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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
3 February 2011 (03.02.2011)

PCT

(10) International Publication Number
WO 2011/012646 A2

(51) International Patent Classification:
A61B 3/12 (2006.01) *G01N 33/58* (2006.01)
A61B 3/14 (2006.01) *G01N 21/64* (2006.01)
A61B 5/00 (2006.01) *A61K 49/00* (2006.01)

(21) International Application Number:
PCT/EP2010/060957

(22) International Filing Date:
28 July 2010 (28.07.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09166531.5 28 July 2009 (28.07.2009) EP

(71) Applicant: **F. HOFFMANN-LA ROCHE AG** [—/CH]; Grenzacherstrasse 124, CH-4070 Basel (CH).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **DOBOSZ, Michael** [DE/DE]; Sigmundstrasse 8, 82377 Penzberg (DE). **SCHEUER, Werner** [DE/DE]; Primelstrasse 3, 82377 Penzberg (DE). **STROBEL, Steffen** [DE/DE]; Schleissheimer Strasse 37, 85748 Garching (DE).

(74) Agents: **KOCH, Andreas** et al.; df-mp, Fünf Höfe, Theatinerstr. 16, 80333 Munich (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, 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, TH, 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, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(54) Title: NON-INVASIVE IN VIVO OPTICAL IMAGING METHOD

(57) Abstract: The present invention relates to a non-invasive method of determining the presence, quantifying the blood level, and/or monitoring or determining the blood clearance of a fluorescent analyte which comprises a fluorescent entity and a second entity, in the blood of a subject, comprising or consisting of the steps: (a) directing excitation light of at least one predetermined wavelength onto a delineated region comprising at least a portion of the pupil of said subject, to excite the fluorescent entity, (b) receiving light emitted from said fluorescent analyte with a wavelength distinguishable from the predetermined wavelength of (a), through the eye of said subject, thereby determining the presence, quantifying the blood level, and/or monitoring or determining the blood clearance of said fluorescent analyte in the blood of said subject. The present invention further relates to a fluorescent analyte or fluorescent label as defined in any one of the preceding claims for use in any one of the preceding methods. The present invention furthermore relates to the use of a fluorescent analyte or fluorescent label as defined in any one of the preceding claims for the preparation of a diagnostic composition which is to be employed in any one of the preceding methods. The present invention furthermore relates to a device for use in any of the methods defined herein.

WO 2011/012646 A2