

Materials List for:

Single-molecule Imaging of Gene Regulation *In vivo* Using Cotranslational Activation by Cleavage (CoTrAC)

Zach Hensel¹, Xiaona Fang^{1,2,3}, Jie Xiao¹

¹Department of Biophysics and Biophysical Chemistry, Johns Hopkins University School of Medicine

²Changchun Institute of Applied Chemistry, Chinese Academy of Sciences

³Department of Physics, Jilin University

Correspondence to: Zach Hensel at zhensel@jhu.edu

URL: <https://www.jove.com/video/50042>

DOI: [doi:10.3791/50042](https://doi.org/10.3791/50042)

Materials

Name	Company	Catalog Number	Comments
Agarose (Low melting temperature)	Lonza	50100	
Milli-Q H ₂ O			
5×M9 salts			Following recipe described in ⁹
20% glucose			
MgSO ₄			
CaCl ₂			
50×MEM amino acid solution	Invitrogen	11130-051	
Temperature-Controlled Growth Chamber Stage adaptor	Biopetech	FCS-2	
Objective Heater	Biopetech	Model depends on microscope objective	
Microaqueduct Slide	Biopetech	130119-5	
Micro cover glasses	VWR	40CIR-1	Can be difficult to source; also available from Biopetech
Cover glass/slide gasket	Biopetech	FCS2 0.75 mm	
Fluorescence Microscope	Various	Example setup: Coherent Innova 308C Argon-ion laser, Olympus IX-81 microscope, Olympus PlanApo 100X NA 1.45 objective, Metamorph software	Must have laser excitation, automated xyz stage, automation software capable of scripted imaging and autofocus, optics capable of resolving single fluorescent proteins
EM-CCD Camera	Various	Example setup: Andor Ixon DU-898	Must have sufficiently low noise to detect single fluorescent proteins above background