(54) Title: DIAGNOSTICS AND THERAPEUTICS FOR GLAUCOMA

(57) Abstract:
The invention provides methods and compositions for diagnosing and treating glaucoma by detecting alterations in the Wnt signaling pathway-including changes in the level or bioactivity of frizzled related protein. The invention further provides methods for screening for anti-glaucomatous compounds by detecting a Wnt pathway component such as a frizzled related protein, as well as methods for predicting or diagnosing glaucoma based upon the detection of a genetic alteration in a Wnt pathway component gene.
ABSTRACT

The invention provides methods and compositions for diagnosing and treating glaucoma by detecting alterations in the Wnt signaling pathway—including changes in the level or bioactivity of frizzled related protein. The invention further provides methods for screening for anti-glaucomatous compounds by detecting a Wnt pathway component such as a frizzled related protein, as well as methods for predicting or diagnosing glaucoma based upon the detection of a genetic alteration in a Wnt pathway component gene.
DEMANDES OU BREVETS VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVETS COMPREND PLUS D'UN TOME.

CECI EST LE TOME __2__ DE __2__

NOTE: Pour les tomes additionels, veillez contacter le Bureau Canadien des Brevets.

JUMBO APPLICATIONS / PATENTS

THIS SECTION OF THE APPLICATION / PATENT CONTAINS MORE THAN ONE VOLUME.

THIS IS VOLUME __2__ OF __2__

NOTE: For additional volumes please contact the Canadian Patent Office.
SEQUENCE LISTING

GENERAL INFORMATION:
APPLICANT: ALCON, INC. and THE UNIVERSITY OF IOWA RESEARCH FOUNDATION
TITLE OF INVENTION: Diagnostics and Therapeutics for Glaucoma
NUMBER OF SEQUENCES: 3

CORRESPONDENCE ADDRESS:
ADRESSEE: RICHES, MCKENZIE & HERBERT LLP
STREET: 2 BLOOM STREET EAST, SUITE 1800
CITY: TORONTO, ONTARIO, CANADA, M4W 3J5

COMPUTER READABLE FORM:
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: DOS
SOFTWARE: ASCII TEXT

CURRENT APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE: 26 February 2001
CLASSIFICATION: A61K 38/00, 31/70, 39/395, A01K 67/027, C12N 15/00, AG1P 27/06, C12N 9/00, C07K 14/47

PRIOR APPLICATION DATA:
APPLICATION NUMBER: UNITED STATES 60/186,073
FILING DATE: 29 February 2000

PATENT AGENT INFORMATION:
NAME: RICHES, MCKENZIE & HERBERT LLP
REFERENCE NUMBER: P4311

INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 4469
TYPE: DNA
STRANDEDNESS:

TOPOLOGY:

MOLECULE TYPE:

HYPOTHETICAL:

ANTI-SENSE:

FRAGMENT TYPE:

ORIGINAL SOURCE: Homo Sapiens

IMMEDIATE SOURCE:

POSITION IN GENOME:

CHROMOSOME/SEGMENT:

MAP POSITION:

UNITS:

FEATURE:

NAME/KEY:

LOCATION:

IDENTIFICATION METHOD:

OTHER INFORMATION:

PUBLICATION INFORMATION:

AUTHOR:

TITLE:

JOURNAL:

VOLUME:

ISSUE:

PAGES:

DATE:

DOCUMENT NUMBER: WO 01/64949 A2

FILING DATE: 26 February 2001

PUBLICATION DATE: 07 September 2001

RELEVANT RESIDUES IN SEQ ID NO.:
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INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:

LENGTH: 313
TYPE: PRT
STRANDEDNESS:
TOPOLOGY:
MOLECULE TYPE:
HYPOTHETICAL:
ANTI-SENSE:
FRAGMENT TYPE:
ORIGINAL SOURCE: Homo Sapiens
IMMEDIATE SOURCE:
SEQUENCE DESCRIPTION: SEQ ID NO: 2:

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  FRAGMENT TYPE:
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    CHROMOSOME/SEGMENT:
    MAP POSITION:
    UNITS:
  FEATURE:
    NAME/KEY:
    LOCATION:
    IDENTIFICATION METHOD:
    OTHER INFORMATION:
  PUBLICATION INFORMATION:
    AUTHOR:
    TITLE:
    JOURNAL:
    VOLUME:
    ISSUE:
    PAGES:
    DATE:
DOCUMENT NUMBER: WO 01/64949 A2
FILING DATE: 26 February 2001
PUBLICATION DATE: 07 September 2001
RELEVANT RESIDUES IN SEQ ID NO.:  

SEQUENCE DESCRIPTION: SEQ ID NO: 3:

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tataagcccag ttcaacctga caactttacc cttctttgcc aatgtacagg aagtagttct 240
DEMANDES OU BREVETS VOLUMINEUX

LA PRÉSENTE PARTIE DE CETTE DEMANDE OU CE BREVETS COMPREND PLUS D'UN TOME.

CECI EST LE TOME _2_ DE _2_

NOTE: Pour les tomes additionnels, veillez contacter le Bureau Canadien des Brevets.

JUMBO APPLICATIONS / PATENTS

THIS SECTION OF THE APPLICATION / PATENT CONTAINS MORE THAN ONE VOLUME.

THIS IS VOLUME _2_ OF _2_

NOTE: For additional volumes please contact the Canadian Patent Office.
WE CLAIM:

1. A method for screening for a frizzled related protein agonist or antagonist comprising the steps of:

   a) combining a frizzled related protein, polypeptide, or bioactive fragment thereof, a frizzled related protein binding partner and a test compound under conditions wherein, but for the test compound, the frizzled related protein and frizzled related protein binding partner are able to interact; and

   b) detecting the extent to which a frizzled related protein/frizzled related protein binding partner complex is formed in the presence of the test compound, wherein an increased amount of complex formation in the presence of the test compound relative to in the absence of a test compound indicates that the test compound is a frizzled related protein agonist and a decreased amount of complex formation in the presence of the test compound relative to in the absence of the test compound indicates that the test compound is a frizzled related protein antagonist.

2. A method of claim 1, which additionally comprises the step of preparing a pharmaceutical composition from the test compound.
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FIGURE 1 (con't)
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FIGURE 2
(a) FRP-blocked Cell

(b) Wnt-stimulated Cell

FIGURE 3