

(43) International Publication Date
3 January 2013 (03.01.2013)

- (51) International Patent Classification:
C12N 5/00 (2006.01) *C12N 5/075* (2010.01)
- (21) International Application Number:
PCT/US2012/033672
- (22) International Filing Date:
13 April 2012 (13.04.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/502,840 29 June 2011 (29.06.2011) US
61/600,529 17 February 2012 (17.02.2012) US
- (71) Applicants (for all designated States except US): **THE GENERAL HOSPITAL CORPORATION** [US/US]; 55 Fruit Street, Boston, MA 02114 (US). **PRESIDENT AND FELLOWS OF HARVARD COLLEGE** [US/US]; 17 Quincy Street, Cambridge, MA 02138 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **TILLY, Jonathan, Lee** [US/US]; 39 Mockingbird Hill Road, Windham, NH

03087 (US). **SINCLAIR, David, A.** [AU/US]; 43 Newbrook Circle, Chestnut Hill, MA 02467 (US).(74) Agents: **LAURO, Peter C.** et al.; Edwards Wildman Palmer LLP, P.o. Box 55874, Boston, MA 02205 (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, 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, QA, RO, RS, RU, RW, 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, 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,

[Continued on next page]

(54) Title: COMPOSITIONS AND METHODS FOR ENHANCING BIOENERGETIC STATUS IN FEMALE GERM CELLS

(57) Abstract: Compositions and methods comprising bioenergetic agents for restoring the quality of aged oocytes, enhancing oogonial stem cells or improving derivatives thereof (e.g., cytoplasm or isolated mitochondria) for use in fertility-enhancing procedures, are described.

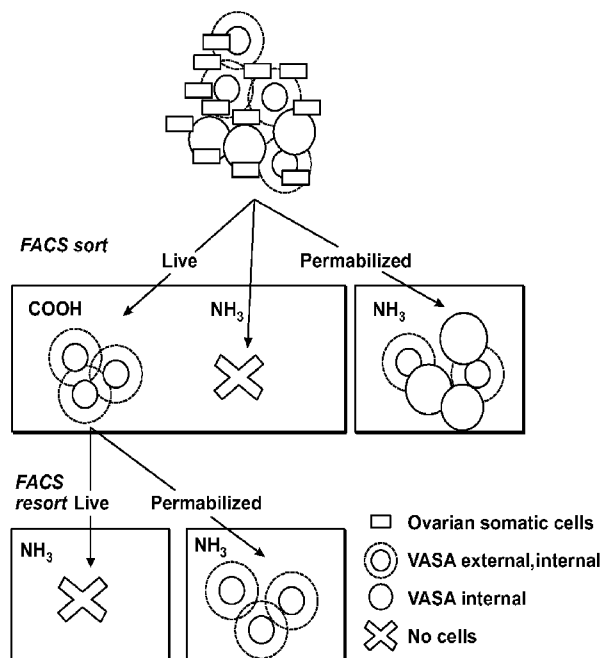


FIG. 1E



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, ML, MR, NE, SN, TD, TG).

— *with amended claims (Art. 19(1))*

Date of publication of the amended claims: 21 February 2013

Published:

— *with international search report (Art. 21(3))*