



(43) International Publication Date
23 June 2016 (23.06.2016)

(10) International Publication Number
WO 2016/097960 A2

- (51) **International Patent Classification:**
B02C 18/36 (2006.01) *B02C 18/10* (2006.01)
B02C 19/20 (2006.01)
- (21) **International Application Number:**
PCT/IB2015/059571
- (22) **International Filing Date:**
14 December 2015 (14.12.2015)
- (25) **Filing Language:** Italian
- (26) **Publication Language:** English
- (30) **Priority Data:**
MI2014A002143 15 December 2014 (15.12.2014) IT
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- (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, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, 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, 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, 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).

Published:

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

(54) **Title:** DISGREGATING DEVICE OF BIOLOGICAL MATERIAL AND CORRESPONDING MANUFACTURING METHOD AND METHOD FOR THE PREPARATION OF CELL SUSPENSIONS AND TISSUE MICROGRAFTS

(57) **Abstract:** A disaggregating device (10) of biological material, comprising: - a hollow outer body (11), defining an inner chamber (12); - a fixed disaggregating grid (13), having a plurality of microholes (13a) provided with sharp edges, and housed transversely in the inner chamber (12) so as to define an upper loading chamber (12a) apt to be loaded with the biological material (MB) to be disaggregated and a lower collecting chamber (12b) apt to collect the biological material (MB'), after it has been disaggregated; and - a bladed rotor (14), rotating in the inner chamber (12), apt to co-operate, rotating, with the fixed disaggregating grid (13), so as to feed and bring the biological material (MB), contained in the upper loading chamber (12a), into contact with the microholes (13a) of the disaggregating grid (13) and therefore cause the disaggregation of the biological material (MB') making it pass through these microholes. The microholes (13a) of the disaggregating grid have dimensions or a diameter comprised between 70 and 80 µm, and are obtained by means of a moulding process of the die-punch type, using a conical or polygonal punch (P) to draw and tear a metal sheet (N) of stainless steel, so as to have each one a jagged sharp edge with several tips, for example six, or also using, again within the sphere of a process of moulding of the die-punch type, a source of laser light. As ascertained by thorough experimental tests, thanks to the special features and configuration of the microholes (13a), it is possible to prepare by means of the disaggregating device (10), without the aid of chemical reagents, cell suspensions and tissue micrografts which maintain intact and unaltered the features, the functions and the viability of the original biological material, non-disaggregated, and which can therefore be advantageously be used in numerous medical, veterinary and cosmetic applications.

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