

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
20 July 2023 (20.07.2023)



(10) International Publication Number
WO 2023/137387 A3

(51) International Patent Classification:

C07K 16/46 (2006.01) C12N 15/62 (2006.01)
A61K 39/395 (2006.01) C12D 249/04 (2006.01)
A61P 29/00 (2006.01) C12D 249/16 (2006.01)
A61P 31/14 (2006.01) C12N 5/10 (2006.01)

(21) International Application Number:

PCT/US2023/060570

(22) International Filing Date:

12 January 2023 (12.01.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/298,999 12 January 2022 (12.01.2022) US

(71) Applicant: **BIOMOLECULAR HOLDINGS LLC**
[US/US]; 329 Primrose Road, #2, Burlingame, CA 94010
(US).

(72) Inventor: **CAPON, Daniel, J.**; 90 Woodridge Road, Hills-
borough, CA 94010 (US).

(74) Agent: **WHITE, John, P.**; Amster Rothstein & Ebenstein
LLP, 90 Park Avenue, 21st Floor, New York, NY 10016
(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, 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, 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, CV,
GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, 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, ME, 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))
- with sequence listing part of description (Rule 5.2(a))

(54) Title: TETRAHEDRAL ANTIBODIES

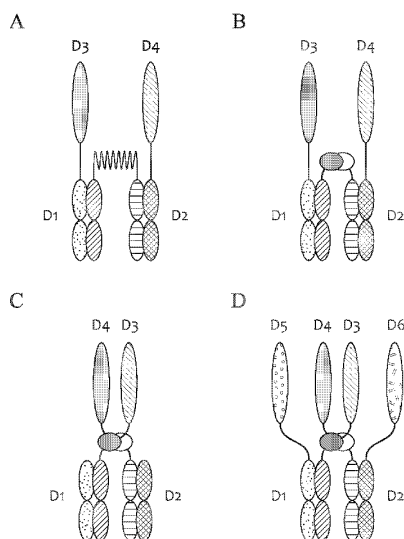


Figure 1

(57) Abstract: This invention provides a tetrahedral antibody comprising a first, second, third, and fourth domain, wherein each of the first and second domains are selected from the group consisting of a Fab domain and an Fc domain, wherein each of the first and second domains comprise a first polypeptide chain comprising a first N-terminus and a first C-terminus of the domain, and a second polypeptide chain comprising a second N-terminus and a second C-terminus of the domain, and wherein the first domain and the second domain are joined to each other by a non-peptidyl linkage between the first N-terminus of the first domain and the first N-terminus of the second domain, between first C-terminus of the first domain and the first C-terminus of the second domain, between the first N-terminus of the first domain and the first C-terminus of the second domain, or between the first C-terminus of the first domain and the first N-terminus of the second domain.

WO 2023/137387 A3

[Continued on next page]

(88) Date of publication of the international search report:
28 September 2023 (28.09.2023)