

Modeling Healthy and Dysbiotic Vaginal Microenvironments in a Human Vagina-on-a-Chip

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Materials

Name	Company	Catalog Number	Comments
0.22 µm Steriflip	Millipore	SCGP00525	To degas media
2 channel chip	Emulate	BRK-S1-WER-24	Part of the two-channel Chip kit
200 µL barrier tips (or filter tips)	Thomas Scientific, SHARP	1159M40	Tips used for chip seeding
Activation Reagent 1 (or ER-1 powder)	Emulate	Chip S1 Basic Research kit-24PK	Part of the two-channel Chip kit; Storage temperature -20 °C
Activation Reagent 2 (or ER-2 solution)	Emulate	Chip S1 Basic Research kit-24PK	Part of the two-channel Chip kit; Storage temperature 4 °C
Adenine	Sigma Aldrich	A2786	Component of the Differentiation media
Brucella blood agar plates	VWR International Inc.	89405-032	with Hemin and Vitamin K; For the enumeration of Gardnerella vaginalis
Ca ²⁺ and Mg ²⁺ free DPBS (DPBS (-/-))	ScienCell	303	For washing cells
Calcium Chloride	Sigma Aldrich	C5670	Component of the Differentiation media
Calcium chloride (anhyd.)	Sigma Aldrich	499609	Component of HBSS (LB/+G)
Collagen I	Corning	354236	For the coating solution for HVEC
Collagen IV	Sigma Aldrich	C7521	For the coating solution for HVEC
Collagenase IV	Gibco	17104019	For the dissociation of cells from the Vagina Chips
Complete fibroblast medium	ScienCell	2301	Media for the culture of HUF
Complete vaginal epithelium medium	Lifeline	LL-0068	Media for the culture of HVEC
D-Glucose (dextrose)	Sigma Aldrich	158968	Component of HBSS (LB/+G)
DMEM (Low Glucose)	Thermofisher	12320-032	Component of the Differentiation media
Dynamic Flow Module (or Zoë)	Emulate	Zoë-CM1	Regulates the flow rate of the chips
Ham's F12	Thermofisher	11765-054	Component of the Differentiation media
Heat inactivated FBS	Thermofisher	10438018	Component of the Differentiation media

Human uterine fibroblasts	ScienCell	7040	HUF
Human vaginal epithelial cells	Lifeline	FC-0083	HVEC
Hydrocortisone	Sigma Aldrich	H0396	Component of the Differentiation media
ITES	Lonza	17-839Z	Component of the Differentiation media
L-glutamine	ThermoFisher	25030081	Component of the Differentiation media
Magnesium chloride hexahydrate	Sigma Aldrich	M2393	Component of HBSS (LB/+G)
Magnesium sulfate heptahydrate	Sigma Aldrich	M1880	Component of HBSS (LB/+G)
MRS agar plates	VWR International Inc.	89407-214	For enumeration of Lactobacillus
O-phosphorylethanolamine	Sigma Aldrich	P0503	Component of the Differentiation media
Pen/Strep	ThermoFisher	15070063	Component of the Differentiation media
pH strips	Fischer-Scientific	13-640-520	For measurement of pH
Pods (1/chip)	Emulate	BRK-S1-WER-24	Part of the two-channel Chip kit
Poly-L-lysine	ScienCell	403	For the coating solution for HUFs
Potassium chloride	Sigma Aldrich	P3911	Component of HBSS (LB/+G)
Potassium phosphate monobasic	Sigma Aldrich	P0662	Component of HBSS (LB/+G)
Sterile 80% glycerol	MP Biomedicals	113055034	For freezing bacterial samples
Triiodothyronine	Sigma Aldrich	T6397	Component of the Differentiation media
Trypan Blue Solution (0.4%)	Sigma Aldrich	T8154	For counting live/dead cells
TrypLE Express	ThermoFisher	12605010	For the dissociation of cells from the Vagina Chips
Trypsin Neutralizing Solution (TNS)	ScienCell	113	For neutralization of Trypsin
Trypsin/EDTA Solution (0.25%)	ScienCell	103	For cell dissociation
β -estradiol	Sigma Aldrich	E2257	Hormone for differentiation media