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(54) Title: SIMPLE ENZYMATIC PROCESS FOR PREPARING CEFAZOLIN

(57) Abstract: A process for preparing the 7-(1-H-tetrazol-1-yl) acetamide-3-(2-methyl-1,3,4-thiadiazol-5-yl)thiomethyl-3-cephem-4-carboxylic acid or cefazolin, comprising catalysing the acylation of the amino β -lactam, the 7-amino-3-[5methyl-1,3,4-thiadiazol-2-yl]thiomethyl]-3-cephem-4-carboxylic acid, of the formula with an activated acylating agent derived from acetic acid in the presence of a biocatalyst comprising penicillin amidase, and a product of the formula I obtainable by the foregoing process according to claims.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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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 7 C12P C12N C07D

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 practical, 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.
A	US 6 465 227 B1 (RIETHORST WAANDER ET AL) 15 October 2002 (2002-10-15) the whole document ---	
A	US 5 677 141 A (ARAMORI ICHIRO ET AL) 14 October 1997 (1997-10-14) the whole document --- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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International Application No
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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>FERNANDEZ-LAFUENTE R ET AL: "Chemoenzymatic One-pot Synthesis of Cefazolin from Cephalosporin C in Fully Aqueous Medium, Involving Three Consecutive Biotransformations Catalyzed by D-Aminoacid Oxidase, Glutaryl Acylase and Penicillin G Acylase" TETRAHEDRON LETTERS, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 38, no. 26, 30 June 1997 (1997-06-30), pages 4693-4696, XP004074870 ISSN: 0040-4039 cited in the application the whole document</p> <p>---</p>	
A	<p>WON J I ET AL: "THE EFFECT OF 2-MERCAPTO-5-METHYL-1,3,4-THIADIAZOLE ON ENZYMATIC SYNTHESIS OF CEFAZOLIN" APPLIED BIOCHEMISTRY AND BIOTECHNOLOGY, CLIFTON, NJ, US, vol. 69, no. 1, January 1998 (1998-01), pages 1-9, XP001105929 ISSN: 0273-2289 cited in the application the whole document</p> <p>---</p>	
A	<p>PARK C B ET AL: "PENICILLIN ACYLASE-CATALYZED SYNTHESIS OF CEFAZOLIN IN WATER-SOLVENT MIXTURES: ENHANCEMENT EFFECT OF ETHYL ACETATE AND CARBON TETRACHLORIDE ON THE SYNTHETIC YIELD" JOURNAL OF MOLECULAR CATALYSIS. B, ENZYMATIC, ELSEVIER, AMSTERDAM,, NL, vol. 9, no. 4-6, 21 April 2000 (2000-04-21), pages 275-281, XP000989461 ISSN: 1381-1177 the whole document</p> <p>---</p>	
A	<p>JUSTIZ O H ET AL: "One-pot chemoenzymatic synthesis of 3'-functionalized cephalosporines (cefazolin) by three consecutive biotransformations in ully aqueous medium" JOURNAL OF ORGANIC CHEMISTRY, AMERICAN CHEMICAL SOCIETY. EASTON, US, vol. 62, no. 26, 1997, pages 9099-9106, XP002177920 ISSN: 0022-3263 cited in the application the whole document</p> <p>---</p> <p style="text-align: center;">-/--</p>	

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
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P,X	<p>WO 02 086143 A (BIOFERMA MURCIA S A ;SANCHEZ-FERRER ALVARO (ES); GARCIA-CARMONA FR) 31 October 2002 (2002-10-31) cited in the application the whole document -----</p>	1-39