

Materials List for:

Fully Automated Centrifugal Microfluidic Device for Ultrasensitive Protein Detection from Whole Blood

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Materials

Name	Company	Catalog Number	Comments
Si wafer	LG SILTRON	Polished Wafer, test grade	Dia. (mm) = 150, orientation = <100>, dopant = boron, RES(Ohm-cm) = 1 - 30, thickness (μm) = 650 - 700
Polycarbonate (PC)	Daedong Plastic	PCS#6900	Thickness (mm) = 1 and 5
Titanium tetraisopropoxide, 98%,	Sigma-Aldrich	205273	
Polyvinylpyrrolidone, Mw = 1,300,000	Sigma-Aldrich	437190	
Acetic acid	Sigma-Aldrich	320099	
Anhydrous ethanol	Sigma-Aldrich	459836	
Tridecafluoro-1,1,2,2-tetrahydrooctyl)-1-trichlorosilane	Sigma-Aldrich	448931	
PDMS and curing agent	Dow Corning	SYLGARD 184	
GPDES	Gelest Inc	SIG5832.0	
Ethanol	J T Baker		
FE-SEM	FEI	Nova NanoSEM	
X-ray photoelectron spectroscopy	ThermoFisher	K-alpha	
3D modeling machine	M&I CNC Lab, Korea		CNC milling machine
Wax-dispensing machine	Hanra Precision Eng. Co. Ltd., Korea		Customized
Double-sided adhesive tape	FLEXcon, USA	DFM 200 clear 150 POLY H-9 V-95	
Cutting plotter	Graphtec Corporation, Japan	Graphtec CE3000-60 MK2	
Spin coater	MIDAS	SPIN-3000D	
Furnace (calcination)	R. D. WEBB COMPANY	WEBB 99	
Rheometer (Tack test)	Thermo Scientific	Haake MARS III - ORM Package	
Oxygen plasma system	FEMTO	CUTE	
Monoclonal mouse antihuman hsCRP	Hytest Ltd., Finland	4C28	(clone # C5)
Monoclonal mouse anti-cTnI	Hytest Ltd., Finland	4T21	(clone # 19C7)
HRP conjugated goat polyclonal anti-hsCRP	Abcam plc., MA	ab19175	
HRP conjugated mouse monoclonal anti-cTnI	Abcam plc., MA	ab24460	(clone # 16A11)
hsCRP	Abcam plc., MA	ab111647	

cTnl	Fitzgerald, MA	30-AT43	
Bovine Albumin	Sigma-Aldrich	A7906	
PBS	Amresco Inc	E404	
Blood collection tubes	BD vacutainer	367844	K2 EDTA 7.2 mg plus blood collection tubes
SuperSignal ELISA femto	Invitrogen	37074	
Modular multilabel plate reader	Perkin Elmer	Envision 2104	
Disc operating machine	Hanra Precision Eng. Co. Ltd., Korea		Customized
Photomultiplier tube (PMT)	Hamamatsu Photonics	H1189-210	
AutoCAD	AutoDesk	Version 2012	Design software
SolidWorks 3D CAD software	SOLIDWORKS Corp.	Version 2013	3D Design software,
Edgecam	Vero software	version 2009.01.06928	Code generating software
DeskCNC	Carken Co.	version 2.0.2.18	CNC milling machine software