

Materials List for

# Human Mesenchymal Stem Cell Processing for Clinical Applications Using a Closed Semi-Automated Workflow

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## Materials

Name	Company	Catalog Number	Comments
2L PVC transfer bag	TerumoBCT	BB*B200TM	
Alcian blue solution, pH 2.5	Merck	101647	
Alizarin-Red Staining Solution	Merck	TMS-008-C	
APC anti-human CD73 Antibody	Biologend	344015	
APC Mouse IgG1, κ Isotype Ctrl (FC) Antibody	Biologend	400121	
Bio-Plex MAGPIX Multiplex Reader	Bio-Rad		
Counterflow Centrifugation System	Thermo Fisher Scientific	A47679	Gibco CTS Rotea Counterflow Centrifugation System
Crystal Violet	Sigma-aldrich	C0775	
CTS (L-alanyl-L-glutamine) GlutaMAX supplement	Thermo Fisher Scientific	A1286001	
CTS Dulbecco's phosphate-buffered saline (DPBS)	Thermo Fisher Scientific	A1285601	no calcium, no magnesium
CTS Recombinant Human Vitronectin (VTN-N)	Thermo Fisher Scientific	A27940	
CTS TrypLE Select Enzyme	Thermo Fisher Scientific	A1285901	
Custom tubing assembly	Saint-Gobain and Colder Product Company (CPC)	N/A	Gamma-sterilized 3/32" ID PVC line fitted with a sterile male MPC (1/8" barb) and sealed on the other end. Autoclave a short C-Flex line fitted with a sterile Cell Factory port connector on one end and a female MPC (3/8" barb) on the other. Connect the PVC and C-Flex lines in a biosafety cabinet
Emflon II capsule (0.2um filter)	Pall	KM5V002P2G100	
Fetal Bovine Serum (FBS)	Thermo Fisher Scientific	12662029	Mesenchymal stem cell-qualified, USDA-approved regions
FGF-basic	Thermo Fisher Scientific	PHG0024	
FITC anti-human CD105 Antibody	Biologend	323203	
FITC anti-human CD45 Antibody	Biologend	304005	

FITC anti-human CD90 (Thy1) Antibody	Biolegend	328107	
FITC Mouse IgG1, $\kappa$ Isotype Ctrl (FC) Antibody	Biolegend	400109	
Hi-Flow Single Use Kit	Thermo Fisher Scientific	A46575	Gibco CTS Rotea Hi-flow single-use kit, flow rate of 30 – 165 mL/min
Multi-layered systems	Thermo Fisher Scientific	140360 (4-layers); 140410 (10-layers)	Nunc Standard Cell Factory Systems
NucleoCounter NC-3000	Chemometec	NC-3000	
Oil red O staining solution	Merck	102419	
PDGF-BB	Thermo Fisher Scientific	PHG0045	
Penicillin-Streptomycin	Thermo Fisher Scientific	15140122	
PerCP anti-human CD34 Antibody	Biolegend	343519	
PerCP Mouse IgG1, $\kappa$ Isotype Ctrl Antibody	Biolegend	400147	
ProcartaPlex Multiplex Immunoassays	Thermo Fisher Scientific		Custom 19-Plex panel: FGF-2, HGF, IDO, IL-10, IL-1RA, IL-6, IL-8, IP-10, MCP-1, MCP-2, MIP-1 $\alpha$ , MIP-1 $\beta$ , MIP-3 $\alpha$ , PDGF-BB, RANTES, SDF-1 $\alpha$ , TGF $\alpha$ , TNF-alpha, VEGF-A
Sample port	Thermo Fisher Scientific	A50111	Gamma-sterilized leur sample port with 2 PVC lines attached
StemPro Adipogenesis Differentiation Kit	Thermo Fisher Scientific	A10070-01	
StemPro Chondrocyte Differentiation	Thermo Fisher Scientific	A10071-01	
StemPro Custom MSC SF XF Medium Kit (SFM XF medium)	Thermo Fisher Scientific	ME20236L1	Contains StemPro MSC SFM Basal Medium and Custom MSC SF XF Supplement (100x)
StemPro Osteogenesis Differentiation Kit	Thermo Fisher Scientific	A10072-01	
T175 Nunc EasYFlask	Thermo Fisher Scientific	159910	
T75 Nunc EasYFlask	Thermo Fisher Scientific	156472	
TGF $\beta$ 1	Thermo Fisher Scientific	PHG9204	
WJ MSCs	PromoCell	(#C12971; Germany)	Human mesenchymal stem cells
$\alpha$ MEM media	Thermo Fisher Scientific	12571063	With nucleosides