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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
14 June 2007 (14.06.2007)

PCT

(10) International Publication Number
WO 2007/067632 A2

(51) International Patent Classification:
A61B 5/04 (2006.01)

(21) International Application Number:
PCT/US2006/046570

(22) International Filing Date:
6 December 2006 (06.12.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/742,830 6 December 2005 (06.12.2005) US

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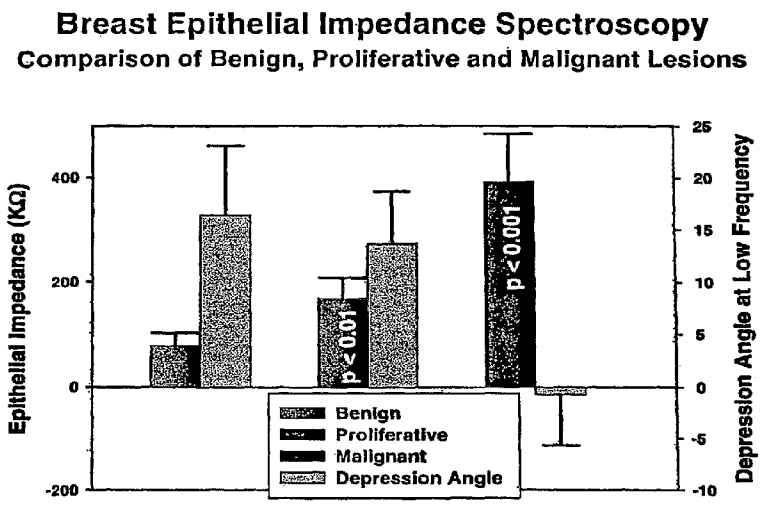
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, 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*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND SYSTEM FOR DETECTING ELECTROPHYSIOLOGICAL CHANGES IN PRE-CANCEROUS AND CANCEROUS TISSUE AND EPITHELIUM



(57) Abstract: Methods and apparatus are provided for determining the condition of selected regions of epithelial and stromal tissue. A plurality of electrodes are used to measure surface and transepithelial electropotential of tissue, especially breast tissue, as well as surface electropotential and impedance at one or more locations and at several defined frequencies, particularly low frequencies. An agent may be introduced into the region of tissue to enhance electrophysiological response characteristics. Measured and derived electrical properties facilitating diagnosis include DC potential, impedance, subepithelial resistance, epithelial resistance, capacitance, characteristic frequency, depression angle and transepithelial potential. Ambient and varying pressure measurements applied to epithelial tissue are also used for diagnosis. Improved diagnosis of tissue condition can be made based on the electrical properties and tissue electrophysiological response to altered ion transport and pressure. Devices for practicing the disclosed methods are also provided.

WO 2007/067632 A2