



(11) **EP 2 048 233 B8**

(12) **CORRECTED EUROPEAN PATENT SPECIFICATION**

(15) Correction information:  
**Corrected version no 1 (W1 B1)**  
**Corrections, see**  
**Bibliography INID code(s) 73**

(51) Int Cl.:  
**C12N 15/09** *(2006.01)* **C12N 9/00** *(2006.01)*  
**C12P 21/02** *(2006.01)*

(48) Corrigendum issued on:  
**02.05.2012 Bulletin 2012/18**

(86) International application number:  
**PCT/JP2007/063414**

(45) Date of publication and mention  
of the grant of the patent:  
**16.11.2011 Bulletin 2011/46**

(87) International publication number:  
**WO 2008/001947 (03.01.2008 Gazette 2008/01)**

(21) Application number: **07768165.8**

(22) Date of filing: **28.06.2007**

(54) **MUTANT SepRS, AND METHOD FOR SITE-SPECIFIC INTRODUCTION OF PHOSPHOSERINE INTO PROTEIN BY USING THE SAME**

SEPRS-MUTANTE UND VERFAHREN ZUR STELLENGERICHTETEN EINFÜHRUNG VON PHOSPHOSERIN IN PROTEIN UNTER VERWENDUNG DAVON

SepRS MUTANTE, ET PROCÉDÉ D'INTRODUCTION SITO-SPÉCIFIQUE D'UNE PHOSPHOSÉRINE DANS UNE PROTÉINE EN UTILISANT CETTE SepRS

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE  
SI SK TR**

(56) References cited:  
**WO-A1-03/014354 WO-A1-2004/039989  
WO-A1-2004/070024 WO-A2-2006/107813  
JP-A- 2004 537 984**

(30) Priority: **28.06.2006 JP 2006178642**

(43) Date of publication of application:  
**15.04.2009 Bulletin 2009/16**

(73) Proprietor: **Riken**  
**Wako-shi, Saitama 351-0198 (JP)**

(72) Inventors:  
• **YOKOYAMA, Shigeyuki**  
**Yokohama-shi, Kanagawa 2300045 (JP)**  
• **FUKUNAGA, Ryuya**  
**Tokyo 1138654 (JP)**  
• **SEKINE, Shun-ichi**  
**Tokyo 1138654 (JP)**

(74) Representative: **Arends, William Gerrit**  
**Marks & Clerk LLP**  
**90 Long Acre**  
**London**  
**WC2E 9RA (GB)**

- **FUKUNAGA R ET AL: "Phosphoserine aminoacylation of tRNA bearing an unnatural base anticodon" BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, ACADEMIC PRESS INC. ORLANDO, FL, US LNKD- DOI:10.1016/J.BBRC.2008.05.078, vol. 372, no. 3, 1 August 2008 (2008-08-01), pages 480-485, XP022709964 ISSN: 0006-291X [retrieved on 2008-05-27]**
- **PERICH J W ET AL: "EFFICIENT SOLUTION-PHASE SYNTHESIS OF MULTIPLE O-PHOSPHOSERYL- CONTAINING PEPTIDES RELATED TO CASEIN AND STATHERIN" INTERNATIONAL JOURNAL OF PEPTIDE AND PROTEIN RESEARCH, MUNKSGAARD, COPENHAGEN, DK, vol. 40, no. 2, 1 August 1992 (1992-08-01) , pages 81-88, XP000297256 ISSN: 0367-8377**

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

**EP 2 048 233 B8**

- WANG LEI ET AL: "EXPANDING THE GENETIC CODE" ANNUAL REVIEW OF BIOPHYSICS AND BIOMOLECULAR STRUCTURE, ANNUAL REVIEWS INC., PALO ALTO, CA, US LNKD- DOI: 10.1146/ANNUREV.BIOPHYS.35.101105.1215 07, vol. 35, 1 January 2006 (2006-01-01), pages 225-249, XP009084565 ISSN: 1056-8700
- FUKUNAGA R. ET AL.: 'Structural insights into the first step of RNA-dependent cysteine biosynthesis in archaea' NAT. STRUCT. MOL. BIOL. vol. 14, no. 4, 11 March 2007, pages 272 - 279, XP003020797
- DATABASE GENBANK [Online] XP003018750 Database accession no. (NP\_068951)
- KIGA D. ET AL.: 'Shifted positioning of the anticodon nucleotide residues of amber suppressor tRNA species by Escherichia coli arginyl-tRNA synthetase' EUR. J. BIOCHEM. vol. 268, no. 23, 2001, pages 6207 - 6213, XP003018751
- SAKAMOTO K. ET AL.: 'Ikita Saibo de Chotanpakushitsu o Tsukuru - Hitennen Amino Acid o Tanpakushitsu ni Donyu suru Hoho' CHEMISTRY vol. 60, no. 4, 2005, pages 70 - 71, XP003018752
- SAUERWALD A. ET AL.: 'RNA-dependent cysteine biosynthesis in archaea' SCIENCE vol. 307, no. 5717, 2005, pages 1969 - 1972, XP003018753
- FUKUNAGA J. ET AL.: 'A base pair at the bottom of the anticodon stem is reciprocally preferred for discrimination of cognate tRNAs by Escherichia coli lysyl- and glutaminyl-tRNA synthetases' NUCLEIC ACIDS RES. vol. 34, no. 10, 13 June 2006, pages 3181 - 3188, XP003018754