

Materials List for:

Co-culture of Living Microbiome with Microengineered Human Intestinal Villi in a Gut-on-a-Chip Microfluidic Device

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Materials

Name	Company	Catalog Number	Comments
Dulbecco's Modified Eagle Medium (DMEM) containing 25 mM glucose and 25 mM HEPES	Gibco	10564-011	Warm it up at 37 °C in a water bath.
Difco Lactobacilli MRS broth	BD	288120	Run autoclave at 121 °C for 15 min.
Poly(dimethylsiloxane)	Dow Corning	3097358-1004	15:1 (w/w), PDMS : curing agent
Caco-2BBE human colorectal carcinoma line	Harvard Digestive Disease Center		Human colorectal adenocarcinoma
Heat-inactivated FBS	Gibco	10082-147	20% (v/v) in DMEM
Penicillin-streptomycin-glutamine	Gibco	10378-016	1/100 dilution in DMEM
4',6-Diamidino-2-phenylindole dihydrochloride	Molecular Probes	D1306	Nuclei staining
Phalloidin-CF647 conjugate (25 units/ml)	Biotium	00041	F-actin staining
Flexcell FX-5000 tension system	Flexcell International Corporation	FX5K	Peristalsis-like stretching motion (10% cell strain, 0.15 Hz frequency)
Inverted epifluorescence microscope	Zeiss	Axio Observer Z1	Imaging, DIC
Scanning confocal microscope	Leica	DMI6000	Imaging, Fluorescence
UVO Cleaner	Jelight Company Inc	342	Surface activation of the gut-chip
Type I collagen	Gibco	A10483-01	Extracellular matrix component for cell culture into the chip
Matrigel	BD	354234	Extracellular matrix component for cell culture into the chip
1 ml disposable syringe	BD	309628	Cell and media injection stuff
25 G 5/8 needle	BD	329651	Cell and media injection stuff
Syringe pump	Braintree Scientific Inc.	BS-8000	Injection equipment into the chip
VSL#3	Sigma-Tau Pharmaceuticals	7-45749-01782-6	A formulation of 8 different commensal gut microbes
Reinforced Clostridial Medium	BD	218081	Anaerobic bacteria culture medium
GasPak EZ Anaerobe Container System with Indicator	BD	260001	Anaerobic gas generating sachet
4% paraformaldehyde	Electron Microscopy Science	157-4-100	Fixing the cells for staining
Triton X-100	Sigma-Aldrich	T8787	Permeabilizing the cells

Bovine serum albumin	Sigma-Aldrich	A7030	Blocking agent for staining of the cells
Corona treater	Electro-Technic Products	BD-20AC	Plasma generator for fabrication of the chip
Steriflip	Millipore	SE1M003M00	Degasing the complete culture medium
Disposable hemocytometer	iNCYTO	DHC-N01	For manual cell counting