## SUMMARY

**[0008]** Ineffectiveness and toxicity of some long-term treatments for certain pathogens (e.g., fungi) as well as anti-fungal drug resistance and recurrence of infection has resulted in a need for an alternative treatment to those currently available.

**[0009]** Among other things, the present disclosure provides compositions comprising and methods for one or more bacterium (e.g., a probiotic) for treating, inhibiting, or preventing infection with one or more pathogenic microorganisms.

**[0009a]** In one aspect, the present disclosure refers to the use of a composition in the manufacture of a medicament for treating a skin condition of a subject in need thereof wherein the medicament is to be administered topically to the subject, wherein the composition comprises a probiotic of the genus Alcaligenes, wherein the probiotic comprises a polynucleotide having a nucleic acid sequence at least 95% identical to the 16s rRNA gene sequence of SEQ ID NO: 1.

**[0010]** In some embodiments, the present disclosure provides pharmaceutical compositions comprising a probiotic, which probiotic comprises (i) human-isolated or synthetic *Alcaligenes faecalis, Bacillus altitudinis, Bacillus pumilus, Bacillus subtilis, Janthinobacterium lividum,* in an amount effective to treat a disease, disorder, or condition associated with a pathogenic microorganism and (ii) at least one first excipient, wherein said first excipient is a cryoprotectant.

**[0011]** In some embodiments, the disease disorder or condition is present in a mammal. In some embodiments, the mammal is a human. In some embodiments, the pharmaceutical composition is administered to a human in need thereof, in an amount effective to treat the human skin disease, disorder, or condition. In some embodiments, the disease, disorder, or condition comprises a skin disease. In some embodiments, the pharmaceutical composition is administered in an amount effective to treat growth of a topical pathogenic microorganism present on or in the skin of the human. In some embodiments, the topical pathogenic microorganism comprises or consists of *Malassezia*. In some embodiments, the disease, disorder, or condition is associated with *Malassezia*. In some embodiments, the *Malassezia* comprises or consists of one or more of *Malassezia restricta, Malassezia furfur,* or *Malassezia globosa.* In some such embodiments, the disease, disorder, or condition is selected from dandruff, atopic eczema, dermatitis, pityriasis versicolor, tinea versicolor, seborrheic dermatitis, folliculitis or any combinations thereof. In some embodiments, the

topical pathogenic microorganism comprises or consists of a dermatophyte. In some embodiments, the disease, disorder, or condition is associated with a dermatophyte. In some embodiments, the dermatophyte comprises or consists of *Trichophyton.* In some embodiments, *Trichophyton* comprises or consists of *Trichophyton mentagrophytes*. In some embodiments, *Trichophyton* comprises or consists of *Trichophyton rubrum*. In some embodiments, the disease, disorder, or condition is selected from tinea barbae, tinea capitis,