

عنوان مقاله:

Antifungal activity of Rosemary oil extract against in the *Aspergillus flavus* fungus and its effect on the AFL₁ Gene expression by Real Time-PCR

محل انتشار:

بیست و یکمین کنگره بین المللی میکروب شناسی ایران (سال: 1399)

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خلاصه مقاله:

Background and Aim : Investigating about the extract of Rosemary in various groups of fungi and this extract's minimum effective deterrence density on types of fungi and also the survey of this extract in expressing the AFL₁ gene in *Aspergillus flavus* is the main target of this research. Rosemary is a very important medicinal herb. Although its antimicrobial effect is fully considered, but its effect on toxin-causing and pathogenic funguses is not studied very much. Therefore, considering the limitation of antifungal drugs, chemical effects, and drug resistance of them, it seems the access of reaching an effective herbal medicine really matters. Since the Aflatoxin is concerned in various food, livestock, pharmaceutical, and medical industries, this research illustrates the mechanism of growth containment by this fungus. **Methods :** First of all we cultivate *Aspergillus flavus* and *Candida albicans* in sabouraud dextrose agar and *Trichophyton verrucosum* and *Epidermophyton floccosum* on Mycocell agar perimeter and then we put Rosemary impregnated paper disks on the surface of perimeter to determine the anti-fungal effect with disk diffusion method and creation of inhibition zone then with the help of ۱۰ standard sterile tubes we dilute Rosemary extract in the perimeter of sabouraud dextrose broth to gain this extract's effective concentration and finally Rosemary's effect on expressing the AFL₁ gene was examined. **Results :** Achieved results indicate that the extract of Rosemary on various types of fungi has an inhibitory effect. The average diagonal of bright anti growth haloes are about ۱۶-۱۸ mm. Therefore the minimum density of deterrence rosemary extract or MCI for *Candida albicans* is approximately ۴ to ۶ mg per liter, for *Aspergillus flavus* is ۳ to ۵ mg per liter and dermatophyte fungus *Epidermophyton floccosum* and *Trichophyton verrucosum* is ۴ to ۶ mg per liter and the results of RT-PCR confirm this inhibitory effect on expressing the AFL₁ gene which produces Aflatoxin in molecular level. **Conclusion :** The extract of Rosemary can have a considerable inhibitory effect on expressing the AFL_R gene and production of *Aspergillus flavus*.

کلمات کلیدی:

Aspergillus flavus, Rosemary, AFL₁, Real Time-PCR

لینک ثابت مقاله در پایگاه سیویلیکا:

