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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 May 2011 (26.05.2011)

PCT

(10) International Publication Number
WO 2011/062559 A1

(51) International Patent Classification:
C12N 5/0789 (2010.01) *C12N 5/10* (2006.01)
C12N 5/071 (2010.01)

(21) International Application Number:
PCT/SG2010/000437

(22) International Filing Date:
18 November 2010 (18.11.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/262,741 19 November 2009 (19.11.2009) US
201000825-8 6 February 2010 (06.02.2010) SG

(71) Applicant *(for all designated States except US)*: **AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH** [SG/SG]; 1 Fusionopolis Way, #20-10 Connexis, Singapore 138632 (SG).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **LIM Bing** [SG/SG]; Genome Institute of Singapore, 60 Biopolis Street, Genome, #08-01, Singapore 138672 (SG). **HAN Jianyong** [CN/SG]; Genome Institute of Singapore, 60 Biopolis Street, Genome, #08-01, Singapore 138672 (SG). **TAM Wai-Leong** [SG/SG]; Genome Institute of Singapore, 60 Biopolis Street, Genome, #08-01, Singapore 138672 (SG).

(74) Agent: **KHOO Chong Yee**; Cantab LLP, VBox 881846, Singapore 919191 (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, 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, RO, RS, RU, 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, 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, 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).

Declarations under Rule 4.17:

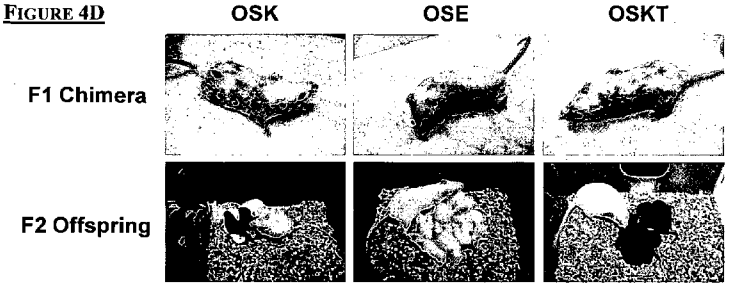
— *of inventorship (Rule 4.17(iv))*

Published:

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

WO 2011/062559 A1

(54) Title: METHODS OF ENHANCING PLURIPOTENTCY



(57) Abstract: We provide for the use of Tbx3 (GenBank Accession Number: NM 005996.3, NP 005987.3, NM_016569.3, NP_057653.3) in a method of enhancing or inducing pluripotency in a cell such as a somatic cell. We describe a method of reprogramming a cell, the method comprising modulating the expression and/or activity of Tbx3 in the cell. The cell may become a pluripotent cell such as a stem cell. We further describe a method of causing a cell such as a somatic cell to display one or more characteristics of a pluripotent cell, the method comprising modulating the expression and/or activity of Tbx3 in the cell. The method may further comprise modulating the expression and/or activity of one or more, a combination of or all of Oct4, Sox2 and Klf4 in the cell.