Effects of Scutellaria Baicalensis on Activity and Biofilm Formation of Klebsiella Pneumoniae.

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Abstract

Objective To explore the effects of Scutellaria baicalensis on activity and biofilm formation of Klebsiella pneumonia (Kp).Methods The broth and agar dilution Methods were carried out to determine minimum inhibitory concentration and minimum bactericidal concentration of Scutellaria baicalensis for TW518. VITEK-32 system was used to assay TW518 susceptibility to antibiotics. Kp biofilms were formed in vitro and stained with BacLight Live/Dead stain. The class integron genel1 mRNA expression was analyzed with RT-PCR.Results The minimum inhibitory concentration of Scutellaria baicalensis on TW518 identified as a Kp colony was 32 mg/ml, and minimum bactericidal concentration was 64 mg/ml. Scutellaria baicalensis and broad-spectrum penicillin, cephalosporin, quinolones, or beta-lactamase had synergistic bactericidal effects. Biofilm formation activity of Kp treated with Scutellaria baicalensis was significantly lower than that of the control group. And class integron genel1 mRNA expression of TW518 was significantly inhibited by Scutellaria baicalensis.Conclusions Scutellaria baicalensis has sterilization effect on Kp, and Scutellaria baicalensis could effectively inhibit Kp biofilm formation with prolonged treatment. Scutellaria baicalensis might inhibit Kp biofilm formation through down-regulating integron genel1 expression.

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