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(71) Applicant: **STEMGENICS, INC.** [US/US]; 454 N. 34th Street, Seattle, WA 98103 (US).

(72) Inventor: **APRIKYAN, Andranik Andrew**; 454 N. 34th Street, Seattle, WA 98103 (US).

(74) Agent: **NOWAK, Thomas S.**; Christensen O'Connor Johnson Kindness PLLC, 1201 Third Avenue, Suite 3600, Seattle, WA 98101 (US).

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(54) Title: DIRECT REPROGRAMMING OF A HUMAN SOMATIC CELL TO A SELECTED (PREDETERMINED) DIFFERENTIATED CELL WITH FUNCTIONALIZED NANOPARTICLES

(57) Abstract: This disclosure relates to compositions and methods for reprogramming an initial cell (e.g., somatic cell) to generate specialized cell types of interest, such as cardiac, hepatic, blood, neuronal and other cells from human somatic cells. In some embodiments, initial (e.g., somatic) cell is a human cell thus producing human induced cell types of interest. In some embodiments, the compositions and methods incorporate nanoparticles functionalized with biologically active molecules (RNAs, proteins, peptides and other small molecules). These newly generated (i.e., "induced") specialized cells are useful to improve organ function and/or tissue regeneration (heart, liver, etc.) and to screen drugs for functional activity.



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