

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
27 September 2001 (27.09.2001)

PCT

(10) International Publication Number
WO 01/070941 A3

(51) International Patent Classification⁷: **C12N 7/00**,
C12Q 1/70, C07K 14/15, C12Q 1/68

(21) International Application Number: PCT/EP01/03272

(22) International Filing Date: 21 March 2001 (21.03.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2000 00466 21 March 2000 (21.03.2000) DK
2000 00617 12 April 2000 (12.04.2000) DK

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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,

[Continued on next page]

(54) Title: AN INFECTIVE ENDOGENOUS RETROVIRUS IN ASSOCIATION WITH DEMYELINATING DISEASES E.G. MULTIPLE SCLEROSIS

CCAGAATAAA GCTGTGTCCA TCGGACAGCC AGCCTAATCC CTCCTCTTCC TCCTAGAAGT
CCAGAATAAA GCTGTGTCCA TCGGACAGCC AGCCTAATCC CTCCTCTTCC TCCTAGAAGT

RGH-1
RGH-2

2094
2095

CACAAGTACT CTCGCCCACT TAAGTACTCT CCCCACCTTC CCTTAAACTC ACTCGTATTT
CGCAATTACT CTCGCCCACT TAAGTACTCT CCCCACCTTC CCTTAAACTC ACTCGTATTT

RGH-1
RGH-2

2094
2095

CTGAAGAACA GTAATAACCC TTATGAGCCT AATACATCCC TTCATTCTAT TAGGTCTGTT
CTGAAGAACA GTAATAACCC TTATGAGCCT AATACATCCC TTCATTCTAT TAGGTCTGTT

RGH-1
RGH-2

2094
2095

CGTCCTTACC CTACTTTTTC CAACAGGGCT TTACGAAGTC ACCCCACCA CTTAGGCTGA
TGTCCTTACC CTACTTTTTC CAACAGGGCT TTACGAAGTC ACCCCACCA CTTAGGCTGA

RGH-1
RGH-2

2094
2095

GCCCCAAAAA .CTAGTCATC CCTACTATCT TCTGTCCGGT CATACTCCTA TTCCTCATTC
GCCCCAAAAA TCTTGTCTAT CCTACTATTT TCTGTCCAGT CATACTCCTA TTCCTCATTC

RGH-1
RGH-2

2094
2095

TCAACTACTT ATAAATGCCC TACTCTTGTT TACACTGCCA GTTTACACTG TTTCTTCAAG
TCAACTACTT ATAAATGCCC TACTCTTGTT TACACTGCCA GTTTACACTG TTTCTTCAAG

RGH-1
RGH-2

2094
2095

CCATTACAGC TGATATCTCT TGGTGCTATC CCCCACCCAC CACTCTTAAC TCCCTCTTAG
CCATTACAGC TGATATCTCT TGGTGCTATC CCCCACCCAC CACTCTTAAC TCCCTCTTAG

RGH-1
RGH-2

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AGTGGATAGA TGATCTTTGC
AGTGGGATAGA TGATCTTTGC
AGTGGATAGA TGATCTTTGC
AGTGGGATAGA TGATCTTTGC

RGH-1
RGH-2

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(57) Abstract: Retroviral sequences were characterised by RT-PCR with gag and env primers on RNA from RT-positive retroviral particles produced by multiple sclerosis (MS) derived B-lymphoblastoid cell lines. Sequence variants with high homology to the potentially functional subgroup RGH of the human endogenous retrovirus RTVL-H/HERV-H family were found. The same sequences were also specifically found in the particulate fraction of a series of MS patient plasma samples and were absent in controls. South-Western blots demonstrated the presence of a nucleic acid binding protein, corresponding in size and function to the nucleocapsid protein, Gag NC, of other retroviruses. Indications for transmission of the retrovirus to mononuclear blood cells from healthy human individuals and non-human animals were found. Cell cultures derived from peripheral blood from MS patients contained 5-15 % CD3+ T-cells and a specific splice variant of the env sequence comprising a region of the pol region was identified in such cultures.

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MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

- (84) Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, 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)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ,*

MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG)

- *of inventorship (Rule 4.17(iv)) for US only*

Published:

- *with international search report*

(88) Date of publication of the international search report:

8 August 2002

(48) Date of publication of this corrected version:

22 May 2003

(15) Information about Correction:

see PCT Gazette No. 21/2003 of 22 May 2003, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.