

Master thesis announcement:

Membrane-wall attachments by cellulose synthase complexes?

Cell wall formation is characteristic for plant cells and wall-deficiency mutants are lethal. The plant cell wall is produced by cellulose synthase complexes. These rosettes are embedded in the plasma membrane and spin out cellulose fibres according to a microtubuli template. Stable transformation of fluorescently labelled cellulose synthase complexes finally enable the visualisation and localisation of these essential structures. However, the fate of cellulose synthase complexes in osmotic stress situations (i.e. reduced turgor pressure) remains unclear.

In the present master project, fluorescently labelled cellulose synthase complexes of *Arabidopsis* hypocotyl cells will be visualised in the light microscope before, during and after osmotic stress (including plasmolysis). The role the synthase complexes in anchoring the plasma membrane to the cell wall can thus be investigated.

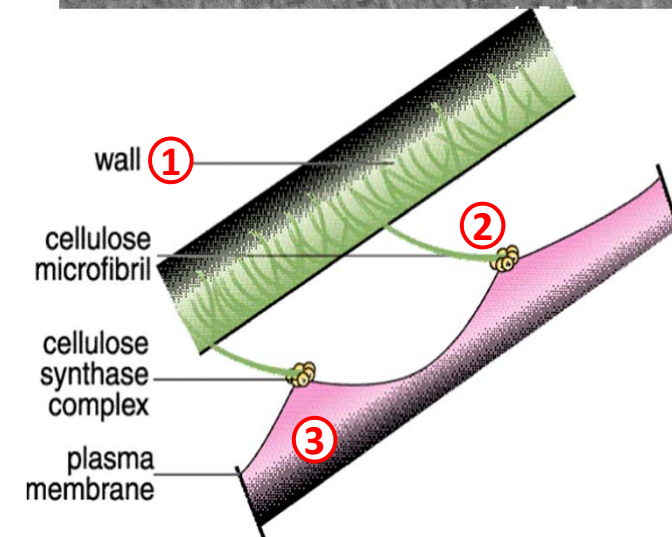
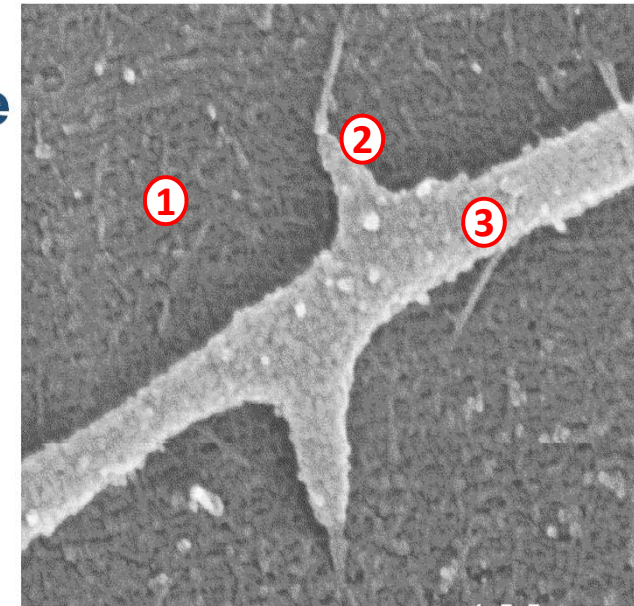
Your interest in cells and microscopy is an advantage!

Duration: approximately 6 months

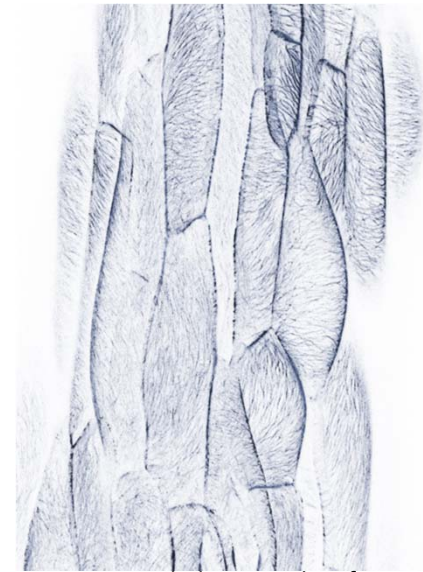
Supervisor: Ao Prof Dr Ingeborg Lang

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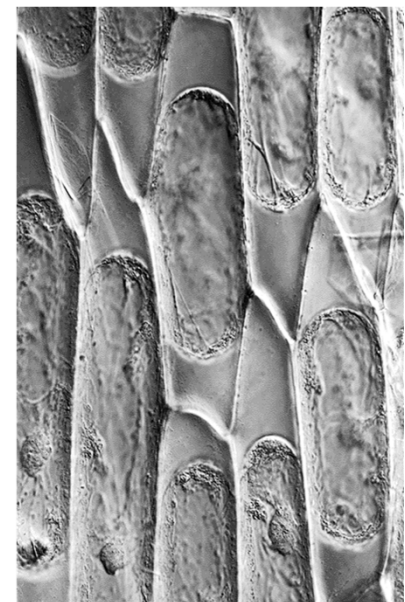
If you are interested, please contact: ingeborg.lang@univie.ac.at



Top: High magnification of plasma membrane strand with fibres merging into the cell wall
Bottom: idea of membrane-wall attachment by cellulose fibres (schematic)



Fine microtubuli as template for cellulose fibres of the cell wall



Plasmolysed protoplasts, detached from the cell wall