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Hongran Wang, Shuying Zhao, Richard H. Finnell, Timothy George, Austin J. Cooney

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Generation of Integration-free induced pluripotent stem cells from a patient with spina bifida

Hongran Wang[1], Shuying Zhao[1], Richard H. Finnell[1,1], Timothy George[1,2] and Austin J. Cooney[1,*] austin.cooney@austin.utexas.edu

[1]Department of Pediatrics, Dell Pediatric Research Institute, Dell Medical School, University of Texas at Austin, Austin, Texas 78723
[2]Department of Surgery and Perioperative Care, Dell Medical School, University of Texas at Austin, Austin, Texas 78723

[*]Corresponding author.

Abstract

A skin biopsy was obtained from a 14-year-old female patient with a history of Myelomeningocele. Dermal fibroblasts were isolated and reprogrammed with Sendai virus (SeV) vectors encoding *OCT3/4*, *SOX2*, *KLF4*, and *c-MYC*. The generated induced Pluripotent Stem Cell (iPSC) clones NTDi4_09A were free of genomically integrated reprogramming genes, had a stable normal karyotype and expressed pluripotency markers. The iPSCs formed teratomas in mice, which were differentiated towards derivatives of the three germ layers *in vivo*. This iPSC line offers a useful resource to study a genetic profile of a patient with spina bifida.

Resource utility

Meningomyelocele is a complex congenital malformation. It is unclear exactly what causes spina bifida, likely due to a combination of genetic, environmental and nutritional factors. The

[1] Current Address: Departments of Molecular and Cellular Biology and Medicine, Baylor College of Medicine, Houston, Texas 77030