



- (51) **International Patent Classification:**
Not classified
- (21) **International Application Number:**
PCT/SG2022/050552
- (22) **International Filing Date:**
02 August 2022 (02.08.2022)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
10202108448V 02 August 2021 (02.08.2021) SG
- (71) **Applicants:** **NATIONAL UNIVERSITY OF SINGAPORE** [SG/SG]; 21 Lower Kent Ridge Road, Singapore 119077 (SG). **SINGAPORE HEALTH SERVICES PTE LTD** [SG/SG]; 10 Hospital Boulevard, #19-01, Singapore 168582 (SG). **MIRXES LAB PTE. LTD.** [SG/SG]; 3 Biopolis Drive, Synapse, #01-15, Singapore 138623 (SG). **NATIONAL UNIVERSITY HOSPITAL (SINGAPORE) PTE LTD** [SG/SG]; 1E Kent Ridge Road, #13-00, Singapore 119228 (SG).
- (72) **Inventors:** **BO ANDERS, Mikael Hartman**; c/o National University Hospital (Singapore) Pte Ltd, Department of Surgery, NUHS Tower Block, 1E Kent Ridge Road, Singapore 119228 (SG). **TOO, Heng-Phon**; c/o National Uni-

versity of Singapore, Yong Loo Lin School of Medicine / Dept of Biochemistry, 21 Lower Kent Ridge Road, Singapore 119077 (SG). **LEE-LIM, Siew Gek, Ann**; c/o National Cancer Centre of Singapore Pte Ltd, 11 Hospital Crescent, Singapore 169610 (SG). **ZOU, Ruiyang**; c/o MiRXES Lab Pte. Ltd., 3 Biopolis Drive, Synapse #01-15, Singapore 138623 (SG). **ZHOU, Lihan**; c/o MiRXES Lab Pte. Ltd., 3 Biopolis Drive, Synapse #01-15, Singapore 138623 (SG). **CHENG, He**; c/o MiRXES Lab Pte. Ltd., 3 Biopolis Drive, Synapse #01-15, Singapore 138623 (SG).

- (74) **Agent:** **SPRUSON & FERGUSON (ASIA) PTE LTD**; P.O. Box 1531, Robinson Road Post Office, Singapore 903031 (SG).

- (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.

- (54) **Title:** CIRCULATING MICRORNA PANEL FOR THE EARLY DETECTION OF BREAST CANCER AND METHODS THEREOF

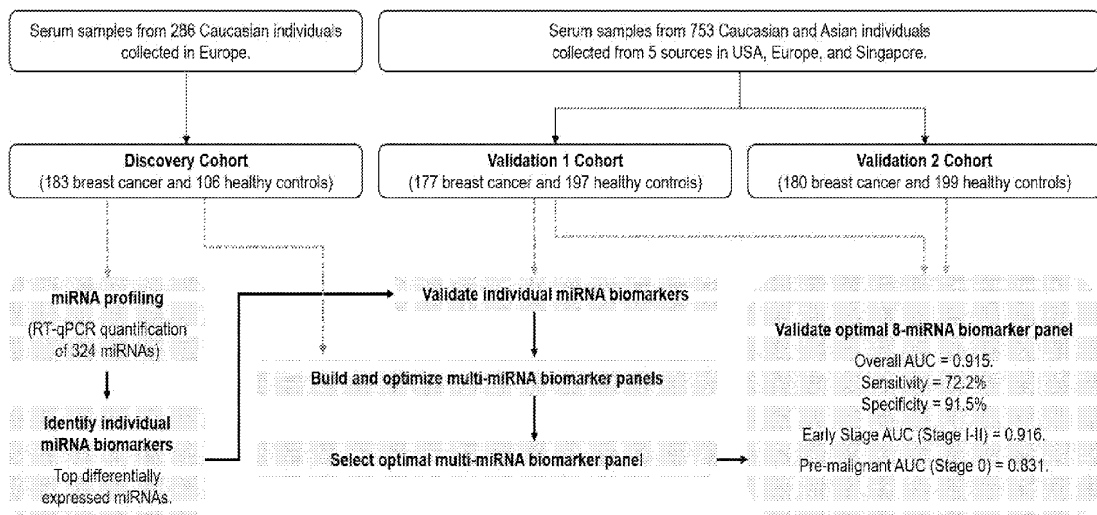


FIGURE 6

- (57) **Abstract:** Disclosed herein is a method for determining whether a subject is suffering from, or is at risk of developing breast cancer, wherein the method comprises detecting differential expression levels of at least two or more miRNA markers from a biological sample. Also disclosed herein is a method of determining whether a subject is suffering from, or is at risk of developing, breast cancer based on miRNA expression.

(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:

— *of inventorship (Rule 4.17(iv))*

Published:

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