



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>6</sup> : C12N 15/12, C07K 14/47, 16/18, C12N 5/10, G01N 33/50, 33/68</p>	<p>A3</p>	<p>(11) International Publication Number: <b>WO 99/64450</b></p> <p>(43) International Publication Date: 16 December 1999 (16.12.99)</p>
<p>(21) International Application Number: PCT/US99/13143</p> <p>(22) International Filing Date: 11 June 1999 (11.06.99)</p> <p>(30) Priority Data: 60/089,198 12 June 1998 (12.06.98) US 60/111,636 9 December 1998 (09.12.98) US</p> <p>(71) Applicant: CHIRON CORPORATION [US/US]; 4560 Horton Street, Emeryville, CA 94608-2916 (US).</p> <p>(72) Inventor: KAUFMANN, Joerg; 4560 Horton Street, Emeryville, CA 94608-2916 (US).</p> <p>(74) Agents: POTTER, Jane, E., R.; Chiron Corporation, Intellectual Property-R338, P.O. Box 8097, Emeryville, CA 94662-8097 (US) et al.</p>	<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 3 February 2000 (03.02.00)</p>	
<p>(54) Title: CIF130 INHIBITS CELL CYCLE PROGRESSION</p> <p>(57) Abstract</p> <p>A human gene termed <i>CIF130</i> and its expression products can alter the spatial or temporal patterns of mitosis or cell cycle progression of a human cell. Methods of treating disorders involving alterations in the regulation of mitosis or cell cycle progression utilize the gene and its expression product. Genes whose expression is dependent upon <i>CIF130</i> expression can be identified.</p>		

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INTERNATIONAL SEARCH REPORT

In tional Application No  
PCT/US 99/13143

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/12 C07K14/47 C07K16/18 C12N5/10 G01N33/50  
G01N33/68

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)

IPC 6 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 terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	SUKEGAWA ET AL.: "A putative mammalian RNA helicase with arginine-serine-rich domain colocalizes with a splicing factor" EMBL SEQUENCE DATABASE, 1 November 1996 (1996-11-01), XP002123005 HEIDELBERG DE Ac Q62780 the whole document & SUKEGAWA ET AL.: "A putative mammalian RNA helicase with arginine-serine-rich domain colocalizes with a splicing factor" J. BIOL. CHEM., vol. 270, 1995, pages 15702-15706, --- -/--	1,3
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Further documents are listed in the continuation of box C.

Patent family members are listed in 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 document but published on or after the international filing date  
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"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

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"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.  
"&" document member of the same patent family

Date of the actual completion of the international search

19 November 1999

Date of mailing of the international search report

03/12/1999

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INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 99/13143

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KAUFMANN J ET AL: "CIF, an essential cofactor for TFIID-dependent initiator function" GENES AND DEVELOPMENT, US, COLD SPRING HARBOR, NY, vol. 10, no. 7, 1 April 1996 (1996-04-01), pages 873-886, XP002106713 ISSN: 0890-9369	
A	KAUFMANN J ET AL: "CIF150, a human cofactor for transcription factor IID-dependent initiator function" MOLECULAR AND CELLULAR BIOLOGY, US, WASHINGTON, DC, vol. 18, no. 1, 1998, pages 233-239, XP002106714 ISSN: 0270-7306 cited in the application	
P, X	SUK ET AL.: "A novel human cDNA homologous to RNA helicase genes" EMBL SEQUENCE DATABASE, 1 November 1998 (1998-11-01), XP002123006 HEIDELBERG DE Ac 075619 the whole document	1,3
E	WO 99 33985 A (CHIRON CORP) 8 July 1999 (1999-07-08) the whole document see especially Seq. Id. No. 4	1-21

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 99/13143

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 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.: 17-19  
because they relate to subject matter not required to be searched by this Authority, namely:  
Rule 39.1(iv) PCT- Diagnostic method practised on the human or animal body  
As far as claims 17-19 are directed to a diagnostic method practised on 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 II Observations where unity of invention is lacking (Continuation of item 2 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.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

Continuation of Box I.1

As far as claims 17-19 are directed to a diagnostic method practised on the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

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Continuation of Box I.1

Rule 39.1(iv) PCT - Diagnostic method practised on the human or animal body

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/13143

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9933985 A	08-07-1999	AU 1948399 A	19-07-1999