neurotransmitters (such as substance P) that cause neurogenic inflammation, i.e. cutaneous neurogenic inflammation.

There is thus a need for a composition capable of treating, preventing and protecting sensitive skin, intolerant skin whose inflammatory component is neurogenic inflammation.

The object of the present invention is to meet these needs, in other words to propose a composition that protects and/or improves the condition of sensitive skin, or of intolerant skin, by reducing or inhibiting cutaneous neurogenic inflammation.

For the first time, the applicant has demonstrated the beneficial properties in tissue regeneration and healing of skin lesions of a bacterial extract derived from a bacterial strain (or bacterium) LMB64 isolated from groundwater. This bacterium was described by the applicant in patent application WO2012/085182. More particularly, the extracts known as S0, E0 and ES0 were described and exemplified, respectively consisting of the culture supernatant separated from the biomass, the lysed cell biomass, and the supernatant after incubation of the culture at basic pH for several hours. Fractions E0 and ES0 were tested and it was shown that these extracts E0 and ES0 had the ability to induce cytokines and mature Langerhans cells (for E0) as well as activate TLR2/TLR4/TLR5 receptors, antagonize PARs and induce antimicrobial peptides (for ES0). These results made it possible to consider the use of such extracts in the treatment of inflammatory diseases such as pruritus, psoriasis, eczema or atopic dermatitis.

SUMMARY OF THE INVENTION

The inventors have surprisingly revealed the effectiveness of a particular novel bacterial extract in preventing and/or treating cutaneous neurogenic inflammation.

Indeed, the inventors have demonstrated that this bacterial extract has an inhibitory effect on the release by keratinocytes of IL-1β and TNF-α induced by substance P.

In one aspect, provided herein is a use of a bacterial extract of a non-pathogenic Gram-negative bacterium belonging to the class Betaproteobacteria, subfamily Neisseriaceae, comprising a 16S rRNA comprising sequence SEQ ID NO: 1, or any sequence having at least 80% identity with sequence SEQ ID NO: 1 in the manufacture of a medicament for the prevention and/or the treatment of cutaneous neurogenic

inflammation, said bacterial extract being obtained by a process comprising the steps of:

a. culture of said bacterium in a suitable medium to obtain a bacterial culture;
b. liquid/solid separation of said culture and removal of the liquid phase;
c. cell lysis of the solid phase,
d. resuspension of the lysed solid phase in an aqueous liquid phase, wherein the aqueous liquid phase is a buffer, in particular a basic buffer selected from Tris buffer, arginine buffer or Tris-arginine buffer,
e. liquid/solid separation and recovery of the liquid phase,
f. optional filtration of the liquid phase,

characterized in that the bacterium is LMB64, deposited at the CNCM on 8 April 2010 under number I-4290.

In another aspect, provided herein is Cosmetic or dermatological composition comprising a bacterial extract and at least one cosmetically or dermatologically acceptable excipient, wherein the bacterial extract is a a non-pathogenic Gram-negative bacterium belonging to the class Betaproteobacteria, subfamily Neisseriaceae, comprising a 16S rRNA comprising sequence SEQ ID NO: 1, or any sequence having at least 80% identity with sequence SEQ ID NO: 1, said bacterial extract being obtained by a process comprising the steps of:

a. culture of said bacterium in a suitable medium to obtain a bacterial culture;
b. liquid/solid separation of said culture and removal of the liquid phase;
c. cell lysis of the solid phase,
d. resuspension of the lysed solid phase in an aqueous liquid phase, wherein the aqueous liquid phase is a buffer, in particular a basic buffer selected from Tris buffer, arginine buffer or Tris-arginine buffer,
e. liquid/solid separation and recovery of the liquid phase,
f. optional filtration of the liquid phase,

characterized in that the bacterium is LMB64, deposited at the CNCM on 8 April 2010 under number I-4290.

In another aspect, provided herein is a use of the dermatological composition as described herein, in the manufacture of a medicament for the prevention, treatment, prevention and treatment of cutaneous neurogenic inflammation.

Claims

1. Use of a bacterial extract of a non-pathogenic Gram-negative bacterium belonging to the class Betaproteobacteria, subfamily Neisseriaceae, comprising a 16S rRNA comprising sequence SEQ ID NO: 1, or any sequence having at least 80% identity with sequence SEQ ID NO: 1 in the manufacture of a medicament for the prevention and/or the treatment of cutaneous neurogenic inflammation, said bacterial extract being obtained by a process comprising the steps of:

a. culture of said bacterium in a suitable medium to obtain a bacterial culture;

b. liquid/solid separation of said culture and removal of the liquid phase;

c. cell lysis of the solid phase,

d. resuspension of the lysed solid phase in an aqueous liquid phase, wherein the aqueous liquid phase is a buffer, in particular a basic buffer selected from Tris buffer, arginine buffer or Tris-arginine buffer,

e. liquid/solid separation and recovery of the liquid phase,

f. optional filtration of the liquid phase,

characterized in that the bacterium is LMB64, deposited at the CNCM on 8 April 2010 under number I-4290.

2. The use of claim 1, characterized in that the bacterium comprises at least one plasmid comprising sequence SEQ ID NO: 2, or any sequence having at least 80% identity with sequence SEQ ID NO: 2.

3. The use according to claim 1 or 2, characterized in that the cutaneous neurogenic inflammation includes sensitive skin and/or intolerant skin.

4. Cosmetic or dermatological composition comprising a bacterial extract and at least one cosmetically or dermatologically acceptable excipient, wherein the bacterial extract is a a non-pathogenic Gram-negative bacterium belonging to the class Betaproteobacteria, subfamily Neisseriaceae, comprising a 16S rRNA comprising sequence SEQ ID NO: 1, or any sequence having at least 80% identity with sequence SEQ ID NO: 1, said bacterial extract being obtained by a process comprising the steps of:

a. culture of said bacterium in a suitable medium to obtain a bacterial culture;

b. liquid/solid separation of said culture and removal of the liquid phase;

c. cell lysis of the solid phase,

d. resuspension of the lysed solid phase in an aqueous liquid phase, wherein the aqueous liquid phase is a buffer, in particular a basic buffer selected from Tris buffer, arginine buffer or Tris-arginine buffer,

e. liquid/solid separation and recovery of the liquid phase,

f. optional filtration of the liquid phase,

characterized in that the bacterium is LMB64, deposited at the CNCM on 8 April 2010 under number I-4290.

5. Cosmetic or dermatological composition according to claim 4, characterized in that it is suitable for topical application.

6. Use of the dermatological composition according to claim 4 or 5, in the manufacture of a medicament for the prevention, treatment, prevention and treatment of cutaneous neurogenic inflammation.

7. The use according to claim 6, characterized in that the cutaneous neurogenic inflammation includes sensitive skin and/or intolerant skin.