



(51) International Patent Classification:

A61K 39/395 (2006.01) *C07K 16/18* (2006.01)*A61K 47/48* (2006.01) *C07K 16/28* (2006.01)

(21) International Application Number:

PCT/US2017/033673

(22) International Filing Date:

19 May 2017 (19.05.2017)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/339,685 20 May 2016 (20.05.2016) US

(71) Applicant: HARPOON THERAPEUTICS, INC.

[US/US]; 4000 Shoreline Court, Suite 250, South San Francisco, California 94080 (US).

(72) Inventors: **DUBRIDGE, Robert B.**; 825 Holly Road, Belmont, California 94002 (US). **SETO, Pui**; 292 Clifton Ave., San Carlos, California 94070 (US). **AUSTIN, Richard J.**; 1169 Guerrero St., San Francisco, California 94110 (US). **EVNIN, Luke**; 768 El Camino Del Mar, San Francisco, California 94121 (US). **GUENOT, Jeanmarie**; 45 Juniper Street, #3, San Francisco, California 94103 (US). **LEMON, Bryan D.**; 2493 Dell Ave., Mountain View, California 94043 (US).

(74) Agent: **LIN, Clark Y.**; WILSON SONSINI GOODRICH & ROSATI, 650 Page Mill Road, Palo Alto, California 94304 (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, 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, 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, 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).

(54) Title: SINGLE CHAIN VARIABLE FRAGMENT CD3 BINDING PROTEINS

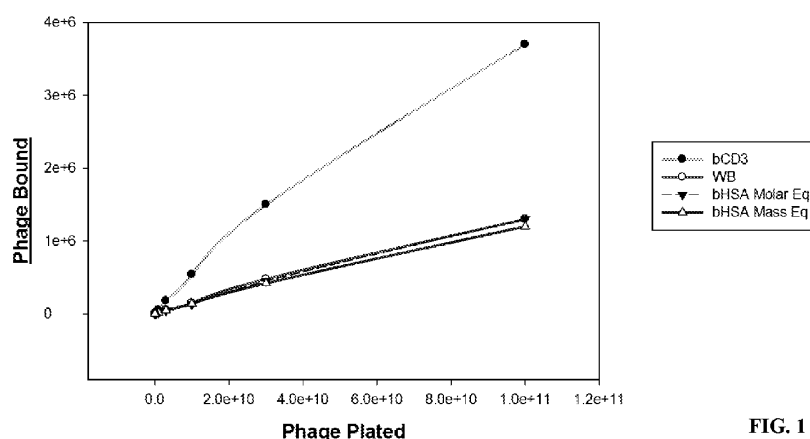


FIG. 1

(57) Abstract: Disclosed herein are single chain variable fragment CD3 binding proteins with improved binding affinities, and robust aggregation profiles. Also described are multispecific binding proteins comprising a single chain variable fragment CD3 binding protein according to the instant disclosure. Pharmaceutical compositions comprising the binding proteins disclosed herein and methods of using such formulations are provided.

[Continued on next page]

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))*

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))*