

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 June 2014 (26.06.2014)



(10) International Publication Number
WO 2014/097148 A9

(51) International Patent Classification:

C07D 487/14 (2006.01) *A61K 31/519* (2006.01)
C07D 487/04 (2006.01) *A61P 13/12* (2006.01)
C07D 495/14 (2006.01) *A61P 1/12* (2006.01)

(21) International Application Number:

PCT/IB2013/061043

(22) International Filing Date:

17 December 2013 (17.12.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/739,335 19 December 2012 (19.12.2012) US
61/906,141 19 November 2013 (19.11.2013) US

(71) Applicant (for all designated States except US): **NOVARTIS AG** [CH/CH]; Lichtstrasse 35, CH-4056 Basel (CH).

(72) Inventors; and

(71) Applicants (for US only): **AHMED, Mahbub** [GB/GB]; Srg, 5th Floor, 5 Devonshire Square, London EC2M 4YD (GB). **ASHALL-KELLY, Alexander** [GB/GB]; Srg, 5th Floor, 5 Devonshire Square, London EC2M 4YD (GB).

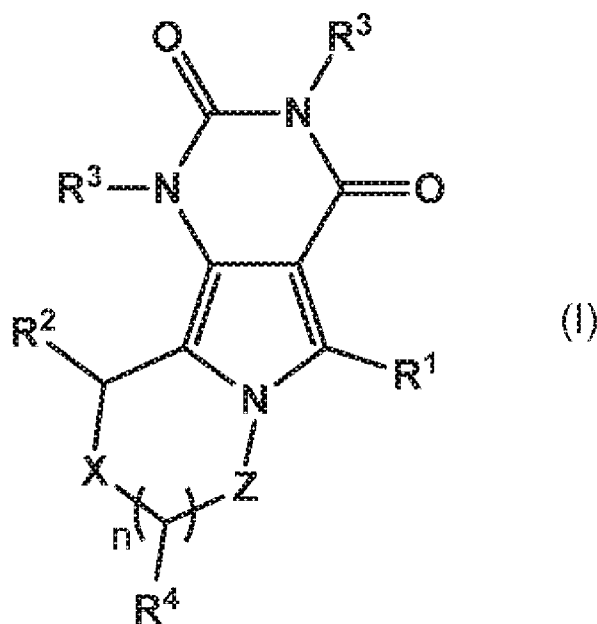
GUERITZ, Louisa [GB/GB]; Srg, 5th Floor, 5 Devonshire Square, London EC2M 4YD (GB). **MCKENNA, Jeffrey** [GB/GB]; Novartis Pharmaceuticals UK Limited, Wimbleshurst Road, Horsham Sussex RH12 5AB (GB). **MCKENNA, Joseph** [GB/GB]; Srg, 5th Floor, 5 Devonshire Square, London EC2M 4YD (GB). **MUTTON, Simon** [GB/GB]; Srg, 5th Floor, 5 Devonshire Square, London EC2M 4YD (GB). **PARMAR, Rakesh** [GB/GB]; Srg, 5th Floor, 5 Devonshire Square, London EC2M 4YD (GB). **SHEPHERD, Jon** [GB/GB]; Srg, 5th Floor, 5 Devonshire Square, London EC2M 4YD (GB). **WRIGHT, Paul** [GB/GB]; Srg, 5th Floor, 5 Devonshire Square, London EC2M 4YD (GB).

(74) Common Representative: **NOVARTIS AG**; Lichtstrasse 35, CH-4056 Basel (CH).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,

[Continued on next page]

(54) Title: TRICYCLIC COMPOUNDS FOR INHIBITING THE CFTR CHANNEL



(57) Abstract: The present invention provides a compound of formula I or a pharmaceutically acceptable salt thereof; and its therapeutic uses. The present invention further provides a combination of pharmacologically active agents and a pharmaceutical composition.



SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

- (84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

- with international search report (Art. 21(3))

(48) Date of publication of this corrected version:

19 February 2015

(15) Information about Correction:

see Notice of 19 February 2015