

Characterizing Mechanical Properties of Primary Cell Wall in Living Plant Organs using Atomic Force Microscopy

 Anna Petrova¹, Liudmila Kozlova¹
¹Laboratory of Plant Cell Growth Mechanisms, Kazan Institute of Biochemistry and Biophysics, FRC Kazan Scientific Center of RAS

Corresponding Author

Anna Petrova

anna.petrova@kibb.knc.ru

Citation

 Petrova, A., Kozlova, L. Characterizing Mechanical Properties of Primary Cell Wall in Living Plant Organs using Atomic Force Microscopy. *J. Vis. Exp.* (183), e63904, doi:10.3791/63904 (2022).

Date Published

May 18, 2022

DOI

10.3791/63904

URL

jove.com/video/63904

Materials

Name	Company	Catalog Number	Comments
Agarose, low melting point	Helicon	B-5000-0.1	for sample fixation
Brush	-	-	for section moving
Cantilevers	NanoTools, Germany	NT_B150_v0020-5	Model: Biosphere B150-FM
Cantilevers	NT-MDT, Russia	FMG01/50	Model: FMG01
Cyanoacrylate adhesive	-	-	for vibratome
Glass slides	Heinz Herenz	1042000	for vibratome and AFM calibration
ImageAnalysis P9 Software	NT-MDT, Russia	-	for data analysis
Leica DM1000 epifluorescence microscope	Leica Biosystems, Germany	11591301	for section check
NaOCl	-	-	for seed sterilization
Nova PX 3.4.1 Software	NT-MDT, Russia	-	for experiments conducting
NTEGRA Prima microscope with HD controller	NT-MDT, Russia	-	for AFM and data acquisition
Petri dish 35 mm	Thermo Fisher Scientific	153066	for sample fixation
Tip pipette 1000 µL	Thermo Fisher Scientific	4642092	-
Tip pipette 2-20 µL	Thermo Fisher Scientific	4642062	-
Ultrapure water	-	-	-
Vibratome Leica VT 1000S	Leica Biosystems, Germany	1404723512	for sample sectioning