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(54) Title: COMPOSITIONS AND METHODS EMPLOYING 5'-PHOSPHATE-DEPENDENT NUCLEIC ACID EXONUCLEASES

(57) Abstract: The present invention relates to compositions and methods employing 5'-phosphate-dependent nucleic acid exonucleases. In particular, the present invention provides kits and methods employing 5'-phosphate-dependent nucleic acid exonucleases for selective enrichment, isolation and amplification of a particular set of desired nucleic acid molecules from samples that also contain undesired nucleic acid molecules for a variety of uses. In preferred embodiments, the desired nucleic acid molecules comprise prokaryotic and/or eukaryotic mRNA.



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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER
 IPC: C12P 19/34(2006.01)

USPC: 435/91.1,435/91.2
 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. : 435/91.1,435/91.2

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	STEVENS, A. 5'-Exoribonuclease 1: Xrn1,. Methods In Enzymology. 2001, Vol. 342, pages 251-259, entire document.	1, 20, 21, 40, 41
Y	STEVENS, A. An exoribonuclease from Saccharomyces Cerevisiae: Effect of modifications of 5' end groups on the hydrolysis of substrates to 5' mononucleotides. Biochem.and Biophy. Res. Comm. 1978, Vol.81(2), pages 656-661, entire document.	1,4,5,9,11,14, 21-22, 25, 30
Y	MURTHY, et al. A nuclear micrococcal-sensitive, ATP-dependent exoribonuclease degrades uncapped but not capped RNA substrates. Nucleic Acids Research. 1991, Vol. 19, No.10, pages 2685-2692, entire document.	1,2,9,11,14, 21-37, 39-41.
Y	WO 03/020979: A1 (SHOEMAKER) 13 March 2003 (13.03.2003), pages 6-10, 14.	2,3,13,15-19

Further documents are listed in the continuation of Box C. See patent family annex.

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"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
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"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
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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.
Y	KWOH, D.Y. et al. Transcription-based amplification system and detection of amplified human immunodeficiency virus type 1 with a bead-based sandwich hybridization format. Proc. Natl. Acad. Sci. February 1989, Vol. 86, pages 1173-1177, entire document.	2, 13, 15-19
Y	VAN GELDER et al. Amplified RNA synthesized from limited quantities of heterogeneous cDNA. Proc. Natl. Acad. Sci. March 1990, Vol. 87, pages 1663-1667, entire document.	2, 4, 5, 13, 15-16.
Y	WOLFGANG et al. Large and Small scale RNA preparations from Eukaryotic Cells. Methods in Molecular Biology. 1998, Vol. 86, pages 7-14, entire document.	2, 4-8
Y	US 6,114,152 A (SERAFINI et al.) .5 September 2000 (05.09.2000), Figure 1, columns 2-4.	10, 12-13, 15-19
Y	BD Biosciences, "BD Smart mRNA amplification Kit,". In : Clontechiques. October 2003, entire document.	21-41