

Immunocompetent Alveolus-on-Chip Model for Studying Alveolar Mucosal Immune Responses

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jove.com/video/66602

Materials

Name	Company	Catalog Number	Comments
Consumables			
Cellcounting chamber slides (Countess)	Invitrogen	C10283	
Cell culture Multiwell Plates, 24 Well, steril	Greiner Bio-One	662 160	
Cell culture Multiwell Plates, 6 Well, steril	Greiner Bio-One	657 160	
Coverslips (24x40mm; #1.5)	Menzel-Gläser	15747592	
Eco wipes	Dr. Schuhmacher	00-915-REW10003-01	
Eppies 2.0	Sarstedt	72.691	
Eppis 0.5	Sarstedt	72.699	
Eppis 1.5	Sarstedt	72.690.001	
Falcons 15mL	Greiner Bio-One	188 271-TRI	
Falcons 50mL	Greiner Bio-One	227 261-TRI	
Gauze swab	Noba	PZN 2417767	
Gloves Nitril 3000	Meditrade	1280	
Microscope slides	Menzel-Gläser	AAAA000001##12E	
Multiwell Plates 24 Well, sterile	Greiner Bio-One	662 160	
Pasteur pipettes (glass) 150mm	Assistent	40567001	
Pasteur pipettes (glass) 230mm	Assistent	40567002	
Round-bottom tubes (PS, 5mL)	Falcon	352052	
Safety-Multifly-Set, 20G, 200mm	Sarstedt	85.1637.235	
Scalpels	Dahlhausen	11.000.00.715	
Serological pipettes 10mL	Greiner Bio-One	607 160-TRI	
Serological pipettes 25mL	Greiner Bio-One	760 160-TRI	
Serological pipettes 2mL	Greiner Bio-One	710 160-TRI	
Serological pipettes 50mL	Greiner Bio-One	768 160-TRI	
Serological pipettes 5mL	Greiner Bio-One	606 160-TRI	

S-Monovette, 7,5ml Z-Gel	Sarstedt	1.1602	
S-Monovette, 9,0ml K3E	Sarstedt	02.1066.001	
Softasept N	Braun	3887138	
T25 flask	Greiner Bio-One	690 960	
Tips sterile 10µL	Greiner Bio-One	771 261	
Tips sterile 1250µL	Greiner Bio-One	750 261	
Tips sterile 300µL	Greiner Bio-One	738 261	
Tips unsterile 10µL	Greiner Bio-One	765 290	
Tips unsterile 1000µL	Greiner Bio-One	739 291	
Tips unsterile 200µL	Greiner Bio-One	686 290	
Tweezers (Präzisionspinzette DUMONT abgewinkelt Inox08, 5/45, 0,06 mm)	Roth	K343.1	
Chemicals			
Descosept AF	Dr. Schuhmacher	N-20338	
Ethanol 96%	Nordbrand-Nordhausen	410	
Fluorescein isothiocyanate (FITC)-dextran (3-5kDa)	Sigma Aldrich	FD4-100MG	
Fluorescent Mounting Medium	Dako	S3023	
Methanol	VWR	20847.295	
Saponin	Fluka	47036	
Tergazyme	Alconox	1304-1	
Cell culture			
Collagen IV	Sigma-Aldrich	C5533-5MG	
Dexametason	Sigma-Aldrich	D4902	
DPBS (-/-)	Lonza	BE17-516F	
DPBS (+/+)	Lonza	BE17-513F	
EDTA solution	Sigma-Aldrich	E788S	
Endothelial Cell Growth Medium	Promocell	C-22020	
Endothelial Cell Growth Medium supplement mix	Promocell	C-39225	
Fetal bovine Serum	Sigma-Aldrich	E2129-10g	
H441	ATCC		
Human recombinant GM-CSF	Peptotech	300-30	
Lidocain	Sigma-Aldrich	L5647-15G	
Penicillin-Streptomycin (10,000 U/ mL)	Gibco	15140-122 /-163	
RPMI	Gibco	72400047	
Trypane blue stain 0.4%	Invitrogen	T10282	
Trypsin	Gibco	15090-046	
Primary antibodies			
Cadherin-5 / VE-Cadherin (goat)	BD	610252	
CD68 (rabbit)	CellSignaling	76437	
E-Cadherin (goat)	R&D	AF748	
SP-A (mouse)	Abcam	ab51891	
Secondary antibodies			
AF488 (donkey anti mouse)	Invitrogen	R37114	
AF647 (donkey anti mouse)	Invitrogen	A31571	
AF647 (donkey anti rabbit)	Invitrogen	A31573	

Cy3 (donkey anti goat)	jackson research	705-165-147	
Microfluidic			
Chip	Dynamic 42	BC002	
Male Luer Lock (small)	ChipShop	09-0503-0270-09	
Male mini luer plugs, row of four,PP, green	Microfluidic chipshop	09-0558-0336-11	
Male mini luer plugs, row of four,PP, opaque	Microfluidic chipshop	09-0556-0336-09	
Male mini luer plugs, row of four,PP, red	Microfluidic chipshop	09-0557-0336-10	
Plugs	Cole Parmer	GZ-45555-56	
Reservoir 4.5mL	ChipShop	16-0613-0233-09	
Tubing	Dynamic 42	ST001	
Equipment			
Autoclave	Tuttnauer	5075 ELV	
Centrifuge	Eppendorf	5424	
CO2 Incubator	Heracell	150i	
Countess automated cell counter	Invitrogen	C10227	
Flowcytometer	BD	FACS Canto II	
Freezer (-20 °C)	Liebherr	LCexv 4010	
Freezer (-80 °C)	Heraeus	Herafreeze HFU 686	
Fridge	Liebherr	LCexv 4010	
Heraeus Multifuge	Thermo Scientific	X3R	
Microscope	Leica	DM IL LED	
Orbital shaker	Heidolph	Reax2000	
Peristaltic pump	REGLO Digital MS-4/12	ISM597D	
Pipettes 10µL	Eppendorf Research plus	3123000020	
Pipettes 100µL	Eppendorf Research plus	3123000047	
Pipettes 1000µL	Eppendorf Research plus	3123000063	
Pipettes 2.5µL	Eppendorf Research plus	3123000012	
Pipettes 20µL	Eppendorf Research plus	3123000039	
Pipettes 200µL	Eppendorf Research plus	3123000055	
Scale	Sartorius	6101	
Scale	Sartorius	TE1245	
Sterile bench	Kojair	Biowizard SL-130	
Waterbath	Julabo	SW-20C	
Fluorescence Microscope Setup			
Apotome.2	Zeiss		
Illumination device	Zeiss	HXP 120 C	
Microscope	Zeiss	Axio Observer 5	
Optical Sectioning	Zeiss	ApoTome	
Power Supply Microscope	Zeiss	Eplax Vp232	
Software			
ZEN Blue Edition	Zeiss		