

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
09 March 2023 (09.03.2023)



(10) International Publication Number
WO 2023/031378 A1

(51) International Patent Classification:
C12Q 1/6888 (2018.01)

(21) International Application Number:
PCT/EP2022/074412

(22) International Filing Date:
02 September 2022 (02.09.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
21194988.8 06 September 2021 (06.09.2021) EP

(71) Applicants: **EVONIK OPERATIONS GMBH**
[DE/DE]; Rellinghauser Strasse 1-11, 45128 Es-
sen (DE). **DEUTSCHES KREBSFORSCHUNGSZEN-
TRUM STIFTUNG DES ÖFFENTLICHEN RECHTS**
[DE/DE]; Im Neuenheimer Feld 280, 69120 Heidelberg
(DE).

(72) Inventors: **BÖHL, Florian**; Am Schänzel 12, 60151
Neckargemünd (DE). **LYKO, Frank**; Breitgasse 5a, 69493
Hirschberg an der Bergstraße (DE). **NAGARAJAN, San-
janaa**; Blk 521 Woodlands Drive 14, #11-357, Singapore
730521 (SG). **ROY, Suki**; #13-430, Blk 653A, Jurong
West Street 61, Singapore 641653 (SG). **TÖNGES, Si-
na**; Breitgasse 5a, 69493 Hirschberg an der Bergstraße
(DE). **VENKATESH, Geetha**; Oberlangental 22, 75045
Walzbachtal (DE). **PFEFFERLE, Walter**; Dietrich-Bon-
hoeffer-Weg 3, 35428 Langgöns (DE).

(74) Agent: **EVONIK PATENT ASSOCIATION**; c/o Evonik
Industries AG, IP Management, Bau 1042A, PB15, Paul-
Baumann-Strasse 1, 45772 Marl (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, CV, CZ, DE, DJ, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, 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:

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



WO 2023/031378 A1

(54) Title: DNA-METHYLATION-BASED CERTIFICATION OF QUALITY

(57) Abstract: The present invention relates to a method of determining the supplier from which a test animal-derived product sample originates, the method comprising the steps of: (a) determining a test methylation profile of one or more pre-selected methylation sites within the genomic material contained in the test animal-derived product sample; and (b) comparing the test methylation profile determined in (a) with a panel of predetermined reference methylation profiles of the same biological taxon of the test animal from which the product sample derives, wherein each of the predetermined reference methylation profiles is from a different reference animal and/or different supplier, wherein if the test methylation profile of (a) is significantly similar to one of the predetermined reference methylation profiles, the test animal-derived product sample is confirmed of originating from a first supplier from which a first reference animal with the predetermined reference profile is obtained.