Title: COMPOSITIONS AND METHODS FOR DIAGNOSING AND TREATING RETINAL DISEASES

Abstract: The present invention relates generally to the preparation and use of retinoid N-retinylidene-N-retinyl-ethanolamine (A2E) conjugated to a carrier polypeptide and to the preparation and use of antibodies that bind specifically to A2E. The invention relates to the use of A2E conjugates as immunogens or vaccines and to the use of A2E specific antibodies for treatment of ophthalmic diseases. Provided herein are methods for enhancing retinal neuronal cell survival, including photoreceptor cell survival, using antibodies that specifically bind to A2E or by inducing an immune response using an A2E immunoconjugate. Enhancing survival of photoreceptor cells or decreasing accumulation of A2E in the eye using the A2E immunoconjugates or A2E specific antibodies is useful for treatment of ophthalmic diseases such as macular degeneration.
**INTERNATIONAL SEARCH REPORT**

**INVENTION DATA**

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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):

A61K A61P C07D C07K

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

Electronic data base consulted during the international search (name of data base and, where practical, search term used):

EPO-Internal, BEILSTEIN Data, CHEM ABS Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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* Special categories of cited documents:

*A* Document solving the same general state of the art which is not considered to be of particular relevance

*E* Earlier document but published on or after the international filing date

*L* Later document published prior to the international filing date but later than the priority date claimed


*Y* 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


*V* 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.


*A* Document member of the same patent family

Date of the actual completion of the international search: 5 July 2006

Date of mailing of the international search report: 01/08/2006

Name and mailing address of the ISA/Authorized officer:

European Patent Office, P.B. 5818 Patentlaan 2 NL-5200 HV Rifklk

Tel: (+31-70) 340-2340, Tx: 51 651 epo nl, Fax: (+31-70) 340-3016

MATES VALDIVIELSO, J.

Form: PCT/S/3010 (Second sheet) (April 2003)
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# INTERNATIONAL SEARCH REPORT

## Box 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. **X** Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
   
   Although claims 96-120 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

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.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box 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 an additional fee, this Authority did not invite payment of any additional fee.

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.
- **☐** No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (January 2004)
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