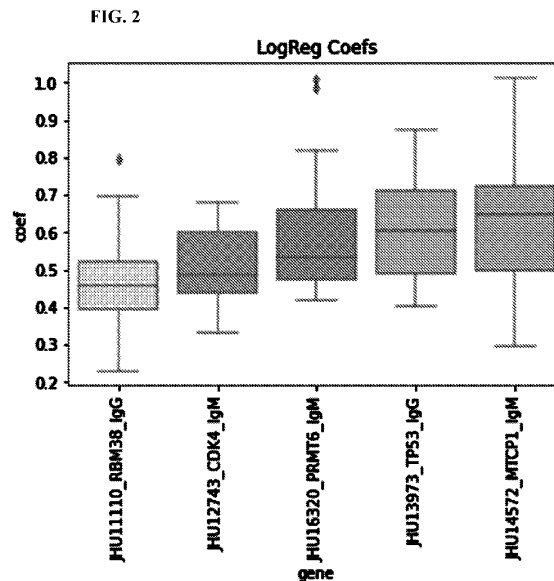




- (51) International Patent Classification:
G01N 33/53 (2006.01) *G01N 33/574* (2006.01)
- (21) International Application Number:
PCT/US2021/052816
- (22) International Filing Date:
30 September 2021 (30.09.2021)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
63/087,728 05 October 2020 (05.10.2020) US
- (71) Applicant: **FREENOME HOLDINGS, INC.** [US/US];
279 East Grand Avenue, 5th Floor, South San Francisco,
California 94080 (US).
- (72) Inventors: **O'DONOVAN, Brian D.**; 279 East Grand Avenue, 5th Floor, South San Francisco, California 94080 (US). **MAHAJAN, Shivani**; 279 East Grand Avenue, 5th Floor, South San Francisco, California 94080 (US).
- (74) Agent: **CHOW, Carmen**; WILSON SONSINI GOODRICH & ROSATI, 650 Page Mill Road, Palo Alto, California 94304 (US).
- (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,

(54) Title: MARKERS FOR THE EARLY DETECTION OF COLON CELL PROLIFERATIVE DISORDERS



(57) Abstract: Systems, media, compositions, methods, and kits disclosed herein relate to a panel of autoantibody biomarkers for the early detection of colon cell proliferative disorders, including colorectal cancer. The presence or levels of the autoantibodies in a biological sample for the autoantibody panels described herein may be used for classifier generation, and as inputs in machine learning models useful to classify subjects in a population for the detection of colon cell proliferative disorders.

[Continued on next page]

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))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*