

Materials List for:

Development and Characterization of *In Vitro* Microvessel Network and Quantitative Measurements of Endothelial $[Ca^{2+}]_i$ and Nitric Oxide Production

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Materials

Name	Company	Catalog Number	Comments
ATP	Sigma-Aldrich	A2383	
Acetone	Fisher Scientific	A929	
Biopsy punch	Miltex	33-31 AA	
Bovine Albumin	MP Biomedicals	810014	
Bovine Brain Extract (BBE)	Lonza	CC-4098	
Cover-slip	Fisher Scientific	12-542C	
DAF-2 DA	Calbiochem	251505	
Dextran	Sigma-Aldrich	31390	
Donkey anti-Goat IgG (H+L) Secondary Antibody	Life technologies	A-11055	
DPBS, no calcium, no magnesium	Gibco	14190-250	
DRAQ5 (nuclei staining)	Cell Signaling Technology	4084	
Endothelial Cell Growth Supplement (ECGS)	Sigma-Aldrich	E2759-15MG	
Fetal Bovine Serum	Gibco	16000-044	
Fibronectin	Gibco	PHE0023	
Fluo-4 AM	Life technologies	F-14201	
Gelatin from porcine skin	Sigma-Aldrich	G1890-100G	
Gentamicin (50 mg/ml)	Gibco	15750-078	
Glass coverslip	Fisher Scientific	12-548B	
Glass Pasteur pipette	VWR	14672	
Heparin sodium salt from porcine intestinal mucosa	Sigma-Aldrich	H3393-10KU	
HEPES Buffered Saline Solution	Lonza	CC-5024	
Human umbilical vein endothelial cells (HUVECs)	Lonza	CC-2517	
Isopropyl alcohol (IPA)	VWR	89125	
L-Glutamine (200 mM)	Gibco	25030-081	
Mammalian Ringer Solution Ingredient			
NaCl (132 mM)	Fisher Scientific	S671-3	
KCl (4.6 mM)	Fisher Scientific	P217-500	
CaCl ₂ · 2H ₂ O (2.0 mM)	Fisher Scientific	C79-500	

MgSO ₄ · 7H ₂ O (1.2 mM)	Fisher Scientific	M63-500	
Glucose (5.5 mM)	Fisher Scientific	BP350-1	
NaHCO ₃ (5.0 mM)	Fisher Scientific	S233-500	
Hepes Salt (9.1 mM)	Research Organics	6007H	
Hepes Acid (10.9 mM)	Research Organics	6003H	
MCDB 131 Culture Medium	Life technologies	10372-019	
Paraformaldehyde	Electron Microscopy Sciences	15710	
Phalloidin (F-actin staining)	Sigma-Aldrich	P1951	
Phosphate Buffered Saline	Life technologies	14040-133	
Polydimethylsiloxane (PDMS)	Dow Corning Corporation	Sylgard 184	
Scalpel	Exel Int	29552	
Scotch tape	3M	34-8711-3070-3	
Silicon wafer	VWR	14672	
SU-8 photoresist	MicroChem	SU-8 2050 Y111072	
SU-8 developer	MicroChem	Y020100	
tissue culture flasks	Sigma-Aldrich	Z707503-100EA	
Triton X-100	Chemical Book	T6878	
Trypsin Neutralizer solution	Gibco	R-002-100	
Trypsin/EDTA Solution (TE)	Gibco	R-001-100	
Tubing	Cole-Parmer	PTFE microbore tubing, 0.012" ID x 0.030" OD	
VE-cadherin	Santa Cruz Biotechnology	SC-6458	
Name of Equipment	Company	Catalog Number	Comments/Description
Biosafety Laminar hood	NuAire	NU-425 Class II, Type A2	
CCD camera	Hamamatsu	ORCA	
Confocal microscope	Leica	TCS SL	
Desiccator	Bel-Art	F42022	
Hotplate	Wenescio	HP-1212	
Incubator	Forma Scientific	3110	
Isotemp oven	Barnstead	3608-5	
Lithography bench	Karl Suss	MA6 Contact Lithography	
Optical microscope	Nikon	L200 ND & Diaphod 300	
Shutter for the CCD camera	Sutter Instrument	Lambda 10-2	
Plasma cleaner	PVA TePla/Harrick plasma	M4L/PDC-32G	
Spin coater	Brewer Science	Cee 200X	
Syringe pump system	Harvard Apparatus	703005	
Name of Software	Company	Catalog Number	Comments/Description
CAD software	Autodesk	AutoCAD 2015	
CFD simulation software	COMSOL	COMSOL Multiphysics 4.0.0.982	
Images acquire and analyse for NO production	Universal Imaging	Metafluor	