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| 0325657.5 | 4 November 2003 (04.11.2003) | GB |
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(54) Title: NUCLEIC ACID SEQUENCING METHODS, KITS AND REAGENTS

(57) Abstract: The present invention relates to nucleic acid sequencing methods, kits and reagents, and more particularly to methods of sequencing nucleic acid which employ a nucleic acid processing enzyme and one or more nucleotide analogues that are capable of binding to the active site of the enzyme and to complementary bases in the nucleic acid molecule being sequenced, but which are non-incorporable or inhibitors of the nucleic acid processing enzyme. In further aspects, the present invention relates to conjugates which comprise a deoxyribonucleotide triphosphates (DNTPs) or an analogue thereof linked to an intercalating dye.



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INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/000709

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12Q1/68 C07H19/00

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 C12Q C07H

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, MEDLINE, EMBASE, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 147 199 A (SEELA FRANK ET AL) 14 November 2000 (2000-11-14) claims 1-4	1-12, 14-28
X	WO 99/14226 A (WENGEL JESPER ; EXIQON A S (DK); NIELSEN POUL (DK)) 25 March 1999 (1999-03-25) claims 60-66,100; examples 140,141	1-12, 14-28
X	WO 00/56748 A (WENGEL JESPER ; EXIQON A S (DK)) 28 September 2000 (2000-09-28) page 40, line 22 - line 26; claims 31,47	1-28
X	US 2002/160972 A1 (GUINOSSO CHARLES JOHN ET AL) 31 October 2002 (2002-10-31) claims 1-5	1-9
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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
- "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.
- "&" document member of the same patent family

Date of the actual completion of the international search

21 July 2004

Date of mailing of the international search report

15. 11. 2004

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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.
P,X	WO 03/051901 A (PEDERSEN ERIK BJERREGAARD ; UNEST AS (DK); CHRISTENSEN ULF BECH (DK)) 26 June 2003 (2003-06-26) the whole document	1-28
A	----- WO 00/50172 A (CHOW ANDREA W ; BOUSSE LUC J (US); GALLAGHER STEVE (US); KNAPP MICHAEL) 31 August 2000 (2000-08-31) the whole document -----	1-28

INTERNATIONAL SEARCH REPORT

International application No.

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. type of material
 - a sequence listing
 - table(s) related to the sequence listing
 - b. format of material
 - in written format
 - in computer readable form
 - c. time of filing/furnishing
 - contained in the international application as filed
 - filed together with the international application in computer readable form
 - furnished subsequently to this Authority for the purpose of search
2. In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
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Box 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 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 additional 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 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.:

1-28

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

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-28

Conjugates comprising a deoxyribonucleotide triphosphate (DNTP) or a DNTP analogue and an intercalating dye, kits containing them and uses thereof.

2. claims: 29-70

Method and kits for determining the sequence of one or more nucleic acid bases of a nucleic acid template molecule using a nucleic acid processing enzyme characterized by the use of an inhibitor of said nucleic acid processing enzyme (a non-incorporable nucleotide analogues).

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2004/000709

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Information on patent family members

International Application No

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