

Materials List for:

Longitudinal Morphological and Physiological Monitoring of Three-dimensional Tumor Spheroids Using Optical Coherence Tomography

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Materials

Name	Company	Catalog Number	Comments
Custom Spectral Domain OCT imaging system			Developed in our lab
Superluminescent Diode (SLD)	Thorlabs	SLD1325	light source
2×2 single mode fused fiber coupler, 50:50 splitting ratio	AC Photonics	WP13500202B201	
Reference Arm			
Lens Tube	Thorlabs		
Adapter	Thorlabs		
Collimating Lens	Thorlabs	AC080-020-C	
Focusing Lens	Thorlabs		
Kinematic Mirror Mount	Thorlabs		
Mirror	Thorlabs		
1D Translational Stage	Thorlabs		
Continuous neutral density filter	Thorlabs		
Pedestrial Post	Thorlabs		
Clamping Fork	Thorlabs		
Sample Arm			
Lens Tube	Thorlabs		
Adapter	Thorlabs		
Collimating Lens	Thorlabs	AC080-020-C	
Galvanometer	Thorlabs		
Relay Lens	Thorlabs	AC254-100-C	two Relay lens to make a telescope setup
Triangle Mirror Mount	Thorlabs		
Mirror	Thorlabs		
Objective	Mitutoyo		
Pedestrial Post	Thorlabs		
Clamping Fork	Thorlabs		
Polarization Controller	Thorlabs		
30mm Cage Mount	Thorlabs		

Cage Rod	Thorlabs		
Stage			
3D motorized translation stage	Beijing Mao Feng Optoelectronics Technology Co., Ltd.	JTH360XY	
2D Tilting Stage			
Rotation Stage			
Plate Holder			3D printed
Spectrometer			
Lens Tube	Thorlabs		
Adapter	Thorlabs		
Collimating Lens	Thorlabs	AC080-020-C	
Grating	Wasatch		G = 1145 l/mm
F-theta Lens	Thorlabs	FTH-1064-100	
InGaAs Line-scan Camera	Sensor Unlimited	SU1024-LDH2	
Name	Company	Catalog Number	Comments
Cell Culture Component			
HCT 116 Cell line	ATCC	CCL-247	
Cell Culture Flask	SPL Life Sciences	70025	
Pipette	Fisherbrand	14388100	
Pipette tips	Sorenson Bioscience	10340	
Gibco GlutaMax DMEM	Thermo Fisher Scientific	10569044	
Fetal Bovine Serum, certified, US origin	Thermo Fisher Scientific	16000044	
Antibiotic-Antimycotic (100X)	Thermo Fisher Scientific	15240062	
Corning 96-well Clear Round Bottom Ultra-Low Attachment Microplate	Corning	7007	
Gibco PBS, pH 7.4	Thermo Fisher Scientific	10010023	
Gibco Trypsin-EDTA (0.5%)	Thermo Fisher Scientific	15400054	
Forma Series II 3110 Water-Jacketed CO2 Incubators	Thermo Fisher Scientific	3120	
Gloves	VWR	89428-750	
Parafilm	Sigma-Aldrich	P7793	
Transfer pipets	Globe Scientific	138080	
Centrifuge	Eppendorf	5702 R	To centrifuge the 15 mL tube
Centrifuge	NUAIRE	AWEL CF 48-R	To centrifuge the 96-well plate
Microscope	Olympus		
Name	Company	Catalog Number	Comments
Histology & IHC			
Digital slide scanner	Leica	Aperio AT2	Obtain high-resolution histological images
Histology Service	Histowiz		Request service for histological and immunohistological staining of tumor spheroid
Name	Company	Catalog Number	Comments
List of Commerical OCTs			
SD-OCT system	Thorlabs	Telesto Series	
SD-OCT system	Wasatch Photonics	WP OCT 1300 nm	

Name	Company	Catalog Number	Comments
Software for Data Analyses			
Basic Image Analysis	NIH	ImageJ	Fiji also works.
3D Rendering	Thermo Fisher Scientific	Amira	Commercial software. Option 1
3D Rendering	Bitplane	Imaris	Commercial software. Option 2. Used in the protocol
OCT acquisition software			custom developed in C++.
Stage Control	Beijing Mao Feng Optoelectronics Technology Co., Ltd.	MRC_3	Incorporated into the custom OCT acquisition code
OCT processing software			custom developed in C++. Utilize GPU. Incorporated into the custom OCT acquisition code.
Morphological and Physiological Analysis			custom developed in MATLAB