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[Continued on next page]

(54) Title: ALPHA-AMYLASE VARIANTS WITH ALTERED PROPERTIES

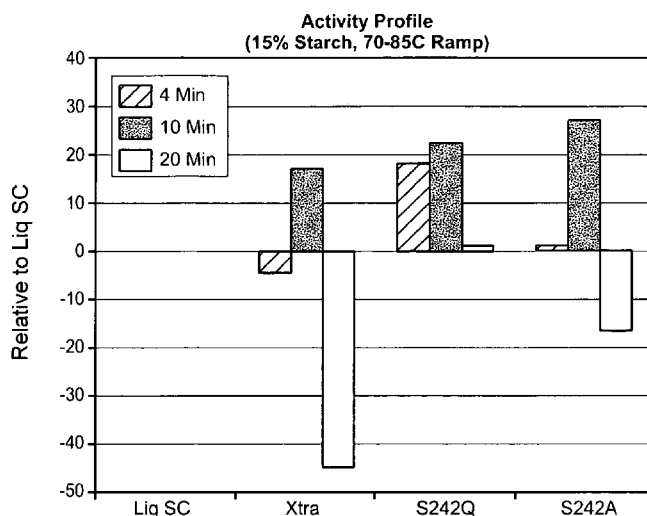


FIG. 7

(57) Abstract: Disclosed are compositions comprising variants of alpha-amylase that have alpha-amylase activity and which exhibit altered properties relative to a parent AmyS-like alpha-amylase from which they are derived. The compositions comprise an additional enzyme such as a phytase. Also disclosed are methods of using the compositions, and kits related thereto.

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**A. CLASSIFICATION OF SUBJECT MATTER**  
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**B. FIELDS SEARCHED**  
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2004/091544 A (DIVERSA CORP [US]; CALLEN WALTER [US]; RICHARDSON TOBY [US]; FREY GERH) 28 October 2004 (2004-10-28) sequences 178, 572	
A	----- DATABASE UniProt [Online] 22 August 2006 (2006-08-22), "SubName: Full=Alpha amylase, catalytic region; Flags: Precursor;" XP002545242 retrieved from EBI accession no. UNIPROT:Q12N92 Database accession no. Q12N92 ----- <div style="text-align: center;">-/--</div>	

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

\* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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.</p> <p>"&amp;" document member of the same patent family</p>
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Date of the actual completion of the international search	Date of mailing of the international search report
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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, Fax: (+31-70) 340-3016	Authorized officer  <div style="text-align: center;">Turri, Matteo</div>
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## INTERNATIONAL SEARCH REPORT

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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>MI-SOOK KIM ET AL: "CHANGES IN OPTIMUM PH AND THERMOSTABILITY OF ALPHA-AMYLASE FROM BACILLUS LICHENIFORMIS BY SITE-DIRECTED MUTAGENESIS OF HIS 235 AND ASP 328" BULLETIN OF THE KOREAN CHEMICAL SOCIETY, KOREAN CHEMICAL SOCIETY, SEOUL, KR, vol. 15, no. 10, 20 October 1994 (1994-10-20), pages 832-835, XP000606643 ISSN: 0253-2964</p> <p style="text-align: center;">-----</p>	

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