

## Action of Porphyrin Derivatives Against Skin Fungi, *Candida albicans* and *Malassezia furfur*

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Porphyrins are deeply coloured highly fluorescent compounds of natural or synthetic origin with a broad spectrum of applications such as medicine, dye-sensitized solar cells and electrocatalysis. In oxygenated media, in the presence of light, porphyrins generate Reactive Oxygen Species (ROSs), singlet oxygen and superoxide radicals which can be toxic to microbes. Certain pathogenic fungi show resistance against available antifungal products and some are toxic and irritant to humans. In the present study, the effect of sodium salt of meso-tetra (4-carboxyphenyl) porphyrin and Zn (II) meso-tetra (4-carboxyphenyl) porphyrin (ZnTCP) were tested against fungi *Candida albicans* and *Malassezia furfur* by using standard agar disc diffusion method. Sabouraud Dextrose agar (SDA) as the fungal culture medium and a 10 ppm clotrimazole solution (antifungal cream) as the positive control was used. Inhibition zones (11 mm) were observed in *M. furfur* treated with 10 ppm sodium salt of meso- tetra (4- carboxyphenyl) porphyrin. *Malassezia furfur* treated with ZnTCP showed 12 mm averaged inhibition zone diameter and both were compared with the inhibition zones of positive control using one-way ANOVA followed by Tukey's Pairwise comparisons. There was no significant difference compared with positive control and porphyrin salts. However, for *C. albicans*, there was no observed antifungal effect of porphyrins. Therefore, above results proved that both porphyrins have antifungal effects on fungi *M. furfur*, and no antifungal effect against *C. albicans*.

**Keywords:** Porphyrin, photodynamic action, antifungal, candida albicans, Malassezia furfur