

Materials List for:

Isolation and Characterization of Human Umbilical Cord-derived Mesenchymal Stem Cells from Preterm and Term Infants

Sota Iwatani¹, Makiko Yoshida², Keiji Yamana¹, Daisuke Kurokawa¹, Jumpei Kuroda¹, Khin Kyae Mon Thwin¹, Suguru Uemura¹, Satoru Takafuji¹, Nanako Nino¹, Tsubasa Koda¹, Masami Mizobuchi⁴, Masahiro Nishiyama¹, Kazumichi Fujioka¹, Hiroaki Nagase¹, Ichiro Morioka⁵, Kazumoto Iijima¹, Noriyuki Nishimura¹

¹Department of Pediatrics, Kobe University Graduate School of Medicine

²Department of Pathology, Kobe Children's Hospital

³Department of Pediatrics, Hyogo College of Medicine

⁴Department of Developmental Pediatrics, Shizuoka Children's Hospital

⁵Department of Pediatrics, Nihon University School of Medicine

Correspondence to: Noriyuki Nishimura at nnishi@med.kobe-u.ac.jp

URL: <https://www.jove.com/video/58806>

DOI: [doi:10.3791/58806](https://doi.org/10.3791/58806)

Materials

Name	Company	Catalog Number	Comments
50mL plastic tube	AS One Coporation, Osaka, Japan	Violamo 1-3500-22	
12-well plate	AGC Techno Glass, Tokyo, Japan	Iwaki 3815-012	
60mm dish	AGC Techno Glass, Tokyo, Japan	Iwaki 3010-060	
Cell strainer (100 µm)	Thermo Fisher Scientific, Waltham, MA	Falcon 35-2360	
Cell strainer (70 µm)	Thermo Fisher Scientific, Waltham, MA	Falcon 35-2350	
Alpha MEM	Wako Pure Chemical, Osaka, Japan	135-15175	
Fetal bovine serum	Sigma Aldrich, St. Louis, MO	172012	
Reduced serum medium	Thermo Fisher Scientific, waltham, MA	OPTI-MEM Gibco 31985-070	
Antibiotic-antimycotic	Thermo Fisher Scientific, Waltham, MA	Gibco 15240-062	
Trypsin-EDTA	Wako Pure Chemical, Osaka, Japan	209-16941	
PBS	Takara BIO, Shiga, Japan	T900	
Purified enzyme blends	Roche, Mannheim, Germany	Liberase DH Research Grade 05401054001	
PE-conjugated mouse primary antibody against CD14	BD Bioscience, Franklin Lakes, NJ	347497	Lot: 3220644, RRID: AB_400312
PE-conjugated mouse primary antibody against CD19	BD Bioscience, Franklin Lakes, NJ	340364	Lot: 3198741, RRID: AB_400018
PE-conjugated mouse primary antibody against CD34	BD Bioscience, Franklin Lakes, NJ	555822	Lot: 3079912, RRID: AB_396151
PE-conjugated mouse primary antibody against CD45	BD Bioscience, Franklin Lakes, NJ	555483	Lot: 2300520, RRID: AB_395875
PE-conjugated mouse primary antibody against CD73	BD Bioscience, Franklin Lakes, NJ	550257	Lot: 3057778, RRID: AB_393561
PE-conjugated mouse primary antibody against CD90	BD Bioscience, Franklin Lakes, NJ	555596	Lot: 3128616, RRID: AB_395970
PE-conjugated mouse primary antibody against CD105	BD Bioscience, Franklin Lakes, NJ	560839	Lot: 4339624, RRID: AB_2033932

PE-conjugated mouse primary antibody against HLA-DR	BD Bioscience, Franklin Lakes, NJ	347367	Lot: 3219843, RRID: AB_400293
PE-conjugated mouse IgG1 k isotype	BD Bioscience, Franklin Lakes, NJ	555749	Lot: 3046675, RRID: AB_396091
PE-conjugated mouse IgG2a k isotype	BD Bioscience, Franklin Lakes, NJ	555574	Lot: 3035934, RRID: AB_395953
PE-conjugated mouse IgG2b k isotype	BD Bioscience, Franklin Lakes, NJ	555743	Lot: 3098896, RRID: AB_396086
Viability dye	BD Bioscience, Franklin Lakes, NJ	Fixable Viability Stain 450 562247	
Blocking reagent	Dainippon Pharmaceutical, Osaka, Japan	Block Ace UKB80	
FCM	BD Bioscience, Franklin Lakes, NJ	BD FACSAria III Cell Sorter	
FCM software	BD Bioscience, Franklin Lakes, NJ	BD FACSDiva	
Adipogenic differentiation medium	Invitrogen, Carlsbad, CA	StemPro Adipogenesis Differentiation kit A10070-01	
Osteogenic differentiation medium	Invitrogen, Carlsbad, CA	StemPro Osteogenesis Differentiation kit A10072-01	
Chondrogenic differentiation medium	Invitrogen, Carlsbad, CA	StemPro Chondrogenesis Differentiation kit A10071-01	
Formaldehyde	Polyscience, Warrington, PA	16% UltraPure Formaldehyde EM Grade #18814	
Oil Red O	Sigma Aldrich, St. Louis, MO	O0625	
Arizarin Red S	Sigma Aldrich, St. Louis, MO	A5533	
Toluidine Blue	Sigma Aldrich, St. Louis, MO	198161	
Microscope	Keyence, Osaka, Japan	BZ-X700	