

(12) International Application Status Report

Received at International Bureau: 10 December 2019 (10.12.2019)

Information valid as of: 08 May 2020 (08.05.2020)

Report generated on: 24 September 2020 (24.09.2020)

(10) Publication number:

WO2020/111753

(43) Publication date:

04 June 2020 (04.06.2020)

(26) Publication language:

Korean (KO)

(21) Application Number:

PCT/KR2019/016419

(22) Filing Date:

27 November 2019 (27.11.2019)

(25) Filing language:

Korean (KO)

(31) Priority number(s):

10-2018-0149345 (KR)

(31) Priority date(s):

28 November 2018 (28.11.2018)

(31) Priority status:

Priority document received (in compliance with PCT Rule 17.1)

(51) International Patent Classification:

G01N 33/68 (2006.01); **A61K 38/17** (2006.01); **A61K 48/00** (2006.01); **A61P 25/28** (2006.01); **A61P 35/00** (2006.01); **A61P 31/12** (2006.01)

(71) Applicant(s):

POSTECH RESEARCH AND BUSINESS DEVELOPMENT FOUNDATION [KR/KR]; 77, Cheongam-ro, Nam-gu Pohang-si Gyeongsangbuk-do 37673 (KR) *(for all designated states)*

DAEGU GYEONGBUK INSTITUTE OF SCIENCE AND TECHNOLOGY [KR/KR]; 333, Techno jungang-daero, Hyeonpung-myeon Dalseong-gun Daegu 42988 (KR) *(for all designated states)*

(72) Inventor(s):

HWANG, Il Doo; 8-502, 155, Jigok-ro, Nam-gu Pohang-si Gyeongsangbuk-do 37673 (KR)

CHO, Hyun Woo; 111-1802, 67, Gyeongsin-ro, Seowon-gu Cheongju-si Chungcheongbuk-do 28609 (KR)

LEE, Sung Bae; 202-C508, 111, Songpa-daero Songpa-gu Seoul 05837 (KR)

CHO, Hyun Seob; 102-907, 63, Heungan-ro Gumi-si Gyeongsangbuk-do 39179 (KR)

(74) Agent(s):

ISIS IP LAW LLC; 8F., 14, Teheran-ro 63-gil Gangnam-gu Seoul 06160 (KR)

(54) Title (EN): USE OF JULGI IN DIAGNOSING AND TREATING GUANINE-QUADRUPLEX-RELATED DISEASE

(54) Title (FR): UTILISATION DE JULGI POUR LE DIAGNOSTIC ET LE TRAITEMENT DE MALADIE LIÉE À LA GUANINE-QUADRUPLEX

(54) Title (KO): JULGI의 구아닌-사중합체 관련 질환의 진단 및 치료 용도

(57) Abstract:

(EN): The present invention relates to a use of JULGI in diagnosing and treating guanine-quadruplex-related disease and, more particularly, to a guanine-quadruplex (G-quadruplex) detecting composition comprising JULGI protein or a protein having a homology of 80% or higher to the JULGI protein, a diagnostic composition comprising the detecting composition, a diagnostic kit comprising the diagnostic composition, a method for providing information for diagnosis of a neurodegenerative disease, cancer, or a viral infection disease which are in pathological correlation with G-quadruplex, and a pharmaceutical composition for prevention or treatment of a neurodegenerative disease, cancer, or a viral infection disease, the pharmaceutical composition comprising JULGI protein, a protein having a homology of 80% or more with the JULGI protein, or a mutant protein thereof. Thanks to the activity of binding to the G-quadruplex structure, JULGI according to the present invention is expected to be advantageously used in diagnosing or treating various diseases that are in pathological correlation with the abnormal formation and dissociation of the G-quadruplex structure.

(FR): La présente invention concerne une utilisation de JULGI pour le diagnostic et le traitement d'une maladie liée à la guanine-quadruplex et, plus particulièrement, une composition de détection de guanine-quadruplex (G-quadruplex) comprenant la protéine JULGI ou une protéine ayant une homologie égale ou supérieure à 80 % à la protéine JULGI, une composition de diagnostic comprenant la composition de détection, un kit de diagnostic comprenant la composition de diagnostic, un procédé de fourniture d'informations de diagnostic d'une maladie neurodégénérative, d'un cancer ou d'une maladie à infection virale qui

sont en corrélation pathologique avec la G-quadruplex, et une composition pharmaceutique de prévention ou de traitement d'une maladie neurodégénérative, d'un cancer, ou d'une maladie à infection virale, la composition pharmaceutique comprenant la protéine JULGI, une protéine ayant une homologie égale ou supérieure à 80 % à la protéine JULGI, ou une de ses protéines mutantes. Grâce à l'activité de liaison à la structure de G-quadruplex, on s'attend à ce que la protéine JULGI selon la présente invention soit avantageusement utilisée pour le diagnostic ou le traitement de diverses maladies qui sont en corrélation pathologique avec la formation et la dissociation anormales de la structure de G-quadruplex.

(KO): 본 발명은 JULGI의 구아닌-사중합체 관련 질환의 진단 및 치료 용도에 관한 것으로, 보다 구체적으로는 JULGI 단백질 또는 상기 단백질과 80% 이상의 상동성을 갖는 단백질을 포함하는, 구아닌-사중합체(G-quadruplex) 검출용 조성물, 상기 검출용 조성물을 포함하는 진단용 조성물 및 상기 진단용 조성물을 포함하는 진단 키트, 구아닌-사중합체와 병리적 상관관계를 가지는 퇴행성 신경질환, 암 또는 바이러스 감염 질환의 진단을 위한 정보제공방법, JULGI 단백질 또는 상기 단백질과 80% 이상의 상동성을 갖는 단백질, 또는 이의 돌연변이 단백질을 포함하는 퇴행성 신경질환, 암, 또는 바이러스 감염질환의 예방 또는 치료용 약학적 조성물에 관한 것이다. 본 발명에 따른 JULGI은 G-quadruplex 구조에 결합하는 활성에 기인하여 G-quadruplex 구조의 비정상적인 형성 및 해리와 병리학적인 상관관계를 가지는 다양한 질환의 진단 또는 치료에 유용하게 이용될 수 있을 것으로 기대된다.

International search report:

Received at International Bureau: 08 April 2020 (08.04.2020) [KR]

International Report on Patentability (IPRP) Chapter II of the PCT:

Not available

(81) Designated States:

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, 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

European Patent Office (EPO) : 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

African Intellectual Property Organization (OAPI) : BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG

African Regional Intellectual Property Organization (ARIPO) : BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW

Eurasian Patent Organization (EAPO) : AM, AZ, BY, KG, KZ, RU, TJ, TM