

Materials List for:

Laboratory Simulation of an Iron(II)-rich Precambrian Marine Upwelling System to Explore the Growth of Photosynthetic Bacteria

Markus Maisch^{1,2}, Wenfang Wu¹, Andreas Kappler¹, Elizabeth D. Swanner^{1,2}

¹Department of Geosciences, University of Tuebingen

²Department of Geological and Atmospheric Sciences, Iowa State University

Correspondence to: Elizabeth D. Swanner at eswanner@iastate.edu

URL: <https://www.jove.com/video/54251>

DOI: [doi:10.3791/54251](https://doi.org/10.3791/54251)

Materials

Name	Company	Catalog Number	Comments
Widdel flask (5 L)	Ochs	110015	labor-ochs.de
Glass bottles (5 L)	Rotilabo	Y682.1	carlroth.com
Glass pipettes (5 ml)		51714	labor-ochs.de
0.22 µm Steritop filter unit (0.22 µm Polyethersulfone membrane)	Millipore	X337.1	carlroth.com
Aluminum foil			
Sterile Luer Lock glass syringe, filled with cotton		C681.1	carlroth.com
Luer Lock stainless steel needles (150 mm, 1.0 mm ID)		201015	labor-ochs.de
NaCl	Sigma	433209	sigmaaldrich.com
MgSO ₄	Sigma	208094	sigmaaldrich.com
CaCl ₂	Sigma	C4901	sigmaaldrich.com
NH ₄ Cl	Sigma	A9434	sigmaaldrich.com
KH ₂ PO ₄	Sigma	P5655	sigmaaldrich.com
KBr	Sigma	P3691	sigmaaldrich.com
KCl	Sigma	P9541	sigmaaldrich.com
Glass cylinder		Y310.1	carlroth.com
Glass wool		7377.2	carlroth.com
Glass beads (ø 0.55 - 0.7 mm)		11079105	biospec.com
Butyl rubber stopper (ø 1.2 cm)		271024	labor-ochs.de
Petri Dish, glass (ø 8.0 cm)		T939.1	carlroth.com
Polymers glue		OTTOSEAL S68	adchem.de
Optical oxygen sensor foil (for oxygen analysis, see below)		– on request –	presens.de
Rubber tubing (35 mm, 7 mm ID)		770350	labor-ochs.de
Luer Lock tube connector (3.0 mm, Luer lock male = LLM)		P343.1	carlroth.com
Luer Lock tube connector (3.0 mm, Luer lock female = LLF)		P335.1	carlroth.com
Rubber tubing (25 mm, 0.72 mm ID)		2600185	newageindustries.com
Rubber tubing (50 mm, 7 mm ID)		770350	labor-ochs.de
Luer Lock stainless steel needle (150 mm, 1.0 mm ID)		201015	labor-ochs.de
Luer Lock glass syringe (10 ml)		C680.1	carlroth.com

Loose cotton		–	
Butyl rubber stopper (ø 1.75 cm)		271050	labor-ochs.de
Stainless steel needle (40 mm, 1.0 mm ID)	Sterican	4665120	bbraun.de
Luer Lock stainless steel needle (150 mm, 1.5 mm ID)		201520	labor-ochs.de
position: Luer Lock female connector part at C.7			
Polymers glue		OTTOSEAL S68	adchem.de
Stainless steel needle (120 mm, 0.7 mm ID)	Sterican	4665643	bbraun.de
Rubber tubing (40 mm, 0.74 mm ID)		2600185	newageindustries.com
Heat shrink tubing (35 mm, 3 mm ID shrunk)		541458 - 62	conrad.de
Tube clamp		STHC-C-500-4	tekproducts.com
Luer Lock tube connector (1.0 mm, LLF)		P334.1	carloth.com
Luer Lock plastic cap (LLM)		CT69.1	carloth.com
Glass bottle (5 L)	Rotilabo	Y682.1	carloth.com
Butyl rubber stopper (for GL45)		444704	labor-ochs.de
Stainless steel capillary (300 mm, 0.74 mm ID)		56736	sigmaaldrich.com
Stainless steel capillary (50 mm, 0.74 mm ID)		56737	sigmaaldrich.com
Shrink tubing (35 mm, 3 mm ID shrunk)		541458 - 62	conrad.de
Rubber tubing (100 mm, 0.74 mm ID)		2600185	newageindustries.com
Luer Lock tube connector (1.0 mm, LLF)		P334.1	carloth.com
Luer Lock glass syringe (10 ml)		C680.1	carloth.com
Loose cotton		–	
Butyl rubber stopper (ø 1.75 cm)		271050	labor-ochs.de
Stainless Steel needle (40 mm, 0.8 mm ID)	Sterican	4657519	bbraun.de
Luer lock glass syringe (5 ml)		C679.1	carloth.com
Butyl rubber stopper (ø 1.75 mm)		271050	labor-ochs.de
Rubber tubing (40 mm, 0.74 mm ID)		2600185	newageindustries.com
Glass bottle (2 L)	Rotilabo	X716.1	carloth.com
Butyl rubber stopper (for GL45)		444704	labor-ochs.de
Stainless steel capillary (50 mm, 0.74 mm ID)		56736	sigmaaldrich.com
Rubber tubing (30 mm x 0.74 mm ID)		2600185	newageindustries.com
Rubber tubing (100 mm x 0.74 mm ID)		2600185	newageindustries.com
Luer Lock tube connector (1.0 mm, LLF)		P334.1	carloth.com
Luer Lock 3-way connector (LLF, 2x LLM)		6134	cadenceinc.com

Light source	Samsung	SI-P8V151DB1US	samsung.com
Peristaltic pump	Ismatec	EW-78017-35	coleparmer.com
Pumping tubing (0.89 mm ID)		EW-97628-26	coleparmer.com
Stainless steel capillary (200 mm, 0.74 mm ID)		56736	sigmaaldrich.com
Stainless steel capillary (400 mm, 0.74 mm ID)		56737	sigmaaldrich.com
Supel-Inert Foil (Tedlar - PFC) gas pack (10 L)		30240-U	sigmaaldrich.com
Rubber tube (30 mm, 6 mm ID)		770300	labor-ochs.de
Luer Lock tube connector (3.0 mm, LLM)		P343.1	carloth.com
Luer Lock tube connector (3.0 mm, LLF)		P335.1	carloth.com
Gas-tight syringe (20 ml)		C681.1	carloth.com
Bunsen burner		–	
Fiber optic oxygen meter for oxygen quantification	Presens	TR-FB-10-01	presens.de
Vacuum pump		–	
Silicone glue for oxygen optodes	Presens	PS1	presens.de