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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 April 2011 (07.04.2011)

PCT

(10) International Publication Number
WO 2011/041393 A1

(51) International Patent Classification:
G01N 33/48 (2006.01)

(21) International Application Number:
PCT/US2010/050695

(22) International Filing Date:
29 September 2010 (29.09.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/246,967 29 September 2009 (29.09.2009) US

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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, 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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

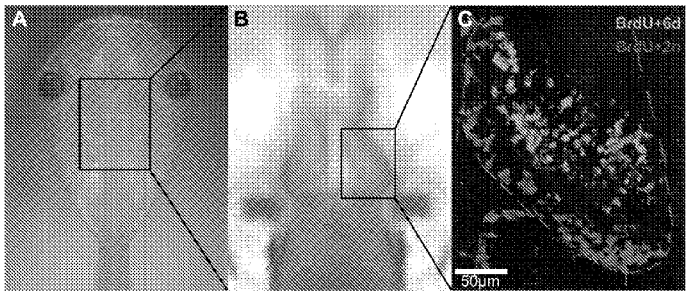
Published:

— *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))*

— *with sequence listing part of description (Rule 5.2(a))*

(54) **Title**: GENES, METHODS, AND COMPOSITIONS RELATED TO NEUROGENESIS AND ITS MODULATION



Xenopus laevis and the retinotectal system. (A) Transparent tadpole with the brain boxed. (B) The brain with a lobe of the optic tectum boxed. (C) Superimposed examples of BrdU incorporation within the tectal lobe at 2h (red) and 6 day (green) survival times.

FIG. 1

(57) **Abstract**: The present disclosure provides methods for investigating neurogenesis, neural cell proliferation and differentiation. Specifically, the present disclosure relates to methods for identifying pharmaceutical agents capable of modulating neurogenesis and neural cell proliferation, methods of screening for genes that modulate neurogenesis and proliferation of neural progenitor cells, and methods of identifying pharmaceutical agents as candidate modulators of neurogenesis and neural proliferation or differentiation. The present disclosure also relates to methods for identifying pharmaceutical agents to characterize and modulate neurogenesis, pharmaceutical agents identified by such methods, methods for treating patients with such pharmaceutical agents, and compositions containing such pharmaceutical agents. Accordingly, the present methods enable elucidation of the mechanisms that control neurogenesis, brain development and function in healthy animals and in disorders of the nervous system. Furthermore, the present methods facilitate the development of compositions to prevent, improve or stabilize impaired neurogenesis in various nervous system disorders, including cognitive disorders.

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