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- (54) Title: METHODS AND COMPOSITIONS FOR TARGETING C-REL
- (57) Abstract: The present invention relates to compositions and methods for targeting c-Rel. In particular, the present invention provides compositions and methods for treating cancers, inflammatory diseases, autoimmune diseases, and transplant rejection by inhibiting c-Rel activity and for regulating c-Rel for research and drug screening applications.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/09163

A. CLASSIFICATION OF SUBJECT MATTER

IPC: C12Q 1/68(2006.01);C12P 19/34(2006.01);C12N 15/63(2006.01),15/88(2006.01);C07H 21/02(2006.01),21/04(2006.01);A01N 43/04(2006.01)

USPC: 435/6,91.1,91.31,455;514/44;536/23.1,24.5

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)
U.S. : 435/6, 91.1, 91.31, 455; 514/44; 536/23.1, 24.5

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 practicable, search terms used)
West, Dialog, Seq Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2004/027063 (GALY et al) 01 April 2004, pages 1-8, claims 1-10	1-3, 12-23, 27, 30-45
Y	US 6,506,559 A (FIRE et al) 14 January 2003, col. 1-5, claims 1-46, 10, 11.	1-3, 12-23, 27, 30-45

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	"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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"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
"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	"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

International application No.

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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.:
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:
Please See Continuation 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 any 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.: 1-3,12-23,27 and 30-45
- 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/US07/09163

BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

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.

The inventions listed as Groups 1 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 special technical features for the following reasons: 1.

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.

The inventions listed as Groups 1-32 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 special technical features for the following reasons:

Claims 1-3, 12-23, 27, and 30-45 are generic. Claims 4, 5, 46, 47, 58, and 59 include 19 different polynucleotide sequences. Claims 28 and 29 include 8 different target sequences. Claims 6-11, and 48-57 include 22 small molecule inhibitors. Claims 24-26 comprise 11 different biological interaction interrupting agents, C-rel modification inhibitors and conformational inhibitors.

Each polynucleotide sequence, target sequence, small molecule inhibitor, modification, conformational and biological interaction interrupting agent comprises a separate invention.

SEQ ID No. 6, listed in claims 4, 46, and 58, and encompassed by claims 1-3, 12-23, 27, 30-45, comprise the first invention.

SEQ ID Nos. 10, 13, 17-26, target genes, small molecule inhibitors, modification inhibitors, biological interaction interrupting agents, and conformational inhibitors of claims 511, 24-26, 28, 29, 47-57, and 59 comprise the second through the 60th invention.

This international searching authority considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2, and 13.3) for the reasons indicated below:

According to the guidelines in Section (f)(i)(a) of Annex B of the PCT Administrative Instructions, the special technical feature as defined by PCT Rule 13.2 shall be considered to be met when all the alternatives of a Markush-group are of similar nature. For chemical alternatives, such as the claimed nucleotide and polypeptide sequences, small molecule inhibitors and other biological modulating agents in each of the Markush groups shall be regarded as being of similar nature when

(A) all alternatives have a common property or activity and

(B)(1) a common structure is present, i.e. a significant structure is shared by all of the alternatives or

(B)(2) in cases where the common structure cannot be the unifying criteria, all alternatives belong to an art recognized class of compounds in the art to which the invention pertains.

The instant sequences, biological agents and molecular structures are considered to be each separate inventions for the following reasons:

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The various nucleotide sequences do not meet the criteria of (A), common property or activity or (B)(2), art recognized class of compounds. Each sequence behaves in a different way in the context of the claimed invention. Each member of the class cannot be substituted, one for the other, with the expectation that the same intended result would be achieved.

Further, the sequences and other modulating agents do not meet the criteria of (B)(1), as they do not share, one with another, a common core structure. Accordingly, unity of invention between the different sequences is lacking and each sequence claimed is considered to constitute a special technical feature.

For PCTs: If the sequences or other modulators are recited in the first claimed invention, Applicants will obtain a search of the first sequence or agent listed in the claim. For every other sequence or modulating agent applicants wish to have searched, applicants need to elect the sequence or structure or agent and pay an additional fee.

If the sequences, etc. are recited in the second or subsequent claimed invention, Applicants will need to elect the group and pay the fee to obtain a search of the first sequence or structure or agent listed in the claims encompassed by the second or subsequent group. For every other sequence, agent or structure in the second/subsequent group that applicants wish to have searched, applicants need to elect the modulating entity and pay an additional fee.