

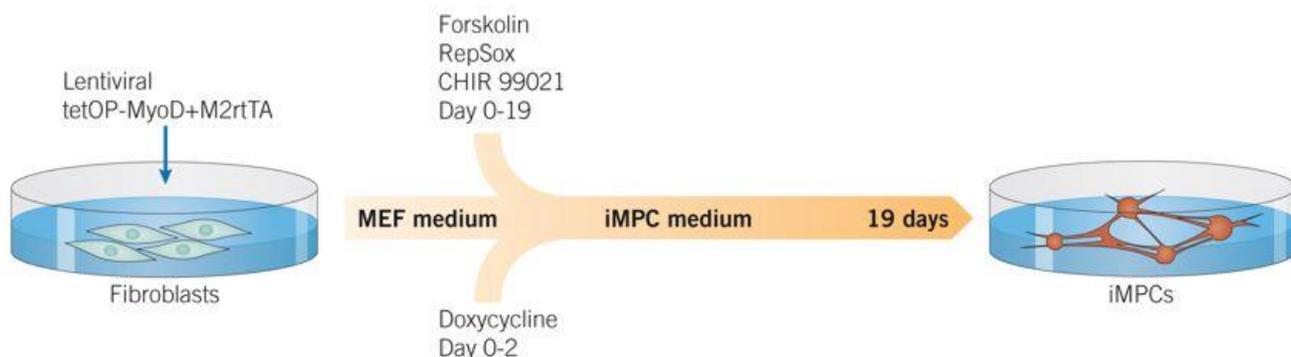
Reprogramming MEFs into Skeletal Muscle Progenitors

This is intended as a guide only; for full experimental details please read the reference provided.

In Brief

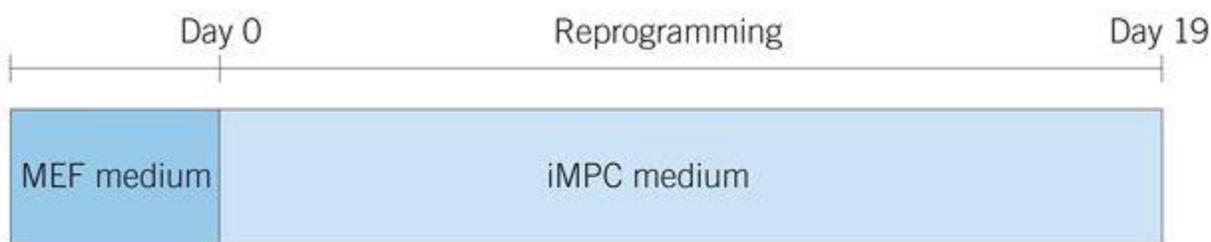
Bar-Nur et al. describe a protocol for the direct reprogramming of mouse fibroblasts into expandable functional skeletal muscle progenitors.

Mouse embryonic fibroblasts (MEF) or tail tip fibroblasts (TTF) transduced with a doxycycline-inducible lentiviral vector, allowing inducible expression of the transcription factor MyoD, were cultured in MEF medium. On day 0, fibroblast culture medium was exchanged for induced myogenic progenitor cell (iMPCs) medium, which resulted in iMPCs expressing key skeletal muscle stem and progenitor cell markers, by day 19. iMPCs could be maintained for at least 6 months in the presence of small molecules and formed dystrophin-expressing myofibers when transplanted into mice. Muscle cells cultured in iMPC medium also established MPC-like colonies.



Cocktails

MEF Medium		iMPC Medium Day 0-2		iMPC Medium Day 0-19	
bFGF	10 ng/ml	Doxycycline hyclate (Cat.No. 4090)	2 µg/ml	bFGF	10 ng/ml
				Forskolin (Cat.No.1099)	5 µM
				RepSox (Cat.No. 3742)	5 µM
				CHIR 99021 (Cat.No. 4423)	3 µM



Reference

Bar-Nur *et al.* (2018) Direct reprogramming of mouse fibroblasts into functional skeletal muscle progenitors. *Stem Cell Reports* **10** 1505 PMID: [29742392](https://pubmed.ncbi.nlm.nih.gov/29742392/)