

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
08 October 2020 (08.10.2020)



(10) International Publication Number
WO 2020/206138 A1

(51) International Patent Classification:

C07K 19/00 (2006.01) C07K 1/22 (2006.01)
C07K 14/435 (2006.01) C07K 16/18 (2006.01)
C07K 14/31 (2006.01) C07K 16/26 (2006.01)
C07K 16/00 (2006.01)

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))

(21) International Application Number:

PCT/US2020/026412

Published:

— with international search report (Art. 21(3))
— with sequence listing part of description (Rule 5.2(a))

(22) International Filing Date:

02 April 2020 (02.04.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/828,142 02 April 2019 (02.04.2019) US

(71) Applicant: **BONDWELL TECHNOLOGIES INC.**
[US/US]; 501 Graham Road, College Station, Texas 77845
(US).

(72) Inventors: **BONDOS, Sarah E.**; Bondwell Technologies
Inc., 501 Graham Road, College Station, Texas 77845 (US).
HOWELL, David W.; Bondwell Technologies Inc., 501
Graham Road, College Station, Texas 77845 (US).

(74) Agent: **GRAHAM, Jamie L.** et al.; Kilpatrick Townsend
& Stockton LLP, Mailstop: IP Docketing - 22, Suite 2800,
1100 Peachtree Street NE, Atlanta, Georgia 30309-4528
(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, 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,

(54) Title: FUNCTIONALIZED UBX PROTEIN MATERIALS FOR ENHANCED PURIFICATION OF ANTIBODIES

(57) Abstract: Provided herein are methods and compositions for purifying antibodies. Purification is achieved by increasing the binding capacity of protein A chromatography by covalent attachment of a protein A domain (E, D, A, B, C), or domain Z, or a functional variant thereof, to *Drosophila melanogaster* transcription factor Ultrabithorax (Ubx) materials. The compositions include fusion proteins containing *Drosophila melanogaster* transcription factor Ultrabithorax (Ubx) or a fragment thereof and an immunoglobulin binding protein. In some embodiments, the immunoglobulin binding protein is a protein A domain, a protein Z domain or a fragment thereof.

WO 2020/206138 A1