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*A61K 31/437* (2006.01)    *A61P 35/00* (2006.01)
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- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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- Published:**
- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- with sequence listing part of description (Rule 5.2(a))
- (88) **Date of publication of the international search report:**  
3 January 2013

(54) **Title:** SMALL MOLECULE TRAIL GENE INDUCTION BY NORMAL AND TUMOR CELLS AS AN ANTICANCER THERAPY

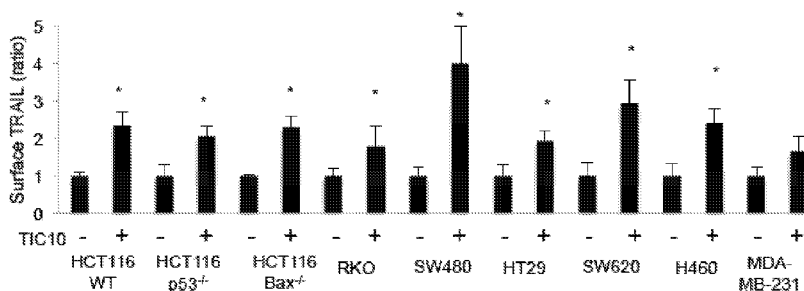


FIG. 3

(57) **Abstract:** Methods and compositions relating to TIC10 are described according to aspects of the present invention. The compositions and methods have utility in treating disease, particularly cancer in a subject in need thereof, including a human subject as well as subjects of other species. The compositions have utility in treating brain cancer in a subject in need thereof.



**A. CLASSIFICATION OF SUBJECT MATTER***A61K 31/519(2006.01)i, A61K 31/437(2006.01)i, A61K 31/4164(2006.01)i, A61P 35/00(2006.01)i*

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 31/519; C07D 409/12; A61K 31/496; A61K 31/454; A61K 31/506

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal), Google &amp; PubMed

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	DE 2150062 A1 (BOEHRINGER SOHN INGELHEIM) 12 April 1973 See table, example No. 14; claims 1, 17.	1,2,8,21 3-7,20
A	WO 03-055489 A1 (BAYER CORPORATION) 10 July 2003 See claims 1-6; page 11, line 8.	1-8,20,21
A	US 2008-0004286 A1 (WANG, Y. et al.) 03 January 2008 See claims 1-5, 10.	1-8,20,21
PX	ALLEN, J. E. et al., "Potent anti-tumor effects of TIC10 require Foxo3a and TRAIL gene upregulation", Cancer Res., 15 April 2012, Vol. 72, No. 8, Suppl. 1. See the whole document.	1-8,20,21

 Further documents are listed in the continuation of Box C. See patent family annex.

\* 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 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

25 OCTOBER 2012 (25.10.2012)

Date of mailing of the international search report

**29 OCTOBER 2012 (29.10.2012)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
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**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.: 9-19, 23  
because they relate to subject matter not required to be searched by this Authority, namely:  
Claims 9-19, 23 pertain to methods for treatment of the human body by therapy, as well as diagnostic methods, and thus relate to a subject matter which this International Searching Authority is not required to search under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT.
2.  Claims Nos.: 22, 23  
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:  
Claims 22, 23 could be made meaningful search because "substantially as described herein" is vague and unclear and leave there reader in doubt as the meaning of the technical feature to which they refer, thereby rendering the definition of the subject-matter of the claims unclear.
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:

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 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**

Information on patent family members

International application No.

**PCT/US2012/035831**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03-055489 A1	10.07.2003	AU 2002-367172 A1 WO 0305-5489A1	15.07.2003 10.07.2003
US 2008-0004286 A1	03.01.2008	CA 2656393 A1 CL 19202007 A1 CN 101511361 A EP 2037919 A2 JP 2009-542664 A MX 2009000132 A TW 200811139 A WO 2008-005266 A2 WO 2008-005266 A3	10.01.2008 22.02.2008 19.08.2009 25.03.2009 03.12.2009 26.01.2009 01.03.2008 10.01.2008 22.05.2008