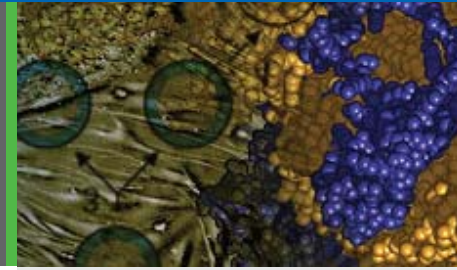


Transdifferentiation Factors

Expression vectors to directly convert one cell type to another



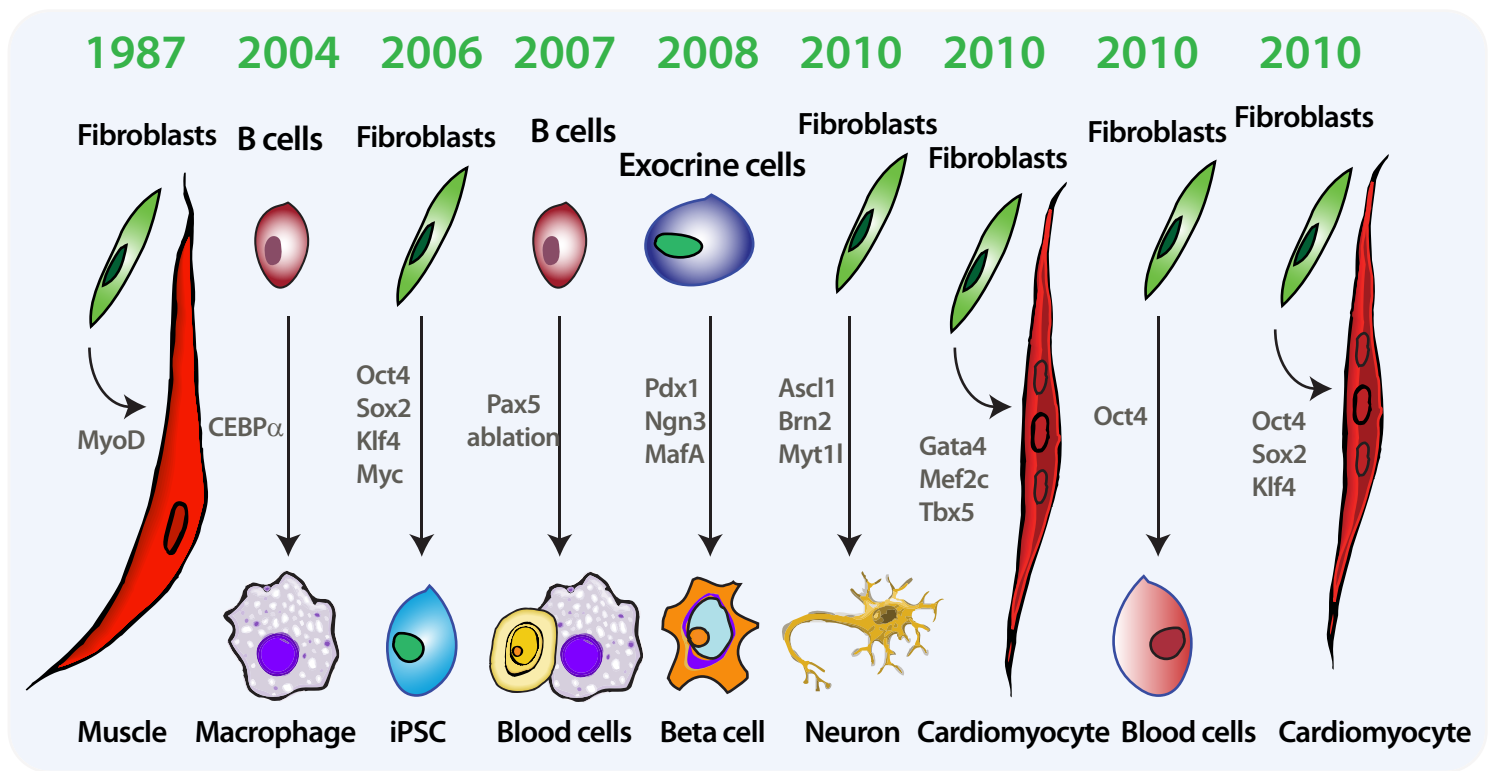
Reprogram Cellular Identities

Transdifferentiation (TD) is the direct conversion of one cell type to another. This reprogramming method provides a fast route for creating novel cell types and manufacturing functional tissues. TD enables the generation of patient-specific cell types without the risk of creating potentially tumorigenic induced pluripotent stem cells before differentiation. The TD-Consortium, offered by SBI, includes collections of transcription factors and microRNA precursors built in constitutive or inducible vector formats to allow you to harness the TD technology and advance regenerative medicine research.

Highlights

- Large collection of transcription factors and microRNAs
- Explore novel conversion cocktails
- Fast routes to make patient-specific cells and tissues
- Constitutive and inducible vector formats

Recent History of Transdifferentiation



Cells go from Point A to Point B without "Passing Go"

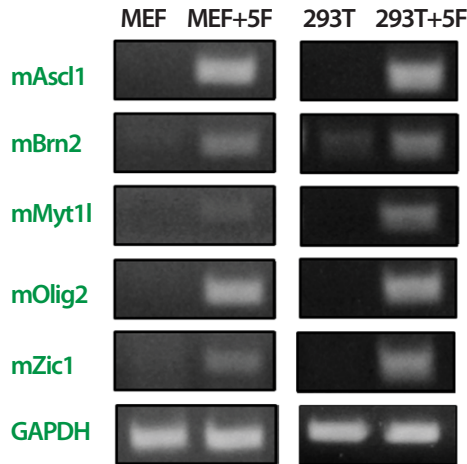
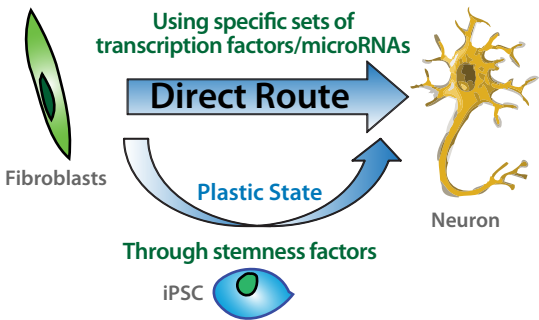
Transdifferentiation Factors

TD Factors in Action - Direct Conversion of Fibroblasts to Neurons

SBI's TD clone collection includes the mouse factors known to directly convert fibroblasts to neurons (Ascl1, Brn2, Myt1l, Olig2, and Zic1) as published in *Wernig et al., Nature 2010*. These vectors are expression-verified and functionally validated to convert mouse embryonic fibroblasts (MEFs) and tail fibroblasts directly to "Induced Neurons".

Three TD Clone Formats to choose from:

- Constitutive Lentivector expression
- Inducible Lentivector expression
- Minicircle nonviral vector expression

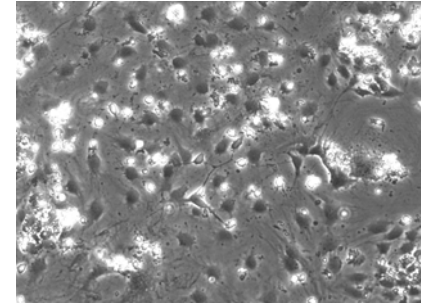


RT-PCR expression analysis

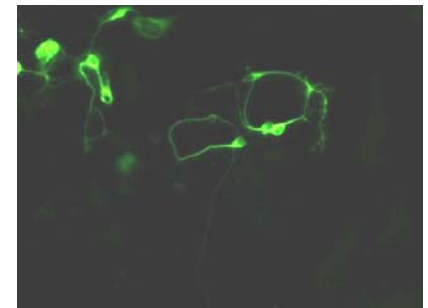
Expression analysis and functional validation of the transdifferentiation factors Ascl1, Brn2, Myt1l, Olig2, and Zic1. Robust transcripts can be detected by RT-PCR and MEF induced neuronal cells using display complex neuronal morphology and express Tuj1 12 days after infection with five transcription factors.

MEF Induced Neuronal Cells

Phase



Tuj1 immunostain



Highlights from the TD Collection

For entire list visit: www.systembio.com/tdfactors

Cardiomyocyte Factors	Neuronal Factors	Neuronal microRNAs	Hepatic Factors	Myocyte Factors	Stemness Factors
hTbx5	h/mBrn2	hsa-miR-9-1	hGata4	hMyoD	hOct4
hMef2c	hAscl1	hsa-miR-124	hProx1	Myocyte microRNAs	hSox2
hGata4	hMyt1l	hsa-miR-371-3	hFoxa1	mmu-miR-133	hLin28
hMesp1	hZic1	mmu-miR-9-1	hFoxa2	mmu-miR-143	hNanog
mTbx5	hKlf4	mmu-miR-124-1	hFoxa3	mmu-miR-145	hKlf4
mMef2c	hNeuroD1	Beta-cell Factors	HNF1	hsa-miR-133	hcMyc
mGata4	hNeuroD2	hNgn3	HNF4a	hsa-miR-143	Stemness microRNAs
mTMG (3-in-1)	hLmx1a	hPdx1	Osteoclast Factors	hsa-miR-145	hsa-miR-302bcad/367
Cardiomyocyte microRNAs	mAscl1	Endothelium Factors	hC-Fos	Stemness Factors	hsa-miR-200c
mmu-miR-1-1	mMyt1l	hRunx1	hMitf	Lin28+Nanog+Sox2+Oct4	hsa-miR-369
hsa-miR-1-1	mZic1	hC-Myb	hTfe3		

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