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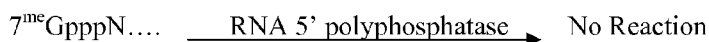
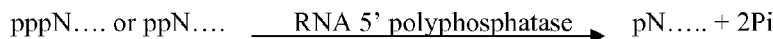
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(54) **Title:** RNA POLYPHOSPHATASE COMPOSITIONS, KITS, AND USES THEREOF

FIGURE 1

Examples of Reactions Catalyzed by RNA 5' Polyphosphatase



N = RNA, DNA, NTPs, NDPs, dNTPs, dNDPs

(57) **Abstract:** The present invention relates to the discovery of RNA 5' polyphosphatase enzymes not previously described in the art, methods for discovery of said enzymes, compositions of said enzymes, methods for making said enzymes, and various methods and kits for using said enzymes for biomedical research, for human and non-human diagnostics, for production of therapeutic products, and for other applications. In particular, some embodiments provide compositions, kits and methods for employing RNA polyphosphatases for isolation, purification, production, and assay of capped RNA using a biological sample or a sample from an *in vitro* capping reaction wherein the sample also contains RNA that is not capped. Other embodiments provide compositions, kits and methods wherein RNA polyphosphatases comprise signal-amplifying enzymes for analyte-specific assays.



WO 2009/135214 A3

A. CLASSIFICATION OF SUBJECT MATTER*C12N 9/14(2006.01)i, C12Q 1/42(2006.01)i, C12Q 1/68(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)

IPC: C12N, C12Q

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)

e-KOMPASS(KIPO Internal), PubMed, Google.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X Y	GenBank Accession No. CP000800 (2007.09.11)	1-18, 21-23, 59-66 26-28, 52-58
Y	US 2002/0018774 A1 (SIMON GREEN et al.) Feb. 14, 2002 (See pages 15 and 16.)	26 - 28
Y	US 6,207,446 B1 (THE GENERAL HOSPITAL CORPORATION) Mar. 27, 2001 (See columns 27 to 30.)	52 - 58
A	Mark J. Jedrzejewski et al., Structure and mechanism of action of a novel phosphoglycerate mutase from <i>Bacillus stearothermophilus</i> . In <i>The EMBO Journal</i> Vol. 19, No. 7, pp.1419-1431, 2000 (See the whole document.)	1 - 66
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 Further documents are listed in the continuation of Box C. See patent family annex.

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