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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
16 October 2014 (16.10.2014)

WIPO | PCT

(10) International Publication Number
WO 2014/166002 A1

(51) International Patent Classification:
A61K 47/48 (2006.01) *A61K 51/10* (2006.01)
A61K 35/74 (2006.01) *A61P 35/00* (2006.01)
A61K 38/16 (2006.01) *G01N 33/574* (2006.01)

(21) International Application Number:
PCT/CA2014/050373

(22) International Filing Date:
14 April 2014 (14.04.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/811,360 12 April 2013 (12.04.2013) US

(71) Applicant: **VIVENTIA BIO INC.** [CA/CA]; 147 Hamelin Street, Winnipeg, Manitoba R3T 3Z1 (CA).

(72) Inventors: **TANAKA, Shinji**; c/o Tokyo Medical and Dental University, Department of Hepato-Biliary-Pancreatic Surgery, 1-5-45 Yushima, Tokyo, 113-8519 (JP). **MACDONALD, Glen**; 475 Raglan Road, Winnipeg, Manitoba R3G 3E4 (CA).

(74) Agents: **CHARI, Santosh K.** et al.; Blake, Cassels & Graydon LLP, Commerce Court West, 199 Bay Street, Suite 4000, Toronto, Ontario M5L 1A9 (CA).

(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, 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, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, 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, 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))*

Published:

— *with international search report (Art. 21(3))*

— *with sequence listing part of description (Rule 5.2(a))*

WO 2014/166002 A1

(54) Title: COMPOSITIONS AND METHODS FOR DETECTION AND TREATMENT OF HEPATOCELLULAR CARCINOMA

(57) Abstract: Disclosed herein are compositions and methods to treat hepatocellular carcinoma. In one embodiment, a method of treating a subject with hepatocellular carcinoma comprises administering a therapeutically effective amount of an immunoconjugate (VB4- 845) comprising an antibody conjugated to an effector molecule, and wherein the antibody recognizes epithelial cell adhesion molecule (Ep-CAM). The effector molecule may be *Pseudomonas* exotoxin A. In some embodiments, the immunoconjugate may be co- administered, concurrently administered, or sequentially administered with one or more other anticancer agents.