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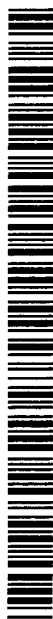
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(54) Title: METHODS FOR ENHANCING THE EXPRESSION OF A PROTEIN OF INTEREST BY RECOMBINANT HOST
CELLS

(57) Abstract: The increased use of nucleotide sequence data mining techniques has amplified the demand for efficient methods of
producing recombinant proteins in eukaryotic cells. A strategy is provided for enhancing the synthesis of recombinant amino acid
sequences by polymerizing expression cassettes *in vitro* before producing recombinant hosts.

INTERNATIONAL SEARCH REPORT

International Application No PCT/US 01/13326

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C12N15/66 C12N15/67 C12N15/85 C12P21/02

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 7 C12N C12P

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)
 EPO-Internal, WPI Data, PAJ, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HITOSHI IKEDA ET AL: "MULCOS: A VECTOR FOR AMPLIFICATION AND SIMULTANEOUS EXPRESSION OF TWO FOREIGN GENES IN MAMMALIAN CELLS" GENE, ELSEVIER BIOMEDICAL PRESS. AMSTERDAM, NL, vol. 71, no. 1, 15 November 1988 (1988-11-15), pages 19-27, XP000000302 ISSN: 0378-1119 cited in the application	1-6, 8-13, 15-20
Y	page 20, left-hand column, line 1 -page 23, left-hand column, line 11; figures 1,2 --- -/--	7,14,16, 19

Further documents are listed in the continuation of box C. Patent family members are listed in annex.

° Special categories of cited documents :

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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Madruga, J
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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>MONACO LUCIA ET AL: "An in vitro amplification approach for the expression of recombinant proteins in mammalian cells." BIOTECHNOLOGY AND APPLIED BIOCHEMISTRY, vol. 20, no. 2, 1994, pages 157-171, XP001053058 ISSN: 0885-4513 cited in the application</p>	1,8-13, 15,17, 18,20
Y	<p>page 158, paragraph 1 -page 160, paragraph 2; figure 2 page 162, paragraph 1 -page 163, paragraph 2</p>	2
X	<p>--- ASSELBERGS F A M ET AL: "GENE CASSETTES FOR DIRECTIONAL INSERTION AT THE S L CLEAVAGE SITE IN THE SV40 REPLICATION ORIGIN OF MAMMALIAN EXPRESSION VECTORS" ANALYTICAL BIOCHEMISTRY, ACADEMIC PRESS, SAN DIEGO, CA, US, vol. 243, no. 2, 1996, pages 285-288, XP000872270 ISSN: 0003-2697 cited in the application the whole document</p>	1,8-13, 15,17, 18,20
Y	<p>--- US 5 238 820 A (KAUFMAN RANDAL J) 24 August 1993 (1993-08-24) cited in the application column 3, line 26-68; examples 1,2 column 5, line 33 - line 47</p>	2,7,16, 19
Y	<p>--- US 4 403 036 A (HARTLEY JAMES L ET AL) 6 September 1983 (1983-09-06) cited in the application the whole document</p>	14
A	<p>--- SZYBALSKI W ET AL: "CLASS-IIS RESTRICTION ENZYMES - A REVIEW" GENE, ELSEVIER BIOMEDICAL PRESS, AMSTERDAM, NL, vol. 100, 1991, pages 13-26, XP002074512 ISSN: 0378-1119 cited in the application page 22, left-hand column, paragraph 2; figure 8</p>	1-20
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INTERNATIONAL SEARCH REPORT

International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>TAKESHITA S ET AL: "TANDEM GENE AMPLIFICATION IN-VITRO FOR RAPID AND EFFICIENT EXPRESSION IN ANIMAL CELLS" GENE (AMSTERDAM), vol. 71, no. 1, 1988, pages 9-18, XP001042341 ISSN: 0378-1119 cited in the application the whole document</p> <p style="text-align: center;">---</p>	1-20
A	<p>KIM S C ET AL: "AMPLIFICATION OF CLONED DNA AS TANDEM MULTIMERS USING BSPMI-GENERATED ASYMMETRIC COHESIVE ENDS" GENE (AMSTERDAM), vol. 71, no. 1, 1988, pages 1-8, XP002188576 ISSN: 0378-1119 cited in the application page 4, right-hand column, line 19 - line 40; figure 3 page 2, left-hand column, paragraph 2 -right-hand column, paragraph 1 page 7, right-hand column, line 21 - line 43</p> <p style="text-align: center;">-----</p>	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

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