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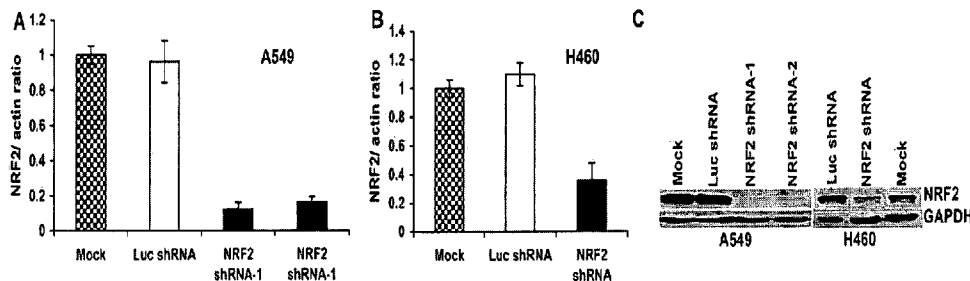
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(54) Title: METHODS AND COMPOSITIONS FOR THE TREATMENT OF CANCER

Figure 1



(57) Abstract: The instant invention provides methods and compositions for the treatment of cancer.

WO 2008/124660 A3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/59520

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A01N 43/04; A61K 31/70; G01N 33/574 (2008.04)

USPC - 514/44; 435/7.23

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)

USPC: 514/44; 435/7.23

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
USPC: 435/6, 69.4, 320.1; 514/12; 530/324, 350; 536/23.2 (see search terms below)

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

Electronic Databases Searched: USPTO WEST (PGPUB, EPAB, JPAB, USPT), Google Patent, Google Scholar. Search Terms Used: Nrf2 inhibit\$, benzyhydrazine, cloxyquin, lung or breast or pro\$, inhibitor and efrapreptins or benzyhydrazine or cloxyquin or quinolone or mecarbam,

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2007/0042418 A1 (Yehiely et al.) 22 February 2007 (22.02.2007) para [0101], [0212]	1-7 and 46-49
Y	US 2005/0084490 A1 (Adams et al.) 21 April 2005 (21.04.2005) para [0023], [0043], [0045], [0212]-[0213], [0263]	1-7 and 46-49
A	Jeong et al. Nrf2: A Potential Molecular Target for Cancer Chemoprevention by Natural Compounds. Antioxidants & Redox Signaling, 2006, Vol 8, No 1-2, pp 99-106	1-7 and 46-49

 Further documents are listed in the continuation of Box C. 

\* 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 but 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

18 September 2008 (18.09.2008)

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Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/59520

**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.:  
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:

-----see extra sheet-----

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.:  
1-7 and 46-49

- 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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/59520

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group 1: claims 1-7 and 46-49 directed to inhibitors of Nrf2 and pharmaceutical compositions comprising said inhibitors.

Group 2: claims 8-12 directed to a method for identifying inhibitors of Nrf2.

Group 3: claims 13-37 directed to methods of treating a subject having a cell proliferative disorder with an inhibitor of Nrf2.

Group 4: claims 38-45 directed to a method of determining if a subject is at risk of becoming resistant to an anticancer treatment comprising determining if a subject has a mutation in the KEAP1 gene.

Group 5: claims 50-51 directed to a kit for identifying an inhibitor of Nrf2.

The inventions listed as Groups 1-5 do not relate to a single general inventive concept under PCT Rule 13.1 because under PCT Rule 13.2 they lack the same or corresponding technical features for the following reasons:

The special technical feature of Groups 1 and 3 is compound(s) which are capable of inhibiting Nrf2 and methods of their use to provide treatment for cancer, which is not present in Group 2 that has a special technical feature of a method for identifying compounds which may be inhibitors of Nrf2 using luciferase transfected cells, Group 4 that has a special technical feature of a method for determining a subject's risk for becoming resistant to an anticancer treatment, or Group 5 that has a special technical feature of a kit for identifying an inhibitor of Nrf2. Furthermore, the special technical feature of Groups 1 and 3 does not represent an improvement over the prior art of JEONG et al. (*Nrf2: A Potential Molecular Target for Cancer Chemoprevention by Natural Compounds in Antioxidants & Redox Signaling*, 2006, vol 8 pg 99-106). Accordingly, unity of invention is lacking under PCT Rule 13 because the groups do not share a same or corresponding special technical feature.