

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
23 June 2022 (23.06.2022)



(10) International Publication Number
WO 2022/133110 A1

(51) International Patent Classification:

C07K 16/18 (2006.01) A61P 35/00 (2006.01)
C07K 16/30 (2006.01) A61P 43/00 (2006.01)

(21) International Application Number:

PCT/US2021/063847

(22) International Filing Date:

16 December 2021 (16.12.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/127,885 18 December 2020 (18.12.2020) US
63/262,310 08 October 2021 (08.10.2021) US

(71) Applicant: **BIOARDIS, LLC** [US/US]; 7310 Miramar Road, San Diego, California 92126 (US).

(72) Inventors: **HAERIZADEH, Farzad**; 7310 Miramar Road, San Diego, California 92126 (US). **TAYEBI, Masood**; 7310 Miramar Road, San Diego, California 92126 (US).

(74) Agent: **FULLER, Michael L.**; 2040 Main Street, 14th Floor, Irvine, California 92614 (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:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

(54) Title: EPCAM BINDING MOLECULES AND USES THEREOF

CDR-H1			CDR-H2		
SEQ3	GSISVDF	8	SEQ14	ISRTGGST	9
SEQ13	GSIFYDFY	8	SEQ15	ISRTGGST	9
SEQ2	GRISPLVY	8	SEQ16	ISRTGGST	9
SEQ5	GSIFYNVYV	9	SEQ17	ISRTGGST	9
SEQ7	GSISNVYI	9	SEQ18	ISRTGGST	9
SEQ9	GTFRRDV	9	SEQ19	ISRTGGST	9
SEQ8	GSTSENY	9	SEQ20	ISRTGGST	9
SEQ11	GSTSENY	9	SEQ21	ISRTGGST	9
SEQ12	GRTFSYNF	9	SEQ22	ISRTGGST	9
SEQ4	GTFSSYV	9	SEQ23	ISRTGGST	9
SEQ6	GTFSSYDF	9	SEQ24	ISRTGGST	9
SEQ1	GTFSEIDF	9	SEQ25	ISRTGGST	9
SEQ10	GTFSEDF	9	SEQ26	ISRTGGST	9

CDR-H3		
SEQ28	---ATYYW---PTGGDSY	13
SEQ38	---VETSVDRV---THIEPFSY	16
SEQ35	---ARSLH---APSVGRADGTSRGY	19
SEQ31	---AR---QLGRQS---EPNVSIGY	16
SEQ30	AAGVPAEDGRVPLPSRYTF--	20
SEQ27	---ARGKTLAWQAPDSLTVFQY	21
SEQ32	---APGKKQMGPM---DQAFVBDY	19
SEQ37	---APGKDGQGV-----IEGY	13
SEQ34	---VRANFLNH-----ALGY	13
SEQ33	---ARDEFTRI-----GLGY	13
SEQ36	---ARLEGTFN-----AFGY	13
SEQ29	---ARQFLNHPT-----ALGY	13
SEQ39	---APGQARANL-----ALGY	13

FIG. 1

(57) Abstract: Disclosed herein are epithelial cell adhesion molecule (EpCAM)-specific binding polypeptides. These binding polypeptides may be incorporated into chimeric antigen receptors (CARs). Also disclosed herein are methods of using these binding polypeptides and/or CARs for the treatment of, for example, a cancer.

WO 2022/133110 A1

[Continued on next page]

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))*