

Materials List for:

# AFM-based Mapping of the Elastic Properties of Cell Walls: at Tissue, Cellular, and Subcellular Resolutions

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## Materials

| Name                                 | Company                                                                            | Catalog Number     | Comments                                                                                                                                                                        |
|--------------------------------------|------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AFM                                  | JPK                                                                                | NanoWizard         | All the 3-generation are able to do the work with the same preferment.                                                                                                          |
| AFM stage                            | JPK                                                                                | CellHesion         | Required for sample with low topography (less than 11 $\mu\text{m}$ between the lowest and the highest point in the area of force scanning).                                    |
| AFM optics                           | JPK                                                                                | Top View Optics    | Very important in order to position the sample. Could be replaced by long range binoculars or a microscope.                                                                     |
| Stereo microscope                    | Leica                                                                              | M125               | Any type of stereo microscope could do.                                                                                                                                         |
| 150 nm mounted cantilever            | Nanosensors Rue Jaquet-Droz<br>1Case Postale 216 CH-2002<br>Neuchatel, Switzerland | R150-NCL-10        | To measure only the cell wall at the surface of the epidermis use.                                                                                                              |
| 1 $\mu\text{m}$ mounted cantilever   | Nanosensors Rue Jaquet-Droz<br>1Case Postale 216 CH-2002<br>Neuchatel, Switzerland | SD-Sphere-NCH-S-10 | To measure the mechanics of the cell wall orthogonal to the surface of the epidermis.                                                                                           |
| Tipless cantilever                   | Nanosensors Rue Jaquet-Droz<br>1Case Postale 216 CH-2002<br>Neuchatel, Switzerland | TL-NCH-20          | To measure the local mechanics of the tissue (2-3 cell wide) use a 5 $\mu\text{m}$ mounted cantilever. We attached a 5 $\mu\text{m}$ borosilicate bead to a tipless cantilever. |
| 5 $\mu\text{m}$ silicon microspheres | Corpuscular                                                                        | C-SIO-5            |                                                                                                                                                                                 |
| Araldite                             | Bartik S.A. 77170 Coubet, France                                                   |                    | Araldite for fixing the bead to the tipless cantilever.                                                                                                                         |
| Low melting agarose                  | Fisher Scientific Fair Lawn, New Jersey 07410                                      | BP160-100          | 34-45 °C gelation temperature                                                                                                                                                   |
| D-Mannitol                           | Sigma-Aldrich, 3050 Spruce Street, St. Louis, MO 63103 USA                         | M4125-500G         |                                                                                                                                                                                 |
| 2 Stainless Steel No. 5 Tweezers     | Ideal-Tek 6828 Balerna, Switzerland                                                | 951199             |                                                                                                                                                                                 |