(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
16 June 2022 (16.06.2022)

WIPO | PCT

(10) International Publication Number
WO 2022/125805 A1

(51) International Patent Classification:
A61K 31/38 (2006.01) *A61K 31/395* (2006.01)

(21) International Application Number:
PCT/US2021/062663

(22) International Filing Date:
09 December 2021 (09.12.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/124,448 11 December 2020 (11.12.2020) US

(71) Applicants: **MATERIA THERAPEUTICS INC.** [US/US]; 3750 Las Vegas Blvd S Unit #3004, Las Vegas, Nevada, 89158 (US). **UNIVERSITY OF CYPRUS** [CY/CY]; Council-Senate Building, Anastasios G. Leventis; 1 Panepistimiou Avenue, Aglantzia, Nicosia, 2109 (CY).

(72) Inventors: **MARTIN, John D.**; c/o University of Cyprus; Council-Senate Building, Anastasios G. Leventis; 1 Panepistimiou Avenue, 2109 Aglantzia, Nicosia (CY). **STYLIANOPOULOS, Triantafyllos**; Ioanni Stylianou 3A, Apt. 301, Strovolos, Nicosia, 2003 (CY). **MPEKRIS, Fotios**; c/o University of Cyprus; Council-Senate Building, Anastasios G. Leventis; 1 Panepistimiou Avenue, Aglantzia, Nicosia, 2109 (CY). **PANAGI, Myrofora**; c/o University of Cyprus; Council-Senate Building, Anastasios G. Leventis; 1 Panepistimiou Avenue, Aglantzia, Nicosia, 2109 (CY). **VOUTOURI, Chrysovalantis**; c/o University of Cyprus; Council-Senate Building, Anastasios G. Leventis; 1 Panepistimiou Avenue, Aglantzia, Nicosia, 2109 (CY). **STYLIANOU, Andreas**; c/o University of Cyprus; Council-Senate Building, Anastasios G. Leventis; 1 Panepistimiou Avenue, Aglantzia, Nicosia, 2109 (CY).

(74) Agent: **FRAUSTO, Stephen** et al.; Morrison & Foerster LLP, 755 Page Mill Road, Palo Alto, California 94304-1018 (US).

(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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, ST, 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:
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report (Art. 21(3))*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

WO 2022/125805 A1

(54) Title: CANCER TREATMENT USING BOSENTAN IN COMBINATION WITH A CHECKPOINT INHIBITOR

(57) Abstract: The present invention is directed to a combination treatment using bosentan and a checkpoint inhibitor that is effective in treating cancer or inhibiting the proliferation of tumor cells in a subject and/or that can initiate, enhance or prolong the immune response to tumor cells.