

Materials List for:

Cultivation of Green Microalgae in Bubble Column Photobioreactors and an Assay for Neutral Lipids

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Materials

Name	Company	Catalog Number	Comments
Supplies for airlift photobioreactor setup			
1 L Pyrex bottles	Corning	16157-191	For bottle reactors, humidifiers
1/2" hose clamp	Home Depot	UC953A	or equivalent
1/4" female luer to barb	Nordson biomedical	Nordson FTLL360-6005	1/4" ID, PP
1/4" ID, 3/8" OD autoclaveable PVC tubing	Thermo-Nalgene	63013-244	50'
1/4" in O-rings	Grainger	1REC5	#010 Medium Hard Silicone O-Ring, 0.239" I.D., 0.379" O.D.
1/8" Female luer to barb	Nordson biomedical	FTLL230-6005	
1/8" ID, 1/4" OD autoclaveable PVC tubing	Thermo-Nalgene	63013-608	250'
1/8" male spinning luer to barb	Nordson biomedical	MLRL013-6005	
1/8" multiport barb	Nordson biomedical	4PLL230-6005	1/8" multiport barb
1/8" NPT to barb	Nordson biomedical	18230-6005	1/8" 200 series barb
1/8" panel mount luer	Nordson biomedical	Nordson MLRLB230-6005	1/8", PP
10 gallon fish tank	Walmart	802262	Can hold up to 8 bioreactors depending on layout
100-1000 ccm flow meter	Dwyer	RMA-13-SSV	For bottle reactors
2 ft fluorescent light bank	Agrobrite	FLT24 T5	
200-2500 ccm flow meter	Dwyer	RMA-14-SSV	For air regulation upstream of humidifier
250 mL Pyrex bottles	Corning	16157-136	For gas mixing after humidifier
50-500 ccm flow meter	Dwyer	RMA-12-SSV	For hybridization tube reactors
5-50 ccm flow meter	Dwyer	RMA-151-SSV	For CO2 flow rate control
Air filters 0.2 µm	Whatman/ Fisher	09-745-1A	Polyvent, 28 mm, 0.2 µm, PTFE, 50 pack
Check valves	VWR	89094-714	
Corning lids for pyrex bottles	VWR	89000-233	10 GL45 lids
Female luer endcap	Nordson biomedical	Nordson FTLLP-6005	Female stable PP
Hybridization tubes	Corning	32645-030	35x300 mm, pack of 2
Light timer	Walmart	556393626	
Locknuts	Nordson biomedical	Nordson LNS-3	1/4", red nylon
Low profile magnetic stirrer	VWR	10153-690	Low profile magnetic stirrer
Male luer endcap	Nordson biomedical	Nordson LP4-6005	Male plug PP
Spinning luer lock ring	Nordson biomedical	Nordson FSLLR-6005	

Stir bars - long	VWR	58949-040	38.1 mm, for bottle reactors
Stir bars - medium	VWR	58949-034	25 mm, for hybridization tubes
Supplies and reagents for culturing algae			
0.2 µm filters	VWR	28145-491	13 mm, PTFE, for filtering spent media from daily culture sampling
1 mL syringes	Air-tite	89215-216	For filtering spent media from daily culture sampling
1.5 mL tubes	VWR	87003-294	Sterile (or equivalent)
10 mL Serological pipettes	Greiner Bio-One	82050-482	Sterile (or equivalent)
100 mm plates	VWR	25384-342	100x15 mm stackable petri dishes, sterile
15 mL tubes	Greiner Bio-One	82050-276	Sterile (or equivalent), polypropylene
2 mL Serological pipette tips	Greiner Bio-One	82051-584	Sterile (or equivalent)
2 mL tubes	VWR	87003-298	Sterile (or equivalent)
50 mL tubes	Greiner Bio-One	82050-348	Sterile (or equivalent), polypropylene
96 well microplate	Greiner Bio-One	89089-578	Polystyrene with lid, flat bottom
Inoculating loops	VWR	80094-478	Sterile (or equivalent)
Liquid carbon dioxide tank and regulator	Airgas	CD-50	
Supplies and reagents for lipid extraction and neutral lipid assay			
2 mL bead tubes	VWR	10158-556	Polypropylene tube w/ lid
96 well microplates	Greiner Bio-One	82050-774	Polypropylene, flat bottom
Bleach	Walmart	550646751	Only use regular bleach, not cleaning bleach
Chloroform	BDH	BDH1109-4LG	
Dimethyl sulfoxide	BDH	BDH1115-1LP	
Isopropyl alcohol	BDH	BDH1133-1LP	
Methanol	BDH	BDH20864.400	
Nile red	VWR	TCN0659-5G	
Pasteur pipette tips	VWR	14673-010	
Sodium chloride	BDH	BDH9286-500G	
Vegetable oil	Walmart	9276383	Any vegetable oil should work as long as it is fresh
Zirconia/ silica beads (0.5 mm diameter)	Biospec products	11079105z	
Equipment			
Analytical balance	Mettler-Toledo	XS205DU	Capable of at least 4 decimal accuracy
Bead homogenizer	Omni	19-040E	
Benchtop micro centrifuge	Thermo	Heraeus Fresco 21 with 24x2	Including rotor capable of handling 1.5 and 2 mL tubes
Dry block heater	VWR	75838-282	Including dry block for a microplate
Freeze dryer	Labconco	7670520	2.5L freeze drying system
Large benchtop centrifuge	Thermo	Heraeus Megafuge 16R Tissue	Including rotors capable of handling 400 mL bottles, 50 mL tubes, and 15 mL tubes

Microplate reader	Molecular Devices	SpectraMax M2	Capable of reading absorbance and fluorescence
Vortex mixer	VWR	10153-838	