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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 February 2010 (25.02.2010)

PCT

(10) International Publication Number
WO 2010/021729 A3

(51) **International Patent Classification**:
A61K 39/00 (2006.01)

(21) **International Application Number**:
PCT/US2009/004765

(22) **International Filing Date**:
21 August 2009 (21.08.2009)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
61/189,930 22 August 2008 (22.08.2008) US

(71) **Applicant** *(for all designated States except US)*: **THE TRUSTEES OF COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK** [US/US]; West 116th And Broadway, New York, NY 10027 (US).

(72) **Inventors; and**

(75) **Inventors/Applicants** *(for US only)*: **KITAJEWSKI, Jan** [US/US]; 323 Hillcrest Road, Ridgewood, NJ 07450 (US). **SHAWBER, Carrie** [US/US]; 418 Beech Street, Washington Township, NJ 07676 (US).

(74) **Agent**: **WHITE, John, P.**; Cooper & Dunham LLP, 30 Rockefeller Plaza, New York, NY 10112 (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, 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, IS, JP, KE, KG, KM, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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))*

(88) **Date of publication of the international search report**:
6 May 2010

WO 2010/021729 A3

(54) **Title**: HUMAN NOTCH3 BASED FUSION PROTEINS AS DECOY INHIBITORS OF NOTCH3 SIGNALING

(57) **Abstract**: This invention provides a fusion protein comprising a signal peptide, EGF repeats 1-X of the extracellular domain of human Notch3 receptor protein wherein X is any integer from 12 to 34, and an Fc portion of an antibody bound thereto. This invention also provides a method for treating a subject having a tumor, a method for inhibiting angiogenesis in a subject, a method for treating a subject having ovarian cancer, and a method for treating a subject having a metabolic disorder, comprising administering to the subject an amount of the above fusion protein effective to treat the subject. This invention further provides uses of the above fusion protein for the preparation of a pharmaceutical composition for the treatment of a subject having a tumor, for inhibiting angiogenesis in a subject, for treating a subject having ovarian cancer, and for treating a subject having a metabolic disorder.