

Materials List for

Fabrication and Characterization of Microneedle Patches for Loading and Delivery of Exosomes

Sijia Mu^{1,2}, Hao Chang², Fengli Qu²

¹Medical School, Faculty of Medicine, Tianjin University ²Hangzhou Institute of Medicine, Chinese Academy of Sciences

Corresponding Authors

Hao Chang
changhao@him.cas.cn

Fengli Qu
qufengli@him.cas.cn

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Materials

Name	Company	Catalog Number	Comments
100x penicillin-streptomycin solutions	Jrunbio Scientific	MA0110	Cell culture
180 kDa pre-stained protein marker	Thermo	26616	Western blotting
3% Uranyl acetate	Henan Ruixin Experimental Supplies	GZ02625	Morphological characterization of exosomes
3D printer	BMF technology	nanoArch S130	Mold preparation
4%–20% precast gel	Genscript	ExpressPlus PAGE GEL	Western blotting
5× SDS-PAGE loading buffer	Titan	04048254	Western blotting
Anti-mouse Alix antibody	Biolegend	12422-1-AP	Western blotting
Anti-mouse CD63 antibody	Biolegend	ab217345	Western blotting
APC anti-mouse CD80 antibody	Biolegend	104713	Antibody
Auto fine coater	ZIZHU	JBA5-100	Morphological characterization of microneedle
BCA assay kit	Beyotime	P0012	Protein concentration assay
Centrifuge	Thermo Fisher	Muitifuge X1R pro	Cell centrifuge
Circulating water vacuum pump	Yuhua Instrument	SHZ-D(III)	Filtration
CO2 incubator	Eppendorf	CellXpert C170	Cell culture
Confocal laser scanning microscope	Nikon	A1HD25	Fluorescence imaging
Copper mesh	Beijing Zhongjingkeyi Technology	JF-ZJKY/300	Morphological characterization of exosomes
D- (+) -Trehalose dihydrate	Aladdin	5138-23-4	Fabrication of microneedle
Dulbecco's modified Eagle's medium	Meilunbio	MA0212	Cell culture
Dulbecco's phosphate-buffered saline	Meilunbio	MA0010	Cell culture
Electrophoresis system	Bio-rad	PowerPac-basic	Western blotting
Fetal bovine serum	Jrunbio Scientific	JR100	Cell culture
FITC anti-mouse CD11c antibody	Biolegend	117305	Antibody
Flow cytometry	BD	LSR Fortessa	Fluorescence detection
Gel imager	Cytiva	Amersham ImageQuant 800	Western blotting
HRP-conjugated anti-rabbit IgG	CST	7074S	Western blotting

HTL resin	BMF technology		Mold preparation
Hyaluronic acid (MW = 300 kDa)	Bloomage Biotechnology	9004-61-9	Fabrication of microneedle
Immersion oil	Nikon	MXA22168	Fluorescence imaging
Ion cleaner	JEOL	EC-52000IC	Morphological characterization of exosomes
Microscope	Olympus	CKX53	Observe the microneedle tip dissolving process
Mouse ovarian epithelial cancer cell ID8	MeisenCTCC	CC90105	Cell culture
Nanoparticle tracking analysis	Particle Metrix	ZetaView	Size analysis of exosomes
Pacific Blue anti-mouse I-A/I-E antibody	Biolegend	107619	Antibody
Phenylmethanesulfonyl fluoride	Beyotime	ST507	Protease inhibitors
Plasma cleaner	Hefei Kejing Material Technology	PDC-36G	Fabrication of microneedle
Polydimethylsiloxane	Dow Corning	9016-00-6	Mold preparation
Polyvinylpyrrolidone (MW = 40 kDa)	Aladdin	9003-39-8	Fabrication of microneedle
Prism	GraphPad	Version 9	Statistical analysis
PVDF membrane	Millipore	IPVH00010	Western blotting
Quick-snap centrifuge	Beckman	344619	Exosomes extraction
RIPA lysis buffer	Applygen	C1053	Lysis membrane
Roswell park memorial institute 1640	Meilunbio	MA0548	Cell culture
Scanning electron microscope	JEOL	JSM-IT800	Morphological characterization of microneedle
Stereo microscope	Olympus	SZX16	Characterization of morphology
Super ECL detection reagent	Applygen	P1030	Western blotting
Tensile meter	Instron	68SC-05	Mechanical testing
Transmission electron microscope	JEOL	JEM-2100plus	Morphological characterization of exosomes
Tris buffered saline	Sangon Biotech	JF-A500027-0004	Western blotting
Tween-20	Beyotime	ST825	Western blotting
Ultracentrifuge	Beckman	Optima XPN-100	Exosomes extraction
Ultrafiltration tube	Millipore	UFC910096	Exosomes concentration
Vacuum drying oven	Shanghai Yiheng Technology	DZF-6024	Fabrication of microneedle
Vacuum filtration system	Biosharp	BS-500-XT	Filtration