

Study on the protoplast fusion and spawn rejuvenation of *Poria cocos*

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Abstract: *Poria cocos* is an important medical macrofungus, the sclerotium of *Poria cocos* has specific value as the drug material. There are few papers about its breeding and spawn rejuvenation. In this project, the protoplasts of cultivated strain T and wild strain L were prepared and treated separately by ultraviolet and heating, then fused with the PEG6000. The tural fusants were selected and identified by the affinity and ISSR analysis. 71 incompatibility strains between parents and regenerations were obtained from 118 regenerations by the affinity analysis. Five incompatibility strains were amplified with different primers, the results were showed that they had specific bands of both parents in the profile amplified with 3 primers, which proved these 5 strains were fusants by means of molecular biology marker.

On the other hand, 25 strain were selected from 168 protoplast regenerations of cultivated strain T for cultivation experiment. The fresh sclerotium weight of these protoplast regenerations were better than the original strain. Significant 3 strains (T-1, T-4, T-7) increased respectively 118%, 73% and 73% than original strain. This method could be the effective in the rejuvenation *Poria cocos*.

Key word: *Poria cocos*; Inactivated protoplast; Protoplast fusion; Protoplast regenerations ; Protoplast rejuvenation; ISSR analysis