

## Cell wall biosynthesis and control of morphogenesis in *Physcomitrella patens*

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Two types of growth coexist in moss: tip growing protonema filaments and more complex tri-dimensional gametophores. The growth transition is initiated by the formation of buds. In higher plants it has been suggested that cell wall organisation could play a role in the control of plant morphogenesis and architecture.

In bryophytes the composition as well as the organisation of cell wall polysaccharides is poorly known. Cellulose synthase rosettes have been evidenced on the plasma membrane of caulonema cells in *Funaria hygrometrica*. Moreover moss EST databases contain sequences homologous to higher plant genes involved in the cellulose synthesis and cell wall organisation.

We have obtained preliminary data on the *P. patens* cell wall by FTIR-microspectroscopy analysis and by determination of the sugar composition by Gas Liquid Chromatography. The composition of the total cell walls is close to that observed for cell walls from dicotyledonous plants. Isolation and analysis of individual wall polysaccharides is under way.

Moreover two cDNA encoding protein reminiscent of plant structural cell wall proteins have been isolated among genes specifically expressed during bud formation in response to cytokinin. The expression pattern of these genes will be discussed and knockout experiments described.