

Arabinogalactan proteins and protonemal growth of *Physcomitrella patens*

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The single-cell filamentous growth of moss allows cell wall molecules to be accessed directly at cell surfaces, providing an opportunity to analyse cell wall components without the need for the invasive disruption of multicellular tissue. The analysis of the public database of *Physcomitrella* ESTs has highlighted several ESTs with strong homology to anthophyta AGPs. We have directly examined the surface of moss cells using monoclonal antibody probes in a novel whole mount fluorescent-labelling technique. The development of protonemal tissue has been studied from both the regeneration of protoplasts and the germination of spores. The LM6 (1 \times 5)- β -L-arabinan epitope has been found associated with the plasma membrane. This is a novel observation, suggesting the presence of a proteoglycan such as an arabinogalactan protein (AGP). AGPs are implicated in plant growth and development and specifically interact with a group of synthetic phenazo dyes known collectively as the Yariv reagents. Treatment of protonemal tissue with β -glucosyl Yariv reagent resulted in reversible inhibition of growth - implicating AGPs in apical extension. We have used β -glucosyl Yariv reagent to purify AGP(s) from *Physcomitrella* and further characterisation is in progress.