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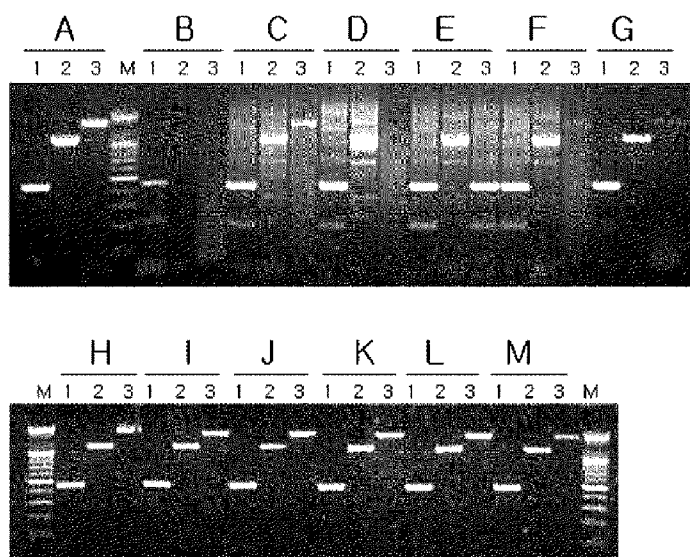
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- with international search report (Art. 21(3))
- with sequence listing part of description (Rule 5.2(a))

[Continued on next page]

(54) Title: COMPOSITION FOR HOT-START PCR COMPRISING BLOCKING OLIGONUCLEOTIDE

[Fig. 2]



(57) Abstract: The present invention relates to a composition for hot-start PCR, more precisely a composition for hot-start PCR characteristically prepared by adding the blocking oligonucleotide having the hydroxyl group at 3'-end blocked and the nucleotide sequence complementary to the primer to the conventional PCR composition containing reaction buffer, $MgCl_2$, 4 kinds of dNTP, and DNA polymerase. The composition for hot-start PCR of the present invention can give more authentic PCR results by inhibiting smear band of PCR amplification product caused by non-specific reaction or primer-dimer formation at low temperature since the blocking oligonucleotide included therein can be dissociated at the lower temperature than melting temperature of the primer.



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A. CLASSIFICATION OF SUBJECT MATTER*C12Q 1/68(2006.01)i, C12N 15/11(2006.01)i, C12Q 1/48(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)

C12Q 1/68

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)

PubMed

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	LEBEDEV, A. V. et al. Hot start PCR with heat-activatable primers: a novel approach for improved PCR performance. Nucleic Acids Research. November 2008, Vol. 36, No. 20, page e131. See figure 1 and abstract.	1-15
A	ASHRAFI, E. H. et al. Improved PCR specificity with Hot Start PCR primers. BioTechniques. September 2009, Vol. 47, No. 3, pages 789-790. See introduction.	1-15
A	VESTHEIM, H. et al. Blocking primers to enhance PCR amplification of rare sequences in mixed samples- a case study on prey DNA in Antarctic krill stomachs. Frontiers in Zoology. 20 July 2008, Vol. 5, No. 12. See figure 1 and results.	1-15
A	CRADIC, K. W. et al. Substitution of 3'-phosphate cap with a carbon-based blocker reduces the possibility of fluorescence resonance energy transfer probe failure in real-time PCR assays. Clinical Chemistry. June 2004, Vol. 50, No. 6, pages 1080-2. See pages 1081-1082.	1-15



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

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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

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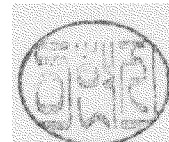
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2012/001387

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CHOU, Q. et al. Prevention of pre-PCR mis-priming and primer dimerization improves low-copy-number amplifications. Nucleic Acids Res. 11 April 1992, Vol. 20, No. 7, pages 1717-1723. See abstract.	1-15

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2012/001387

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

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of:

a. a sequence listing filed or furnished

☐

on paper

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in electronic form

b. time of filing or furnishing

☒

contained in the international application as filed

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filed together with the international application in electronic form

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furnished subsequently to this Authority for the purposes of search

2. ☐ In addition, in the case that more than one version or copy of a sequence listing 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

Information on patent family members

International application No.

PCT/KR2012/001387Patent document
cited in search reportPublication
datePatent family
member(s)Publication
date

None