Method and composition for prevention and treatment of oral fungal infections

Abstract

A composition of stabilized chlorine dioxide at a concentration range of about 0.0004% to about 0.8% (w/v) having anti fungal properties to prevent oral fungal infections and method of use are disclosed.

Classifications

A61K33/20 Elemental chlorine; Inorganic compounds releasing chlorine

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Current Assignee : Micropure Inc

Worldwide applications

2009 ~~US~~ 2017 US

Application US12/500,163 events

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External links: USPTO, USPTO Assignment, Espacenet, Global Dossier, Discuss

Claims (4)

Hide Dependent

1. A composition inhibiting fungal infection in the oral cavity by inhibiting *Candida* species including *C. albicans, C. dubliniensis, C. glabrata,* and *C. krusei* with a solution of stabilized chlorine dioxide at a concentration in the range of about 0.0004% to about 0.05% (w/v).

2. A composition for the treatment and prevention of fungal infection in the oral cavity by the fungicidal effects on *Candida* species also including *C. albicans, C. dubliniensis, C. glabrata,* and *C. krusei* with a solution of stabilized chlorine dioxide at a concentration in the range of about 0.4% to about 0.8% (w/v).

3. A method for reducing and killing *Candida albicans, C. dubliniensis, C. glabrata*, and *C. krusei* by application of a solution of stabilized chlorine dioxide at a concentration in the range of about 0.0004% to about 0.8% (w/v).

4. A method of inhibiting the growth of *Candida albicans, C. dubliniensis, C. glabrata,* and *C. krusei* by application of a solution of stabilized chlorine dioxide at a concentration in the range of about 0.0004% to about 0.8% (w/v).

Description

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application is related to and claims priority to a provisional application entitled "METHOD AND COMPOSITION FOR PREVENTION AND TREATMENT OF ORAL FUNGAL INFECTIONS" filed Jul. 10, 2008, and assigned Ser. No. 61/079,532.

BACKGROUND OF THE INVENTION

[0002] 1. Field of Invention

[0003] The present invention relates to the use of stabilized chlorine dioxide in topical oral compositions to prevent oral fungal infections.

[0004] 2. Description of Related art

[0005] Thrush, clinically termed oral candidiasis, is the most common opportunistic fungal infection in humans. Thrush is caused by the imbalance of microorganisms in the oral cavity allowing *Candida* species (fungus or yeast) to grow out of control causing infection with development of white lesions and potentially spreading to other parts of the body, including the esophagus, lungs, liver, and skin. Four types of oral thrush are recognized: angular cheilitis, denture stomatitis, erythematous candidiasis, and pseudomembranous candidiasis. Thrush may involve several species of *Candida* resident in the oral ecology, each with its own characteristics and susceptibility to treatments.

[0006] *Candida* species are found in the oral cavity as normal commensal microorganisms and may overgrow when the host response is weakened, such as in immunocompromised individuals. Immunocompromised conditions include HIV/AIDS, nutritional deficiencies, metabolic disorders such as diabetes, malignancies, xerostomia, medication side effects, aging, pregnancy, Sjogrens syndrome, dentures, and smokers.

[0007] The amount of *Candida* colonization in the oral cavity of denture wearers was higher (Abu-Elteen and Abu-Alteen, 1998). Studies that observed oral cavities of immunocompromised patients indicate that patients who wore dentures were associated with increased numbers of yeasts, more specifically *Candida* species (Willis et al., 1999; Gonclaves et al., 2006).

[0008] The oral microbiological environment can be significantly affected by tobacco smoking, specifically having an effect on oral bacteria and fungi, particularly *Candida.* The impact of smoking on thrush varies in combination to pre-existing conditions (dentures, HIV, and diabetes) (Soysa and Ellepola, 2005). Increasingly, studies show smokers have greater numbers of oral *Candida* carriage than non-smokers (Abu-Elteen and Abu-Alteen, 1998; Willis et al., 1999). Several studies suggest that smoking has a significant affect on the incidence of thrush in immunocompromised patients. Smoking is an important risk indicator for thrush, especially in HIV infected patients (Chattopadhyay et al., 2005). Conley et al. (1996), Campisis et al. (2002), and Slavinsky et al. (2002) found significant associations between thrush and smoking in HIV infected individuals. Willis et al. (1999) reported that seventy seven percent (77%) of diabetic patients carried Candida species in the mouth. Among these patients, there was a significant increase in the tobacco smokers. Smoking alone or in combination with other factors may be contributory to the development of thrush.