Materials List for:

Production of Metal Nanoparticles by Pulsed Laser-ablation in Liquids: A Tool for Studying the Antibacterial Properties of Nanoparticles

Matthew Ratti[1], Joseph J. Naddeo[1], Julianne C. Griepenburg[1], Sean M. O'Malley[1,2], Daniel M. Bubb[1,2], Eric A. Klein[2,3]

[1]Physics Department, Rutgers University-Camden

[2]Center for Computational and Integrative Biology, Rutgers University-Camden

[3]Biology Department, Rutgers University-Camden

Correspondence to: Eric A. Klein at eric.a.klein@rutgers.edu

URL: https://www.jove.com/video/55416
DOI: doi:10.3791/55416

Materials

Name	Company	Catalog Number	Comments
Nanosecond Nd:YAG laser	Ekspla	NL303	
Motorized xy scanning stage	Standa	8MTF	
UV-VIS spectrophotometer	Agilent	Cary 60	
Dynamic light scattering unit	Malvern	Zetasizer ZS 90	
Microbalance	Maktek	TM 400	
Transmission electron microscope	Zeiss	EM 902	
Silver foil target	Alfa Aesar	12127	
250 mm focal length lens	Edmund Optics	69-624	
Copper TEM grids	Pacific Grid-Tech	Cu-400LD	Lacey/thin film coated grid
E. coli MG1655	ATCC	47076	
Bacto tryptone	BD Biosciences	211705	
Yeast extract	BD Biosciences	212750	
Sodium chloride	Fisher Scientific	BP3581	
Bacto agar	BD Biosciences	214010	
Sodium dodecyl sulfate	Fisher Scientific	BP166-100	
Polyvinylpyrrolidone	Fisher Scientific	BP431-100	
Stainless steel disc (for ablation stage)	Metal Remnants, Inc.	N/A	1.5 inch diameter, 16 gauge
Beaker	Fisher Scientific	02-540G	
Magnetic stir bar	Fisher Scientific	14-513-57	
Magnetic stir plate	Fisher Scientific	11-100-49SH	
Laser energy and power meter	Coherent	1098579	
Carbon tape	Shinto Chemitron Co. Ltd.	STR Tape	
Sonicating water bath	Branson	1510	
Air compressor	GMC	Syclone 3010	For drying ablation target
75 mm focal length lens	Edmund Optics	34-096	Focusing lens for post-irradiation
Quartz cuvette	Precision Cells Inc	21UV40	50 mm light path (for post-irradiation)
Kanamycin	Fisher Scientific	BP906-5	
Light microscope	Nikon	50i	This microscope is used to focus the laser on the ablation stage. This particular model is no longer available, but any light microscope with a 4X objective will work.

CCD camera	AmScope	MT5000-CCD	
Micrometer slide	Ted Pella	2280-70	

