



SMALL MOLECULE TECHNOLOGIES, INC.

MOLECULES & HEALTH

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Protecting Skin Against Yeast



Cutaneous candidiasis or skin infections caused by the yeast (a type of fungus) *Candida albicans* are fairly common. In fact fungal infections in general cause some of the most prevalent human infections.

C. albicans is actually part of the normal skin flora that is typically kept in check by other normal skin microorganisms. It usually causes only superficial infections and rashes, but can cause more serious invasive infections following trauma such as surgery or extensive skin burns. Surprisingly, despite constant improvements in antiseptic measures, hospitals (and other facilities) continue to be reservoirs for fungi including *C. albicans*.

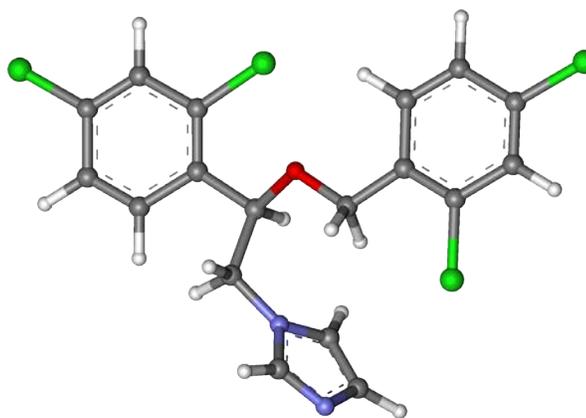
Factors that can increase the risk of infections with *C. albicans* include antibiotic use, immunosuppression, obesity, diabetes, chemotherapy, and advanced age. The typical signs of infection with *C. albicans* include itching (which can be intense), redness and rash, and vesicles or pimple-like bumps that may be painful. Common areas of infection include skin folds, genital areas, buttocks, and under arms and breasts. Predisposing environmental factors include humidity, excessive sweating, and moist environments.

Advantages of Miconazole

Small Molecule Technologies Antifungal Cream provides the proven effectiveness of two percent (2%) miconazole nitrate in a soothing petrolatum-free base. Small Mol-

ecule Technologies and the key scientific ingredients have been added to improve the skin's nourishment and to aid in the recovery process. Small Molecule Technologies Antifungal Cream is effective for topical treatment of chronic or acute epidermal fungal infections caused by *C. albicans*, and the associated symptoms including inflammation, pain, itching, odor, vesicles, and lesions. Small Molecule Technologies Antifungal Cream is also effective for treating the scaling, cracking, burning and skin irritations associated with yeast and fungal infections.

Miconazole has a long-standing history of use against fungal infections. Due to its broad antimicrobial spectrum of activity that includes activity against *C. albicans*, some Gram-positive bac-



teria (such as staphylococci) and *Malassezia* species of fungi, miconazole remains a time-honored compound. Topical miconazole is well tolerated and has the added advantage of delivering the active compound to the desired area without systemic effects that oral antifungal medications can have. The main activity of miconazole against fungi is the induction of a massive disruption of fungal cell membrane permeability resulting in the leakage of nutrients and proteins from fungal cells. Miconazole also inhibits ergosterol production that is necessary for fungal cell wall synthesis. Furthermore, miconazole inhibits various membrane-bound enzymes as well as lipid biosynthesis in fungi.

Natural Ingredient Antifungal Actives

Small Molecule Technologies Antifungal Cream also includes the important polyphenols resveratrol, epigallocatechin-3-gallate



(EGCG), oleuropein from grapes, green tea and olives respectively. Resveratrol has been shown to induce cell death (apoptosis) in *C. albicans*. EGCG has also been shown to have antimicrobial effects against *C. albicans*, which include activities against biofilm formation. In addition, oleuropein has antimicrobial activity against *C. albicans*. Another important ingredient in Small Molecule Technologies Antifungal Cream, soothing avena sativa (oat) extract includes avenanthramides that have important anti-fungal activities.

Soothing Oats

In addition, several of the extraordinary small molecules found in Small Molecule Technologies Antifungal Cream have potent anti-inflammatory activities to help reduce redness, pain and swelling including oleuropein, resveratrol, and EGCG as well as the important small molecules, melatonin, and L-glutathione. In addition, avenanthramides (from oat extract), shea butter and dipotassium glycyrrhizinate are all anti-inflammatory.

To help prevent fungal infections, wear clothing that breathes and dry off completely after bathing, swimming or heavy sweating.

Be sure to check under arms and breasts, in the groin area and in skin folds for excess moisture or signs of infection. Use Small Molecule Technologies Antiseptic Cleanser to gently clean skin and reduce over-population of microorganisms including *C. albicans*. To treat fungal infections caused by *C. albicans* use Small Molecule Technologies Antifungal Cream. Small Molecule Technologies Antifungal Cream can also help prevent fungal infections from recurring by providing nourishment to skin that strengthens the skin barrier. In addition, Small Molecule Technologies includes beneficial ingredients that promote cellular repair and wound healing.

It's good to know that Small Molecule Technologies Antifungal Cream can defend against *C. albicans* and will help reduce the irritation and discomfort caused by cutaneous yeast infections.

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