

Materials List for:

Monitoring Changes in Membrane Polarity, Membrane Integrity, and Intracellular Ion Concentrations in *Streptococcus pneumoniae* Using Fluorescent Dyes

Emily A. Clementi¹, Laura R. Marks^{*1}, Hazeline Roche-Håkansson¹, Anders P. Håkansson^{1,2,3}

¹Department of Microbiology and Immunology, University at Buffalo, State University of New York

²Witebsky Center for Microbial Pathogenesis and Immunology, University at Buffalo, State University of New York

³New York State Center of Excellence in Bioinformatics and Life Sciences, University at Buffalo, State University of New York

*These authors contributed equally

Correspondence to: Anders P. Håkansson at andersh@buffalo.edu

URL: <https://www.jove.com/video/51008>

DOI: [doi:10.3791/51008](https://doi.org/10.3791/51008)

Materials

Name	Company	Catalog Number	Comments
Todd-Hewitt broth	Bacto, BD Diagnostics	249240	
Yeast Extract	Bacto, BD Diagnostics	212750	
Phosphate Buffered Saline (PBS; pH 7.2)	Invitrogen (GIBCO)		
Dimethyl sulfoxide	Sigma-Aldrich	D5879	DMSO
DiBAC ₄ (3) (bis-(1,3-dibutylbarbituric acid) trimethine oxonol)	Molecular Probes	B-438	
Propidium Iodide	Sigma-Aldrich	P4170	Make up in deionized water
D-(+)-Glucose	Sigma-Aldrich		
PowerLoad	Molecular Probes	P10020	100x concentrate
Probenecid	Molecular Probes	P36400	Make 100x stock by adding 1 ml of PBS to one 77 mg vial
Fura-2/AM	Molecular Probes	F1221	Special packaging (50 µg aliquots)
PBFI/AM	Molecular Probes	P1267	Special packaging (50 µg aliquots)
Nigericin	Sigma-Aldrich	N7143	
KH ₂ PO ₄	JT Baker	3246-01	monobasic
NaOH	JT Baker	5565-01	
K ₂ HPO ₄	JT Baker	4012-01	dibasic
BCECF/AM	Molecular Probes	B1170	Special packaging (50 µg aliquots)
CCCP	Sigma-Aldrich		Protonophore that causes an influx of H ⁺ into the cytoplasm, dissipating the electrical potential and the H ⁺ gradient.
Culture tube	VWR	53283-802	Fits the Spectronic spectrophotometer; borosilicate glass
Spectrophotometer	Thermo Scientific		Spectronic 20D+
15 ml Plastic conical tube	Corning	430790	
Clear 96-well polystyrene microtiter plate	Fisher Scientific	12-565-501	
Plate reader	BioTek	Synergy 2 Multi-Mode	
Gen5 software	BioTek	Gen5™ Software	