

Composition for detecting β -1,3-glucan, preparation method thereof and diagnostic kit detecting β -1,3-glucan

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Abstract

The study related to a composition for detecting β -1,3-glucan in a test sample, a preparation method thereof and a diagnostic kit for detecting β -1,3-glucan. In the method, as chelating agent which is used to chelate calcium ions in collecting the sample comprising a mixture of plasma and hemocyte lysate from insects and in the separation process to obtain a phenoloxidase composition, any of chelating agents known in the field can be used without limitation, and can be EDTA, EGTA or citric acid, for example^{1),2)}. To treat the insect sample with the buffer solution containing the a chelating agents is by column chromatography. A column packed with resin can be loaded with an insect sample, and eluted with the buffer solution containing a chelating agent to obtain fractions. The composition that can detect β -1,3-glucan specifically down to 20pg/ml can be purified by column chromatography. What is Fungi Kit? Fungi Kitis a fungal diagnostic kit to detect β -1,3-glucan, a complex carbohydrate polymer originated from the cell walls of all fungi, in human bloods. β -1,3-glucan in infected human body bloods can be used as potential diagnostic markers of fungal infection^{3),4),5)}. Fungi Kit responds to fungal β -1,3-glucan by enzymatic color reaction. Fungi Kitis very specific and sensitive to β -1,3-glucan (20pg/ml), and easy to perform. Why is it important to detect fungal infection earlier? Invasive fungal infections have emerged as a major cause of morbidity and mortality in immunocompromised patients. However, culture and histopathology for the diagnosis of fungal infections have the limited sensitivity and specificity. Unfortunately, the rate of positive blood cultures, even with full blown invasive disease, is only around 50%. The value of earlier diagnosis is becoming more widely appreciated. Early diagnosis can be benefit, reducing patient anxiety, minimizing the need for additional diagnostic test and eliminating the use of ineffective antifungal treatment.

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