

Materials List for:

High-resolution Spatiotemporal Analysis of Receptor Dynamics by Single-molecule Fluorescence Microscopy

Titiwat Sungkaworn¹, Finn Rieken¹, Martin J. Lohse¹, Davide Calebiro¹

¹Institute of Pharmacology and Toxicology and Bio-Imaging Center/Rudolf Virchow Center, DFG-Research Center for Experimental Biomedicine, University of Würzburg, Germany

Correspondence to: Davide Calebiro at davide.calebiro@toxi.uni-wuerzburg.de

URL: <https://www.jove.com/video/51784>

DOI: [doi:10.3791/51784](https://doi.org/10.3791/51784)

Materials

Name	Company	Catalog Number	Comments
Chloroform	AppliChem GmbH	A1585	CAUTION: toxic and irritating substance as well as a possible carcinogen
NaOH	Sigma-Aldrich	S8045	CAUTION: strong base and highly corrosive reagent
Absolute ethanol	Sigma-Aldrich	32205	
Glass coverslip	Marienfeld-Superior	111640	24 mm diameter, 0.13-0.16 mm thickness
0.2 mm sterile filter	Sarstedt	83.1826.001	
CHO cells	ATCC, USA	ATCC CCL-61	Chinese hamster ovary cell line
6-well cell culture plate	Nunc	140675	
DMEM/F-12 medium	GIBCO, Life Technologies	11039-021	Phenol-red free medium
Fetal bovine serum	Biochrom	S 0115	
Penicillin - streptomycin	Pan Biotech GmbH	P06-07 100	
Trypsin-EDTA	Pan Biotech GmbH	P10-23100	
Lipofectamine 2000	Invitrogen, Life Technologies	11668-019	
Opti-MEM I Reduced Serum Medium	Invitrogen, Life Technologies	31985-047	
Fluorophore-conjugated benzylguanine	New England BioLabs	S9136S	SNAP-Surface Alexa Fluor 647. Make a 1 mM stock solution in DMSO. Store at -20°C.
DMSO	AppliChem GmbH	A1584	
Imaging buffer:			137 mM NaCl, 5.4 mM KCl, 2 mM CaCl ₂ , 1 mM MgCl ₂ , 10 mM HEPES, pH 7.3, sterile-filtered
NaCl	AppliChem GmbH	A1371	
KCl	AppliChem GmbH	A3582	
CaCl ₂	AppliChem GmbH	A2303	
MgCl ₂	AppliChem GmbH	A3618	
HEPES	AppliChem GmbH	A3724	
Imaging chamber	Molecular Probes, Life Technologies	A-7816	Attofluor Cell Chamber, for microscopy
TIRF-M	Leica		Model: DMI6000B
TIRF objective	Leica	11 506 249	HCX PL Apo 100x/1.46 Oil CORR
EM-CCD camera	Roper Scientific		Photometrics Cascade 512B
Temperature controller	Pecon		Tempcontrol 37-2 digital

ImageJ software	NIH, USA		http://rsbweb.nih.gov/ij
u-track software	Laboratory for computational cell biology, Dept. of Cell Biology, Harvard Medical School, USA		http://lccb.hms.harvard.edu/software.html
Matlab software	The MathWorks, USA		