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Secretary of Commerce Wilbur Ross today announced the appointment of Laura A. Peter as deputy under secretary of commerce for intellectual property and deputy director of the USPTO.

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Examples:

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ISD	<a href="#">Issue Date</a>	IC	<a href="#">Inventor City</a>
TTL	<a href="#">Title</a>	IS	<a href="#">Inventor State</a>
ABST	<a href="#">Abstract</a>	ICN	<a href="#">Inventor Country</a>
ACLM	<a href="#">Claim(s)</a>	LREP	<a href="#">Attorney or Agent</a>
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ICL	<a href="#">International Classification</a>	AS	<a href="#">Assignee State</a>
APN	<a href="#">Application Serial Number</a>	ACN	<a href="#">Assignee Country</a>
APD	<a href="#">Application Date</a>	EXP	<a href="#">Primary Examiner</a>
PARN	<a href="#">Parent Case Information</a>	EXA	<a href="#">Assistant Examiner</a>
RLAP	<a href="#">Related US App. Data</a>	REF	<a href="#">Referenced By</a>
REIS	<a href="#">Reissue Data</a>	FREF	<a href="#">Foreign References</a>
PRIR	<a href="#">Foreign Priority</a>	OREF	<a href="#">Other References</a>
PCT	<a href="#">PCT Information</a>	GOVT	<a href="#">Government Interest</a>
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Utility -- 5,146,634 6923014 0000001

Design -- D339,456 D321987 D000152

Plant -- PP08,901 PP07514 PP00003

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Defensive Publication -- T109,201 T855019 T100001

Statutory Invention Registration -- H001,523 H001234 H000001

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ABST/porphyrins: 212 patents.

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PAT. NO.	Title
1 <a href="#">10,080,759</a>	<a href="#">Methods of treating pruritus</a>
2 <a href="#">10,010,557</a>	<a href="#">Cobalt porphyrins for the treatment of blood-related disorders</a>
3 <a href="#">9,945,866</a>	<a href="#">Protein standard</a>
4 <a href="#">9,837,611</a>	<a href="#">Photo-switchable fullerene-based materials as interfacial layers in organic photovoltaics</a>
5 <a href="#">9,694,074</a>	<a href="#">Functionalized porous silicon nanoparticles and use thereof in photodynamic therapy</a>
6 <a href="#">9,622,953</a>	<a href="#">Cosmetic use of catalytic oxidation compounds chosen from porphyrins, phthalocyanines and/or porphyrazines as deodorant agent</a>
7 <a href="#">9,517,267</a>	<a href="#">Photodynamic diagnostic agent and photobleaching inhibitor</a>
8 <a href="#">9,488,664</a>	<a href="#">Diagnostic agent for tumor</a>
9 <a href="#">9,340,490</a>	<a href="#">Diagnostic agent for tumor</a>
10 <a href="#">9,326,931</a>	<a href="#">Use of porphyrin-type catalytic oxidation compounds as an anti-dandruff agent</a>
11 <a href="#">9,263,194</a>	<a href="#">Porphyrin-peptoid conjugate and the preparation process thereof</a>
12 <a href="#">9,226,917</a>	<a href="#">Photodynamic therapy for conditions of the eye</a>
13 <a href="#">9,155,791</a>	<a href="#">Metallation enhancements in tumor-imaging and PDT therapy</a>
14 <a href="#">9,113,535</a>	<a href="#">Fusing porphyrins with polycyclic aromatic hydrocarbons and heterocycles for optoelectronic applications</a>

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United States Patent  
Ji, et al.

10,080,759  
September 25, 2018

Methods of treating pruritus

### Abstract

A method of treating pruritus (itching) in a subject in need thereof is carried out by administering the subject an active agent in a treatment effective amount, wherein the active agent is a superoxide dismutase (SOD) mimetic. The SOD mimetic can be a complex of a metal (e.g., manganese) and an organic ligand, with suitable organic ligands including *porphyrins*, polyamines, salens, nitroxides, and fullerenes. Compositions for carrying out such methods are also described.

**Inventors:** Ji; Ru-Rong (Chapel Hill, NC), Liu; Tong (Durham, NC), Batinic-Haberle; Ines (Durham, NC), Warner; David S. (Chapel Hill, NC), Stone; Kimberly C. (Grenwood Village, CO), Crapo; James D. (Englewood, CO)

**Applicant:**

Name	City	State	Country	Type
------	------	-------	---------	------

Duke University	Durham	NC	US	
Biomimetix JV, LLC	Englewood	CO	US	

**Assignee:** Duke University (Durham, NC)  
BioMimetix J.V., LLC (Englewood, CO)

**Family ID:** 53681894  
**Appl. No.:** 15/109,164  
**Filed:** January 21, 2015  
**PCT Filed:** January 21, 2015  
**PCT No.:** PCT/US2015/012228  
**371(c)(1),(2),(4) Date:** June 30, 2016  
**PCT Pub. No.:** WO2015/112586  
**PCT Pub. Date:** July 30, 2015

Prior Publication Data

# Найденные документы

## Prior Publication Data

**Document Identifier**

US 20160324868 A1

**Publication Date**

Nov 10, 2016

## Related U.S. Patent Documents

**Application Number**

61930132

**Filing Date**

Jan 22, 2014

**Patent Number**

**Issue Date**

**Current U.S. Class:**

**Current CPC Class:**

**Current International Class:**

**Field of Search:**

1/1

A61K 31/555 (20130101); A61K 9/0019 (20130101); A61K 9/0014 (20130101); A61K 31/4188 (20130101)

A61K 31/555 (20060101); A61K 9/00 (20060101); A61K 31/4188 (20060101)

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*Primary Examiner:* McCormick; Melenie L  
*Assistant Examiner:* Matos Negron; Taina D  
*Attorney, Agent or Firm:* Myers Bigel, P.A.

*Parent Case Text*

# Найденные документы

## Parent Case Text

### RELATED APPLICATIONS

This application is a 35 U.S.C. § 371 national phase entry of PCT Application PCT/US2015/012228, filed Jan. 21, 2015, and published in English on Jul. 30, 2015, as International Publication No. WO 2015/112586, and which claims the benefit of U.S. Provisional Patent Application Ser. No. 61/930,132, filed Jan. 22, 2014, the disclosure of each of which is incorporated by reference herein in its entirety.

### Claims

That which is claimed is:

1. A method of treating pruritus in skin of a subject in need thereof, comprising administering to said subject an active agent in a treatment effective amount to treat pruritus in said skin of said subject, wherein said administering comprises topically administering to said skin of said subject a composition comprising said active agent in an amount of 0.01% to 1% by weight of said composition, and wherein said active agent is a compound having a structure represented by: ##STR00010## wherein: each R is independently C.sub.1-12 alkyl or --(CH.sub.2).sub.mCH.sub.2OX; m is 1 or 2; X is C.sub.1-12 alkyl; each A is an independently selected hydrogen, halogen, --NO.sub.2, or --CHO; M is manganese, iron, copper, cobalt, nickel or zinc; and Z.sub.- is a counterion; or a pharmaceutically acceptable salt thereof.
2. The method of claim 1, wherein said subject is afflicted with dermal or pruritoceptive itch.
3. The method of claim 1, wherein said subject is afflicted with neuropathic itch.
4. The method of claim 1, wherein said subject is afflicted with neurogenic itch.
5. The method of claim 1, wherein said subject is afflicted with psychogenic itch.
6. The method of claim 1, wherein said active agent has a structure represented by: ##STR00011## wherein: each R is C.sub.1-12 alkyl; each A is, independently, hydrogen, halogen, --NO.sub.2 or --CHO; M is metal selected from the group consisting of manganese, iron, copper, cobalt, nickel and zinc, and Z.sub.- is a counterion.
7. The method of claim 1, wherein said active agent has the structure: ##STR00012## wherein Z.sub.- is a counterion.
8. The method of claim 1, wherein said active agent has a structure represented by: ##STR00013## wherein: each R is --(CH.sub.2).sub.mCH.sub.2OX; m is 1 or 2; X is C.sub.1-12 alkyl; each A is, independently, hydrogen, halogen, --NO.sub.2 or --CHO; M is metal selected from the group consisting of manganese, iron, copper, cobalt, nickel and zinc, and Z.sub.- is a counterion.
9. The method of claim 1, wherein said active agent has the structure: ##STR00014## wherein Z.sub.- is a counterion.
10. The method of claim 1, wherein said composition comprises said active agent in an amount of 0.01% to 0.1% by weight of said composition.
11. The method of claim 1, wherein said administering relieves pruritus in said skin of said subject within 30 minutes of administering said active agent to said skin.
12. The method of claim 1, wherein said administering reduces frequency of scratching a region of said skin within 30 minutes of administering said active agent to said skin.
13. The method of claim 1, wherein said administering reduces urge to scratch a region of said skin within 30 minutes of administering said active agent to said skin.
14. The method of claim 1, wherein said administering relieves pruritus in said skin of said subject within 15 minutes of administering said active agent to said skin.

# Найденные документы

## *Description*

### FIELD OF THE INVENTION

The present invention concerns methods and composition useful for the treatment of Pruritus (itch).

### BACKGROUND OF THE INVENTION

"Itch" is an unpleasant condition on the skin surface, generally defined as a sensation that causes or leads a subject or patient to scratch the area or location on the subject where the sensation is perceived. Chronic itch is a common problem associated with skin disease, systemic disease, metabolic disorders, and other conditions. See generally T. Liu and R.-R. Ji, *Neurosci. Bull.* 28: 145-154 (2012), Numerous different treatments have been suggested. See, e.g., J. Speight, PCT Patent App. WO 97/35573 (Oct. 2, 1997); T. Jung and J. Meingassner, PCT Patent App. WO 2008/129000; and E. Lerner and V. Reddy, US Patent App. US 2011/0184016 (Jul. 28, 2011). Because the consequences of scratching can exacerbate the sensation of itch, and lead to other problems such as infection, there remains a need for new methods and compositions for the treatment of pruritus.

### SUMMARY OF THE INVENTION

A first aspect of the present invention is a method of treating pruritus (itching) in a subject in need thereof, comprising administering the subject a porphyrin active compound or active agent as described herein in a treatment effective amount.

A further aspect of the invention is an active compound as described herein for use in carrying out a method as described herein, or for the preparation of a medicament for carrying out a method as described herein.

The foregoing and other objects and aspects of the present invention are explained in greater detail in the specification set forth below.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows frequency of scratching in chlorquinone-treated mice administered the iron porphyrin FeTnHex-2-Pyp4+.

FIG. 2 shows frequency of scratching in compound 48/48-treated mice administered the iron porphyrin FeTnHex-2-Pyp4+.

FIG. 3 shows frequency of scratching in chlorquinone-treated mice administered the manganese porphyrin MnTnBuOE-2-PyP.sup.5+.

FIG. 4 shows frequency of scratching in compound 48/48-treated mice administered the manganese porphyrin MnTnBuOE-2-PyP.sup.5+.

FIG. 5 shows frequency of scratching in chlorquinone-treated mice administered the the manganese porphyrin MnInHex-2-PyP5+.

FIG. 6 shows frequency of scratching in compound 48/48-treated mice administered the the manganese porphyrin MnTnHex-2-PyP5+.

### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The present invention is primarily concerned with the treatment of human subjects, but the invention may also be carried out on animal subjects, particularly mammalian subjects such as dogs, cats, livestock and horses for veterinary purposes. While subjects may be of any suitable age, the subjects are in some embodiments neonatal, infant, juvenile, adolescent, adult, or geriatric subjects.

"Treat" as used herein refers to any type of treatment that imparts a benefit to a patient or subject matter as described herein, particularly delaying or retarding the onset or progression of the conditions described



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