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Prospects for the use of vitamin D_3

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Summary

Pathogenic fungi are now a real problem in several areas, especially the medical and food field due to their powers of contamination and pathogenicity, as well as the resistance to the majority of antifungals drugs that are most of the time fungistatic. So it is necessary to find new powerful and effective antifungals drugs with a fungicidal action on these pathogens. Vitamin D_3 were selected for the test of antifungal activity, through its spectrum of biological activity, so the purpose of our study is to prove that vitamin D_3 has a powerful fungicide effect towards the identified fungal strains after isolated from different source (plants, soil, bread... etc).
The test of antifungal activity shows that vitamin D_3 has a powerful effect on the majority of the strains tested at a minimum fungicide concentration MFC_C = 100µg/ml and the inhibition zones vary between 9.33 and 25.5 mm including 6mm the diameter of disc.
The obtained minimum fungistatic concentration MFC_S are between 50 and 12.5µg.ml $^{-1}$, and the value of vitamin D_3 MFC_C is between 50 and 100µg.ml $^{-1}$. The MFC_C / MFC_S = 2 < 4 so vitamin D_3 shows a fungicidal effect.
So the Vitamin D_3 can be proposed as a medical treatment against human pathogenic fungi or natural food preservative in the field of food industry.

Key words: Vitamin D_3, antifungal activity, fungicidal, fungistatic, minimum fungicidal concentration MFC_C, minimum fungistatic concentration MFC_S