

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
28 July 2022 (28.07.2022)



(10) International Publication Number
WO 2022/157094 A2

(51) International Patent Classification:
C07K 16/28 (2006.01) *A61P 35/00* (2006.01)
A61K 51/10 (2006.01)

(21) International Application Number:
PCT/EP2022/050831

(22) International Filing Date:
17 January 2022 (17.01.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
21152886.4 22 January 2021 (22.01.2021) EP

(71) Applicants: **BAYER AKTIENGESELLSCHAFT**
[DE/DE]; Kaiser-Wilhelm-Allee 1, 51373 Leverkusen
(DE). **BAYER AS** [NO/NO]; Drammensveien 288, 0283
Oslo (NO).

(72) Inventors: **TRAUTWEIN, Mark**; Narzissenweg 4, 42489
Wülfrath (DE). **HAGEMANN, Urs Beat**; Sonnenblu-
menweg 20a, 16548 Glienicke/Nordbahn (DE). **EL-
LINGER, Philipp**; Blaupfeilweg 29, 42697 Solingen
(DE). **MÄRSCH, Stephan**; Am Hallerhof 1, 82396 Pahl
(DE). **SCHUHMACHER, Joachim**; Lipkenskothen 31,
42113 Wuppertal (DE). **WENGNER, Antje Margret**;
Binzstr. 60, 13189 Berlin (DE). **BJERKE, Roger Maler-
bakken**; c/o Bayer AS, Drammensveien 288, 0283 Oslo
(NO). **ROIDER, Helge**; Pankower Strasse 19, 16540 Ho-
hen Neuendorf (DE).

(74) Agent: **BIP PATENTS**; Alfred-Nobel-Straße 10, 40789
Monheim am Rhein (DE).

(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, IT, 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,
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:

— without international search report and to be republished
upon receipt of that report (Rule 48.2(g))
— with sequence listing part of description (Rule 5.2(a))
— in black and white; the international application as filed
contained color or greyscale and is available for download
from PATENTSCOPE

(54) Title: **LRRC15 ANTIBODIES AND CONJUGATES THEREOF**

(57) Abstract: The present invention relates to conjugates comprising a chelator arranged for complexation of a radionuclide and a targeting moiety binding to LRRC15. For example, the conjugates according to the current invention can be targeted alpha therapeutics such as targeted thorium conjugates (TTCs), i.e. radioconjugates comprising an alpha emitter, such as ²²⁷Th. The present invention further relates to sequence-defined antibodies binding LRRC15 and antigen-binding fragments thereof. Also provided are conjugates comprising these antibodies or functional fragments thereof. The antibodies, functional fragments and conjugates according to the current invention can be used to treat cancer and other disorders and conditions associated with the expression of LRRC15. Provided are pharmaceutical compositions and kits with instructions for use comprising the antibodies, functional fragments and conjugates according to the current invention. The invention further provides methods and tools to generate the antibodies, functional fragments and conjugates according to the invention. For example, provided are polynucleotides encoding the foregoing antibodies or fragments, vectors containing the same, and cells for production.



WO 2022/157094 A2