

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
19 January 2023 (19.01.2023)



(10) International Publication Number
WO 2023/285552 A1

(51) International Patent Classification:
C07K 16/28 (2006.01) *A61P 35/00* (2006.01)
A61K 39/395 (2006.01)

(21) International Application Number:
PCT/EP2022/069639

(22) International Filing Date:
13 July 2022 (13.07.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/221,340 13 July 2021 (13.07.2021) US
63/364,594 12 May 2022 (12.05.2022) US

(71) Applicants: **BIONTECH SE** [DE/DE]; An der Goldgrube 12, 55131 Mainz (DE). **GENMAB A/S** [DK/DK]; Kalvebod Brygge 43, 1560 Copenhagen V (DK).

(72) Inventors: **SAHIN, Ugur**; c/o BioNTech SE, An der Goldgrube 12, 55131 Mainz (DE). **MUIK, Alexander**; c/o BioNTech SE, An der Goldgrube 12, 55131 Mainz (DE). **FELLERMEIER-KOPF, Sina**; c/o BioNTech SE, An der Goldgrube 12, 55131 Mainz (DE). **FU, Yali**; c/o Genmab US, Inc., 777 Scudders Mill Road, Plainsboro, New Jersey 08536 (US). **ADAMS, Homer, III**; c/o Genmab US, Inc., 777 Scudders Mill Road, Plainsboro, New Jersey 08536 (US). **BAJAJ, Gaurav**; c/o Genmab US, Inc., 777 Scudders Mill Road, Plainsboro, New Jersey 08536 (US). **HIGGS, Brandon**; c/o Genmab US, Inc., 777 Scudders Mill Road, Plainsboro, New Jersey 08536 (US). **FERESHTEH, Mark**; c/o Genmab US, Inc., 777 Scudders Mill Road, Plainsboro, New Jersey 08536 (US). **SPIRES, Vanessa**; c/o Genmab US, Inc., 777 Scudders Mill Road, Plainsboro, New Jersey 08536 (US). **BLUM, Jordan**; c/o Genmab US, Inc., 777 Scudders Mill Road, Plainsboro, New Jersey 08536 (US). **GARRIDO CASTRO, Patricia**; c/o Genmab B.V., Uppsalalaan 15, 3584 CT Utrecht (NL). **NIEWOOD, Michelle**; c/o Genmab US, Inc., 777 Scudders Mill Road, Plainsboro, New Jersey 08536 (US). **GIESEKE, Friederike**; c/o BioNTech SE, An der Goldgrube 12, 55131 Mainz (DE). **BECKMANN, Karsten**; c/o BioNTech SE, An der Goldgrube 12, 55131 Mainz (DE). **PAULMANN, Claudia**; c/o BioNTech SE, An der Goldgrube 12, 55131 Mainz (DE). **KUZMANOV, Ivan**; c/o BioNTech SE, An der Goldgrube 12, 55131 Mainz (DE). **BREIJ, Esther Cornelia Wilhelmina**; c/o Genmab B.V., Uppsalalaan 15, 3584 CT Utrecht (NL). **GUELEN, Lars**; c/o Genmab B.V., Uppsalalaan 15, 3584 CT Utrecht (NL). **NEIJSEN, Jost**; c/o Genmab B.V., Uppsalalaan 15, 3584 CT Utrecht (NL). **DE KREUK, Bart-Jan**; c/o Genmab B.V., Uppsalalaan 15, 3584 CT Utrecht (NL). **HIBBERT, Richard**; c/o Genmab

B.V., Uppsalalaan 15, 3584 CT Utrecht (NL). **SCHUURMAN, Janine**; c/o Genmab B.V., Uppsalalaan 15, 3584 CT Utrecht (NL). **LABRIJN, Aran Frank**; c/o Genmab B.V., Uppsalalaan 15, 3584 CT Utrecht (NL).

(74) Agent: **MÜLLER, Christian**; Zwicker Schnappauf & Partner Patentanwälte PartG mbB, Hansastr. 32, 80686 München (DE).

(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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, 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).

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))
- with sequence listing part of description (Rule 5.2(a))

(54) Title: MULTISPECIFIC BINDING AGENTS AGAINST CD40 AND CD137 IN COMBINATION THERAPY FOR CANCER

(57) Abstract: The present invention relates to combination therapy using a binding agent that binds to human CD40 and to human CD137 in combination with a checkpoint inhibitor to reduce or prevent progression of a tumor or treating cancer.

WO 2023/285552 A1