

Chemical Dimerization-Induced Protein Condensates on Telomeres

 Rongwei Zhao¹, David M. Chenoweth², Huaiying Zhang¹
¹Department of Biological Sciences, Mellon College of Science, Carnegie Mellon University ²Department of Chemistry, School of Arts and Sciences, University of Pennsylvania

Corresponding Author

 Huaiying Zhang
 huaiyinz@andrew.cmu.edu

Citation

 Zhao, R., Chenoweth, D.M., Zhang, H. Chemical Dimerization-Induced Protein Condensates on Telomeres. *J. Vis. Exp.* (170), e62173, doi:10.3791/62173 (2021).

Date Published

April 12, 2021

DOI

10.3791/62173

URL

jove.com/video/62173

Materials

Name	Company	Catalog Number	Comments
0.25% Trypsin, 0.1% EDTA in HBSS w/o Calcium, Magnesium and Sodium Bicarbonate	Corning	MT25053CI	
16% Formaldehyde (w/v), Methanol-free	Thermo Scientific	28906	Prepare 1% in 1x PBS
6 Well Culture Plate	VWR	10861-554	
Aluminum Foil	Fisher Scientific	01-213-101	
Anti-mCherry antibody	Abcam	Ab183628	
Anti-PML antibody	Santa Cruz	sc966	
Anti-SUMO1 antibody	Abcam	Ab32058	
Anti-SUMO2/3 antibody	Cytoskeleton	Asm23	
Blocking Reagent	Roche	11096176001	
Bovine Serum Albumin (BSA)	Fisher Scientific	BP9706100	
BTX Tube micro 1.5ML	VWR	89511-258	
Circle Cover Slips	Thermo Scientific	3350	
Confocal microscope	Nikon	MQS31000	
DAPI	Fisher Scientific	D1306	
Dimethyl Sulphoxide	Sigma-Aldrich	472301	
DMEM with L-Glutamine, 4.5g/L Glucose and Sodium Pyruvate	Corning	MT10017CV	
EMCCD Camera	iXon Life	897	
Ethanol	Fisher Scientific	4355221	
Fetal Bovine Serum, Qualified, USDA-approved Regions	Gibco	A4766801	
Formamide, Deionized	MilliporeSigma	46-101-00ML	
Goat anti-Mouse IgG (H+L), Recombinant Secondary Antibody, Alexa Fluor 647	Invitrogen	A28181	

Goat anti-Rabbit IgG (H+L), Recombinant Secondary Antibody, Alexa Fluor 647	Invitrogen	A32733	
High Precision Straight Tapered Ultra Fine Point Tweezers/Forceps	Fisher Scientific	12-000-122	
Laser merge module	Nikon	NIIMHF47180	
Leibovitz's L-15 Medium	Gibco	21083027	
Lipofectamine 2000 Transfection Reagent	Invitrogen	11668027	
Figure plotting software, MATLAB	The MathWorks		
Microscope Slide Box	Fisher Scientific	34487	
Nail Polish	Fisher Scientific	50-949-071	
Imaging software, NIS-Elements	Nikon		
Opti-MEM Reduced Serum Media	Gibco	51985091	
Parafilm	Bemis	13-374-12	
PBS 10x, pH 7.4	Fisher Scientific	70-011-044	
Penicillin-Streptomycin Solution, 100X	Gibco	15140122	
Piezo Z-Drive	Physik Instrumente (PI)	91985	
Pipet Tips	VWR	10017	
Plain and Frosted Clipped Corner Microscope Slides	Fisher Scientific	22-037-246	
Poly-D-Lysine solution	Sigma-Aldrich	A-003-E	
Sodium Azide	Fisher Scientific	BP922I-500	
Spinning disk	Yokogawa	CSU-X1	
Square Cover Slips	Thermo Scientific	3305	
TBS 10x solution	Fisher Scientific	BP2471500	
TelC-Alexa488	PNA Bio	F1004	
TMP	Synthesized by Chenoweth lab		Available upon request
TNH	Synthesized by Chenoweth lab		Available upon request
Tris Solution	Fisher Scientific	92-901-00ML	
Triton X-100 10% Solution	MilliporeSigma	64-846-350ML	Prepare 0.5% in 1x PBS
U2Os cell line	From E.V. Makayev lab (Nanyang Technological University, Singapore)	HTB-96	
VECTASHIELD Antifade Mounting Medium	Vector Laboratories	NC9524612	