Abstract: Embodiments of the invention involve treating skin afflictions by the topical or oral use of organophosphates. By effectively reducing or eliminating the population of Demodex mites in affected skin areas and areas where Demodex mites may exist, this treatment achieves a more complete remission of clinical signs and symptoms of the skin afflictions than any previously described method. Embodiments of the invention are useful for treating skin afflictions including common acne, seborrheic dermatitis, perioral dermatitis, an acneform rash, transient acantholytic dermatosis, acne necrotica milliarius, psoriasis, steroid induced dermatitis, primary irritation dermatitis, rosacea and for diagnostic methods thereof.
**INTERNATIONAL SEARCH REPORT**

International application No. PCT/US2014/048420

A. **CLASSIFICATION OF SUBJECT MATTER**

IPC(8) - A01N 57/00 (2014.01)
CPC - A01N 57/00 (2014.09)

According to International Patent Classification (IPC) or to both national classification and IPC

B. **FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - A01N 25/00, 25/04, 25/32, 37/02, 57/00, 65/00; A61K 36/61; A61P 17/00, 17/10, 27/02 (2014.01)
USPC - 424/725, 514/1 14, 514/121, 514/122

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

CPC - A01N 25/00, 25/04, 31/00, 37/02, 53/00, 57/00, 57/12, 57/14, 57/16; A61K 8/00; 8/70, 31/045 (2014.09)

Electronic database consulted during the international search (name of data base and, where practicable, search terms used)

Orbit, Google Patents, Google Scholar, Google, PubMED

C. **DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 2009/0214676 A1 (GAO et al) 27 August 2009 (27.08.2009) entire document</td>
<td>72-75, 80, 83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1-71, 76, 86-94</td>
</tr>
<tr>
<td>Y</td>
<td>LAZARIDOU et al. The potential role of microorganisms in the development of rosacea,&quot; Journal of the German Society of Dermatology, 08 November 2010 (08.11.2010), Vol. 9: Pgs. 21-25, entire document</td>
<td>68-71</td>
</tr>
</tbody>
</table>

* Special categories of cited documents:

  - "A" document defining the general state of the art which is not considered to be of particular relevance
  - "E" earlier application or patent published on or after the international filing date
  - "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  - "O" document referring to an oral disclosure, use, exhibition or other means
  - "P" document published prior to the international filing date but later than the priority date claimed

  - "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
  - "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  - "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
  - "G" document member of the same patent family

Date of the actual completion of the international search 08 October 2014

Date of mailing of the international search report 14 Nov 2014

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer: Blaine R. Copenhaver

PCT Hubdeck: 571-272-4300
PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)
### Box No. II  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. □ Claims Nos.: 
   because they relate to subject matter not required to be searched by this Authority, namely:

2. □ Claims Nos.: 
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. □ Claims Nos.: 84, 85 
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box No. III  Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. □ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. □ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. □ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. □ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- □ The additional search fees were accompanied by the applicant’s protest and, where applicable, the payment of a protest fee.
- □ The additional search fees were accompanied by the applicant’s protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- □ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (July 2009)