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(71) Applicant: **ASTERIAS BIOTHERAPEUTICS, INC.** [US/US]; 2173 Salk Avenue, Suite 200, Carlsbad, California 92008 (US).

(72) Inventors: **ONISHI, Kento**; 2173 Salk Avenue, Suite 200, Carlsbad, California 92008 (US). **MANLEY, Nathan C.**; 2173 Salk Avenue, Suite 200, Carlsbad, California 92008 (US). **HALBERSTADT, Craig R.**; 2173 Salk Avenue, Suite 200, Carlsbad, California 92008 (US). **WHITELEY, Erik M.**; 2173 Salk Avenue, Suite 200, Carlsbad, California 92008 (US).

(74) Agent: **WAACK, Janelle D.**; Bass, Berry & Sims PLC, P.O. Box 14532, Washington, District of Columbia 20044 (US).

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(54) Title: DORSALLY-DERIVED OLIGODENDROCYTE PROGENITOR CELLS FROM HUMAN PLURIPOTENT STEM CELLS

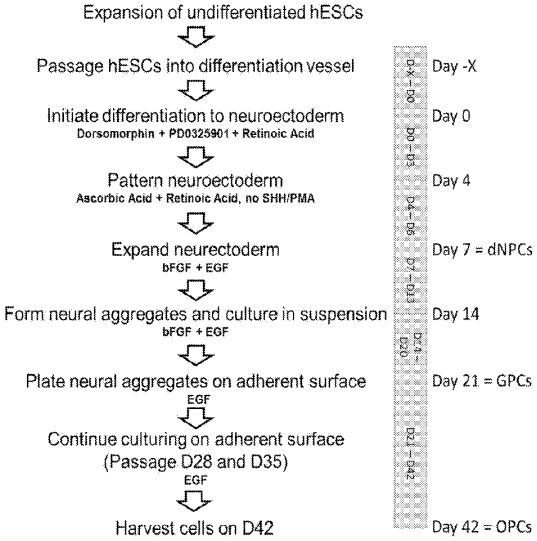


FIG. 1

(57) Abstract: Methods for differentiating human pluripotent stem cells to dorsal neuroectoderm progenitors and further to glial progenitor cells and oligodendrocyte progenitor cells (OPCs) using inhibitors of BMP signaling and MAPK/ERK signaling are provided. Also provided are cells and cellular compositions obtained by such methods, and uses of such cells. Further provided are methods and protocols for efficiently differentiating human pluripotent stem cells to OPCs in the absence of the ventralizing morphogen SHH or a SHH signaling activator. The methods of the present disclosure reproducibly produce dorsal neuroectoderm progenitor cells by day 7 of the differentiation process, glial progenitor cells by day 21 of the differentiation process and OPCs by day 42 of the differentiation process.

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