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(54) Title: CHIMERIC ABC TRANSPORTERS AND SCREENING METHODS

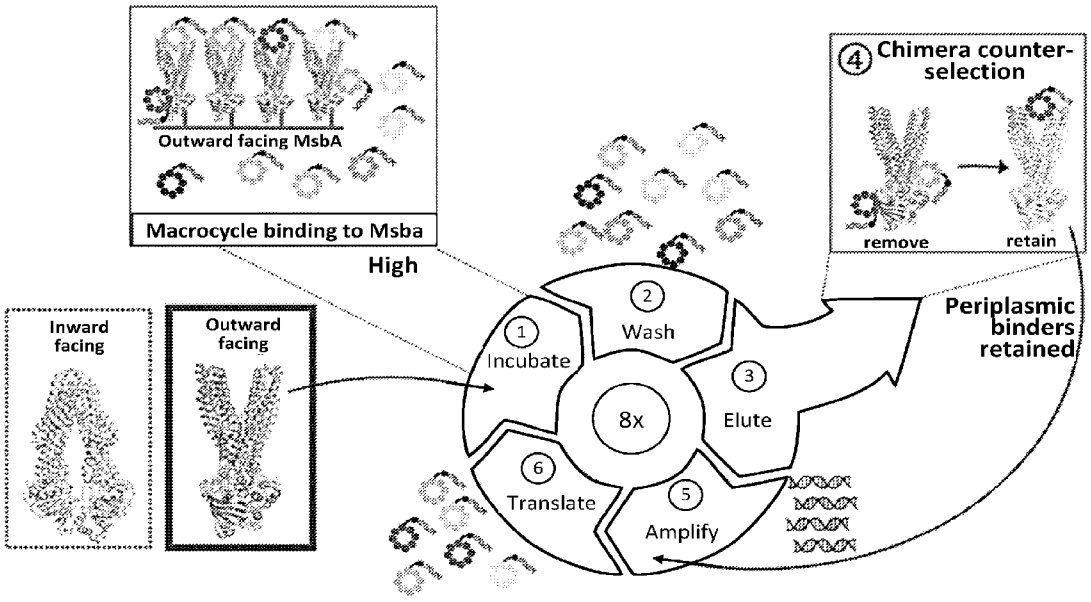

Fig. 3A

(57) Abstract: The present disclosure relates to chimeric ABC transporter proteins and methods of screening for molecules that bind to the periplasmic, extracellular, and/or luminal face of an ABC transporter protein using the chimeric ABC transporters. For example, in some embodiments, screening methods involve providing a chimeric ABC transporter in which one or more regions of the periplasmic, extracellular, and/or luminal face of the ABC transporter are substituted with one or more equivalent regions of the periplasmic, extracellular, and/or luminal face of a different ABC transporter and selecting for molecules that bind to the ABC transporter but do not bind to the chimeric ABC transporter. The disclosure also relates to molecules that bind to the periplasmic, extracellular, and/or luminal face of an ABC transporter protein, for example, identified in such screens.

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[Continued on next page]

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A. CLASSIFICATION OF SUBJECT MATTER
INV. G01N33/68 A61K39/00 C07K14/00 C12N15/00 C07K16/00
C12Q1/18 C07K7/00 C12N9/00
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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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)
EPO-Internal, BIOSIS, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	TEEM J L ET AL: "Identification of revertants for the cystic fibrosis @DF508 mutation using STE6-CFTR chimeras in yeast", CELL, ELSEVIER, AMSTERDAM NL, vol. 73, no. 2, 23 April 1993 (1993-04-23) , pages 335-346, XP024245690, ISSN: 0092-8674, DOI: 10.1016/0092-8674(93)90233-G [retrieved on 1993-04-23] whole document, in particular fig. 1; p. 336, col. 1, par. 1-3; p. 344, col. 1, par. 1, 2; col. 2, par. 1, 2 ----- -/--	65,67-69

[x] Further documents are listed in the continuation of Box C.

[x] See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 December 2022	02/01/2023

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Chrétien, Eva Maria

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2022/026319

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.c of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of a sequence listing:

   a. [ ] forming part of the international application as filed:

      [ ] in the form of an Annex C/ST.25 text file.

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3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2022/026319

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ALEXANDER MARY KATE ET AL: "Disrupting Gram-Negative Bacterial Outer Membrane Biosynthesis through Inhibition of the Lipopolysaccharide Transporter MsbA", ANTIMICROBIAL AGENTS AND CHEMOTHERAPY, vol. 62, no. 11, 13 August 2018 (2018-08-13), XP055960408, US ISSN: 0066-4804, DOI: 10.1128/AAC.01142-18 Retrieved from the Internet: URL:https://journals.asm.org/doi/pdf/10.1128/AAC.01142-18> whole document, in particular p. 6-7, bridging par.; fig. 3; table 4	65, 67-78, 81,83
X	GUO XIAOXIAN ET AL: "A Mutation in Intracellular Loop 4 Affects the Drug-Efflux Activity of the Yeast Multidrug Resistance ABC Transporter Pdr5p", PLOS ONE, vol. 7, no. 1, 6 January 2012 (2012-01-06), page e29520, XP093008668, DOI: 10.1371/journal.pone.0029520 Retrieved from the Internet: URL:https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0029520&type=printable> whole document, in particular p. 1, col. 2, bridging par. - p. 3, col. 1, par. 3; fig. 1, 2	65-69
X	SACHS G ET AL: "Urea Transport in Bacteria: Acid Acclimation by Gastric Helicobacter spp", JOURNAL OF MEMBRANE BIOLOGY, SPRINGER-VERLAG, NE, vol. 212, no. 2, 30 January 2007 (2007-01-30), pages 71-82, XP019489232, ISSN: 1432-1424 whole document, in particular p. 78, col. 2, par. 2	65, 67-70,77
A	WO 2005/064021 A2 (GLAXOSMITHKLINE BIOLOG SA [BE]; UNIV UTRECHT [NL] ET AL.) 14 July 2005 (2005-07-14) the whole document	65-83

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2022/026319

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	VAKKASOGLU AHMET S. ET AL: "D-helix influences dimerization of the ATP-binding cassette (ABC) transporter associated with antigen processing 1 (TAP1) nucleotide-binding domain", PLOS ONE, vol. 12, no. 5, 23 May 2017 (2017-05-23), page e0178238, XP093008700, DOI: 10.1371/journal.pone.0178238 Retrieved from the Internet: URL:https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0178238&type=printable> the whole document -----	65-83
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
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		EP 1706481 A2	04-10-2006
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		WO 2005064021 A2	14-07-2005