

Materials List for:

Extraction and Analysis of Microbial Phospholipid Fatty Acids in Soils

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Materials

Name	Company	Catalog Number	Comments
Pierce Reacti-Vap III-evaporator gassing manifold with 27 ports			Used in Steps 1-3
Compressed Nitrogen	Praxair	Ni-T	Dangerous: Use only after training and minimize contact and use; Used in Steps 1-3
Disposable centrifuge tube and Teflon-lined cap	Fisher Scientific	05-569-3	Used for Step 1 (1 per sample) and Step 2 (1 per sample)
Disposable glass long-necked Pasteur pipettes	Fisher Scientific	13-678-20D	Used for Step 1 (2 per sample)
Disposable glass short-necked Pasteur pipettes	Fisher Scientific	13-678-4	Used for Step 2 (1 per sample), Step 3 (1 per sample), GC analysis (1 per sample), and one for each type of solution dispensed during PLFA methods (~10 per batch of samples)
Elastic band	Grand & Toy	42199	1 per sample for freeze drying
Freeze Dryer-Labconco 7806002 and 7753000			Used for preparing samples for PLFA analysis - use whatever model your lab has
Freezer (-20 °C, -80 °C)	Revco	ULT2586-5-A36	Minus 80 °C is used for freezing freshly collected soil samples, -20 °C is used for storing samples at end of each of 3 steps of PLFA analysis
Gas chromatograph - Agilent 6890 Series capillary gas chromatograph (GC; Wilmington, DE) equipped with a 50 m Ultra 2 (5%-phenyl)-methylpolysiloxane column	Agilent Technologies		Used for GC analysis, other models of GC could also be used (1 needed)
Analytical column	Agilent Technologies	19091B-105	
Gas chromatograph insert	Agilent Technologies	5183-4692	Used for GC analysis (1 per sample)
Gas chromatograph vial and lid	Agilent Technologies	5188-6592	Used for GC analysis (1 per sample)
Hexanes	Fisher Scientific	H292-4	Hazardous: use only in fume hood, Read MSDS, minimize use and wear appropriate PPE; Total volume per sample = 4 ml (2.0 ml + 2.0 ml (step 3))
Hot water bath -Isotemp 220	Fisher Scientific		Used for Step 3 (1 per batch of samples)

Kimwipe	Fisher Scientific	06-666-2	Used for freeze drying samples
KOH, ACS grade	Fisher Scientific	P250-500	Hazardous: Use only in fume hood, Read MSDS, minimize use and wear appropriate PPE; Used for making citrate buffer (used in Step 1) and methanolic KOH (step 3)
Lab quake end-over-end shaker for centrifuge tubes	Barnstead/Thermolyne	3,625,485	Used for Step 1 (1 per batch of samples of appropriate holding capacity)
MeC10:0 methyl decanoate internal standard	Sigma-Aldrich	299030-2.5G	Used for GC analysis
Methanol	Fisher Scientific	A454-4	Hazardous: Use only in fume hood, Read MSDS, minimize use and wear appropriate PPE; Total volume per sample = 15.5 ml (5 ml + 5 ml (step 1) + 5 ml (step 2) + 0.5 ml (step 3))
MIDI Peak Identification Software	MIDI, Inc., Newark, DE		Used for interpreting GC analysis output
MIDI Calibration Standard Mix for Microbial Identification System	Lab Sphere Inc	1200-A	Used as a Calibration mix for TSBA 40
Nitrile gloves	Fisher Scientific	27-058-52	Used always when conducting PLFA lab work
pH Meter - Accumet XL200	Fisher Scientific		Used for making citrate buffer
Pipette (0.2 - 2 ml) - Socorex - Calibra Digital 832 Macropipette	Socorex	832.02	Used throughout Steps (1 per sample)
250 µl gastight syringe	Hamilton	1725	Used for GC analysis (1 per sample)
silver shield gloves	Sigma-Aldrich	Z529575	For use when handling chloroform
solid phase extraction (SPE) column	Agilent Technologies	5982-2265	Used for Step 2 (1 per sample)
SPE glass column holder with spigots and vacuum apparatus attached	Sigma-Aldrich		Used for Step 2 (1 per batch of samples)
Vortex - Barnstead International Maxi Mix II- M37615	Barnstead International	M37615	Used in Steps 1-3
Water - ultra-pure and Chromosolv HPLC grade	Sigma-Aldrich	270733-4L	Used throughout analysis
Whirl-Pak® bags	Fisher Scientific	01-812-120	Used in sample collection - 2 bags required per sample collected