

Materials List for:

Method for Labeling Transcripts in Individual *Escherichia coli* Cells for Single-molecule Fluorescence *In Situ* Hybridization Experiments

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URL: <https://www.jove.com/video/56600>

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Materials

Name	Company	Catalog Number	Comments
Dextran sulfate sodium salt	Sigma-Aldrich	D8906	
Pure Ethanol, 99.5%, ACS reagent, absolute	Mallinckrodt Baker - Avantor	8025.25	
Diethylpyrocarbonate (DEPC)	Sigma-Aldrich	D5758	
RNase-free 20X SSC	Life Technologies/Ambion	AM9763	
RNase-free 10X PBS	Life Technologies/Ambion	AM9625	
TE buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8.0) BioUltra, for molecular biology	Sigma-Aldrich	93283	
nuclease-free water	Thermo Fisher Scientific	10977035	
Formaldehyde solution for molecular biology, 36.5-38% in water	Sigma-Aldrich	F8775	
Deionized formamide, nuclease free	Thermo Fisher Scientific/Ambion	AM9342	
E. coli tRNA (ribonucleic acid, transfer type xx from escherichia)	Sigma-Aldrich	R1753-500UN	
UltraPure BSA (50mg/ml)	Thermo Fisher Scientific/Ambion	AM2616	
Vanadyl-ribonucleoside complex, VRC, 200 mM	New England Biolab	S1402S	
Poly-L-Lysine	Sigma	P4707	
Cysteamine and oxygen	Sigma-Aldrich	30070	
Glucose Oxidase from Aspergillus niger, Type VII, 50KU	Sigma-Aldrich	G2133	
Catalase	Sigma-Aldrich	C40	
D-glucose	Sigma-Aldrich	G8270	
D-fucose	Sigma-Aldrich	F8150	
Vybrant DiO Cell-Labeling Solution	Life Technologies	V2286	
Agarose, low melting reagent	Sigma-Aldrich	A9414	
Adhesive silicone isolator 24-2mm Dia. X 1.8 mm depth JTR24R-A2-2.0	Grace Bio-Labs	JTR24R-A2-2.0 666208	
poly-D-lysine-coated glass bottom Glass Bottom Culture Dishes	MatTek Corporation	P35GC-1.5-14-C	
Super life nitrile powder free examination gloves	Supermax	TC-N-9889	
Brand sterilization incubator tape	Sigma-Aldrich	BR61750	
Microcentrifuge tubes (1.8 ml)	Axygen - Corning Life Sciences	MCT-175C	

Falcon round-bottom polypropylene tubes (14 ml)	BD Biosciences	352059	
Conical-bottom centrifuge polypropylene tubes (50 ml)	Corning	430828	
Serological pipettes (Corning 5 ml)	Corning Life Sciences	4051	
Serological pipettes (Corning 10 ml)	Corning Life Sciences	4488	
Serological pipettes (Corning 25 ml)	Corning Life Sciences	4251	
Spectrophotometer cuvettes	Sarstedt	67.742	
RNase-free pipette tips 0.2 - 20 µl	FroggaBio	FT20	
RNase-free pipette tips 10 - 200 µl	Axigene/corning	TF-200	
RNase-free pipette tips 100 - 1000 µl	FroggaBio	FT1000	
RNase-free pipette tips 100 - 1000 µl	Sorenson	14200	
Syringe disposable 10 mL needle G-21	Becton Dickinson, Biosciences	BD-309643	
Minisart 0.2 µm Syringe Filter	Sartorius	16534 K	
Nikon instruments microscope type A immersion oil A, 8cc	Nikon	MXA20233	
Microscope slides 76 x26, 3"x1"x1mm	Thermo Fisher Scientific	421-004ET	
#0 coverslip slide 24x60	Thermo Fisher Scientific/Menzel	BNBB024060A0	
Orbital shaker	M.R.C	TOU-50	
Hot block	M.R.C		
Vortex	Fried Electric Company	G-560-E	
Microcentrifuge	Eppendorf	5427R	
Centrifuge	Eppendorf	5810R	
Portable Pipet-Aid XP2, Pipette Controller	Drummond Scientific Company	4-000-501-I	
OD600 Spectrophotometer for Bacterial Growth Rates DiluPhotometer	Midsci	OD600-10	
iXon X3 EMCCD camera	Andor	DU-897E-CS0-#BV	
Eclipse Ti microscope	Nikon	MEA53100	
CFI plan apochromat DM 100X oil objective lambda PH-3 N.A 1.45 WD 0.13	Nikon	MRD31905	
Filter set (TRITC/CY3): EX - ET545/30X; EM - ET620/60M; BS - T570LP	Nikon	49005	
Filter set (CY5): EX - ET640/30X; EM - ET690/50M; BS - T660P	Nikon	49009	
Nis-elements AR auto reaserch software	Nikon	MQS31000	
STORM microscope	Vutara	SR-200	
NA 1.2 water immersion objective	Olympus		
SRX image acquisition and analysis software	Vutara		
Evolve 512 EMCCD camera	Photometrics		

Stellaris® FISH Probes, Custom Assay with CAL Fluor® Red 590 Dye	Biosearch Technologies Inc	SMF-1083-5	
Probe Sequence for galK mRNA:			
gtgtttttcttcagactc			
tagccaaatgcgttgcaaa			
ctgaatgggtgagtggcag			
caccaatcaaattcacgcgg			
acgaaaccgtcgtttagtc			
tgataatcaatcgcgagg			
gtgtgcacaactgatcacg			
acgcgaactttacggtcatc			
gctgattttcataatcggt			
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gtttcatgtgcgacaatgg			
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tgagactccgcatcaactc			
gaaatcatcgcatagagg			
caatttcgacgagtgatt			
ttgacgatttctaccagagt			
accttttcgccaatcacag			
ggatcagcgacgatacag			
atattgtcagcgacagctt			
gtctcttaaacctgttt			
ctcctgtgatggtttaca			
Stellaris® FISH Probes, Custom Assay with Quaser Fluor® Red 670 Dye	Biosearch Technologies Inc	SMF-1083-5	

Probe Sequence for sodB mRNA:			
gtgtttttcttcagactc			
tagccaaatgcgttgcaaa			
ctgaatggtgtgagtgccag			
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acgaaaccgctgttagtc			
tgataatcaatcgccaggg			
gtggtgcacaactgatcacg			
acgcgaacttacggtcatc			
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