

Materials List for:

Differentiating Chondrocytes from Peripheral Blood-derived Human Induced Pluripotent Stem Cells

Yueying Li², Yong Hai¹, Jiayu Chen³, Tie Liu¹

¹Department of Orthopedics, Beijing Chao-Yang Hospital, Capital Medical University

²Key Laboratory of Genomic and Precision Medicine, Beijing Institute of Genomics, Chinese Academy of Sciences

³Clinical and Translational Research Center of Shanghai First Maternity & Infant Hospital, School of Life Sciences and Technology, Tongji University

Correspondence to: Tie Liu at waterkins@163.com

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Materials

Name	Company	Catalog Number	Comments
Knockout DMEM	Invitrogen	10829018	Basal medium used for hiPSC culture and EB formation medium
Knockout Serum Replacement (KSR)	Invitrogen	10828028	A more defined, FBS-free medium supplement used for hiPSC culture and EB formation medium
Fetal bovine serum (FBS)	Hyclone	sh30070.03	Used for hiPSC culture and EB formation medium, offers excellent value for cell culture
Nonessential amino acids	Chemicon	TMS-001-C	Used as a growth supplement in all the cell culture medium, to increase cell growth and viability
L-glutamine	Invitrogen	TMS-002-C	An amino acid required for cell culture
Basic fibroblast growth factor (bFGF)	Peprotech	100-18B	A cytokine used for sustaining the pluripotency and self-renewal of hiPSCs
Dispase	Invitrogen	17105041	Used for hiPSC dissociation for subculture
DMEM	Gibco	C11960	Basal medium used for MSC culture medium
0.1% gelatin	Millipore	ES-006-B	Used for cell attachment onto the dishes
0.25% trypsin/EDTA	Gibco	25200072	Used for cell dissociation
DPBS	Gibco	14190250	A balanced salt solution used for cell wash or reagent preparing
2-mercaptoethanol	invitrogen	21985023	Used as a growth supplement in all the cell culture medium.
ITS	invitrogen	41400045	Insulin, Transferrin, Selenium Solution. Used for chondrogenic differentiation.
Ascorbic acid	Sigma	4403	Known as vitamin C. It helps in active growth and has antioxidant property.
Sodium pyruvate	Gibco	11360070	Added to cell culture medium as an energy source in addition to glucose.
Transforming growth factor-beta 1	Peprotech	AF-100-21C	A cytokine that regulate cell proliferation, growth and chondrogenic differentiation.

Rabbit polyclonal antibodies against Collagen II	Abcam	ab34712	This antibody reacts with Type II collagens, which is specific for cartilaginous tissues.
Mouse monoclonal antibodies to Collagen X	Abcam	ab49945	This antibody reacts with Type X collagen, which is a product of hypertrophic chondrocytes.
Permunt	Fisher Scientific	SP15-100	For mounting and long-term storage of slides
Toluidine blue	Sigma	89640	Used for proteoglycans detection.
Alcian blue	Amresco	#0298	Used for glucosaminoglycans detection.
Papain	Sigma	P4762-25MG	Used to digest chondrogenic pellets.
Dimethylmethylene blue	Sigma	341088-1G	Used to quantitate glycosaminoglycans
Chondroitin sulfate sodium salt from shark cartilage	Sigma	C4384-250MG	Used to draw the standard curve for sGAG content measurement.
Qubit dsDNA HS assay kit	Invitrogen	Q32851 (100)	Used to determine DNA content
TRIzol	Invitrogen	15596018	Used for RNA isolation from cells
Reverse Transcriptase System	Promega	A3500	Used to convert RNA into cDNA
SYBR FAST qPCR kit Master Mix	Kapa	KK4601	Used for Real-time PCR