus Aureus, Minimum Inhibitory Concentration