

Materials List for:

# Use of Atomic Force Microscopy to Measure Mechanical Properties and Turgor Pressure of Plant Cells and Plant Tissues

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## Materials

Name	Company	Catalog Number	Comments
<b>Growth medium</b>			
1000x vimatin stock solution			used to make ACM, composition see Stanislas et al., 2017. Add to ACM after autoclaving, before pouring.
1-N-Naphthylphthalamic acid (NPA)	Sigma-Aldrich/Merck	132-66-1	add to Arabidopsis medium, 10 µM. Add after autoclaving, before pouring.
agar-agar	Sigma-Aldrich/Merck	9002-18-0	add to Arabidopsis medium, 1% w/v.
agarose	Merck Millipore	9012-36-6	used to make solid ACM, 0.8% w/v.
Arabidopsis medium	Duchefa Biochimie	DU0742.0025	For in vitro arabidopsis culture, 11.82g/L.
Calcium nitrate tetrahydrate	Sigma-Aldrich/Merck	13477-34-4	add to Arabidopsis medium, 2mM.
MURASHIGE & SKOOG MEDIUM	Duchefa Biochimie	M0221.0025	Basal salt mixture, used to make ACM, 2.2g/L.
N6-benzyladenine (BAP)	Sigma-Aldrich/Merck	1214-39-7	used to make ACM, 555 nM. Add to ACM after autoclaving, before pouring.
oryzalin	Sigma-Aldrich/Merck	19044-88-3	for oryzalin treatment, 10 µg/mL.
plant preservation mixture (PPM)	Plant Cell Technology		used to make ACM, 0.1% v/v. Add to ACM after autoclaving, before pouring.
Potassium hydroxide	Duchefa Biochimie	1310-58-3	used to make Arabidopsis medium and ACM, both pH 5.8.
sucrose	Duchefa Biochimie	57-50-1	used to make ACM, 1% w/v.
<b>Tools for AFM</b>			
BioScope Catalyst BioAFM	Bruker		The AFM used for turgor pressure measurement in this protocol.
Nanowizard III + CellHesion	JPK (Bruker)		The AFM used for measuring mechanical properties.
Patafix	UHU	D1620	
Reference elastic structure	Nanoldea	2Z00026	
Reprorubber-Thin Pour	Flexbar	16135	biocompatible glue.
Spherical AFM tips	Nanoandmore	SD-SPHERE-NCH-S-10	Tips used for measuring mechanical properties.