

Three-Dimensional Acoustic Assembly Device for Mass Manufacturing of Cell Spheroids

 Yuecheng Qian¹, Xiaoyun Wei^{1,2}, Keke Chen^{1,2}, Mingen Xu^{1,2}
¹School of Automation, Hangzhou Dianzi University ²Key Laboratory of Medical Information and 3D Bioprinting of Zhejiang Province, Hangzhou Dianzi University

Corresponding Authors

Xiaoyun Wei **Keke Chen** **Mingen Xu**
 wxyun@hdu.edu.cn kkchen@hdu.edu.cn xumingen@hdu.edu.cn

Citation

Qian, Y., Wei, X., Chen, K., Xu, M. Three-Dimensional Acoustic Assembly Device for Mass Manufacturing of Cell Spheroids. *J. Vis. Exp.* (200), e66078, doi:10.3791/66078 (2023).

Date Published

October 13, 2023

DOI

10.3791/66078

URL

jove.com/video/66078

Materials

Name	Company	Catalog Number	Comments
0.22- μ m filter	Merck	SLGSM33SS	Used for GelMA solution sterilization
35 mm-cell culture dish	Corning	430165	Used for culturing cells
Confocal microscope	Nikon	A1RHD25	Fluorescent cell observation
DiO dye	Beyotime	C1038	Dye used to stain cells
DMEM	Gibco	12430054	Cell culture media
FBS	Gibco	10099141C	Cell culture media supplement
Function generator	Rigol	DG5352	For RF signal generation
GelMA	Regenovo	none	Used to prepare bioink
GelMA lysis buffer	EFL	EFL-GM-LS-001	Used to dissolve GelMA scaffolds
Inverted microscope	Nikon	Ti-U	Cell observation
LAP	Sigma-Aldrich	900889	Used as photoinitiator
Live-Dead kit	Beyotime	C2015M	Cell viability analysis
PBS	Gibco	10010002	Used as buffer
Penicillin-streptomycin	Gibco	15070063	Prevent cell culture contamination
Power amplifier	Minicircuit	LCY-22+	Increase the voltage amplitude of the RF signal
PZT transducers	Yantai Xingzhiwen Trading Co.,Ltd.	PZT-41	Functional units for acoustic assembly device
T25 cell culture flask	Corning	430639	Used for culturing cells
Trypan blue	Gibco	15250061	Cell counting
Trypsin-EDTA	Gibco	25200056	Cell dissociation enzyme