

# A Gut-on-a-Chip Model to Study the Gut Microbiome-Nervous System Axis

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## Materials

Name	Company	Catalog Number	Comments
2-Mercaptoethanol	Sigma Aldrich	10712	
Aeration cannula (length: 1.10 diameter: 30 mm)	VWR (B.Braun)	BRAU4190050	
Agar-agar	Merck Millipore	1.01614.1000	
Aluminium Crimp	Glasgerätebau Ochs	102050	
Ascorbic acid	Sigma Aldrich	A4544	
B-27 Supplement Minus Vitamin A (50x)	Gibco	12587-010	
Bacterial Cell Membrane, pore size: 1 µm	VWR (Whatman)	515-2084	
Caco-2 cells	DSMZ	ACC169	
Cell Counter & Analyzer CASY	OMNI Life Science		
CHIR	Axon Mechem BV	CT99021	
Collagen I, Rat Tail	Invitrogen	A1048301	
Costar 6-well Clear Flat Bottom Ultra-Low Attachment Plates	Corning	3471	
Difco Lactobacilli MRS Broth	BD Biosciences	288130	
Discofix 3-way stopcock	B. Braun	BRAU40951111	
DMEM/F12, no glutamine	ThermoFisher Scientific	21331020	
Dulbecco's Phosphate-Buffered Saline, D-PBS	Sigma Aldrich	14190-169	
Essential 6 Medium	ThermoFisher Scientific	A1516401	
Essential 8 Medium	ThermoFisher Scientific	A1517001	
Female Luer Lock to Barb Connector	Qosina	11733	
FGF2	R&D Systems	233-FB	
Fibronectin	Sigma Aldrich	F1141	
Foetal Bovine Serum, FBS	ThermoFisher Scientific	10500-064	
GDNF	PeptoTech	450-10	

Human Cell Membrane, pore size: 50 nm	Sigma Aldrich (GE Healthcare)	WHA111703	
HuMiX Gasket Collagen	Auer Precision	216891-003	
HuMiX Gasket Sandwich Bottom	Auer Precision	216891-002	
HuMiX Gasket Sandwich Top	Auer Precision	216891-001	
iPSC	Max Planck Institute for Molecular Biomedicine	K7 line	
L-Glutamine (200 mM)	Gibco	25030081	
Laminin from Engelbreth-Holmswarm	Sigma Aldrich	L2020	
LDN193189	Sigma Aldrich	SML0559	
<i>Limosilactobacillus reuteri</i>	ATCC	23272	
Live/Dead BacLight Bacterial Viability kit	Thermofisher Scientific	L7012	
Male Luer with Spin Lock to Barb	Qosina	11735	
Marprene tubing (0.8 mm x 1.6 mm)	Watson-Marlow	902.0008.J16	
Matrigel hESC-qualified matrix	Corning	354277	
Mucin, from porcine stomach	Sigma Aldrich	T3924	
N2 Supplement (100x)	Gibco	17502048	
NEAA	Thermofisher Scientific	11140050	
Needle (length: 120 mm; diameter: 0.80 mm)	B.Braun (color code: green)	466 5643	
Needle (length: 40 mm; diameter: 0.70 mm)	Henke Sass Wolf (color code: black)	4710007040	
Needle (length: 80 mm; diameter: 0.60 mm)	B.Braun (color code: blue)	466 5635	
Neurobasal Medium	Gibco	21103049	
PE/Cy7 anti-human CD49d antibody	Biolegend	304314	
Penicillin-Streptomycin	Sigma Aldrich	P0781	
Peristaltic pump	Watson-Marlow	205CA	
Poly-L-ornithine Hydrobromide	Sigma Aldrich	P3655	
Polycarbonate lids (HuMiX)	University of Arizona	HuMiX 1.0 / 2.0	
Retinoic Acid	Sigma Aldrich	R2625	
RLT Buffer (RNeasy Minikit)	Qiagen	74104	
RPMI 1640 Medium	Thermofisher Scientific	72400-021	
SB431542, ALK inhibitor	Abcam	ab120163	
Serum bottles	Glasgerätebau Ochs	102091	
Syringe	BD Biosciences	309110	
Trypsin-EDTA solution	Sigma Aldrich	T3924	
Y-27632 Dihydrochloride	R&D Systems	1254	