

# **ANALYSIS OF ARABIDOPSIS POLYSACCHARIDES STRUCTURE BY PACE**

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In order to profile polysaccharides in biosynthetic mutants, we have been developing methods of gel electrophoresis of fluorophore labelled oligosaccharides, which we call Polysaccharide Analysis using Carbohydrate gel Electrophoresis (PACE). Since migration depends both on monosaccharide composition and linkage, it can be used to characterise a range of charged and uncharged oligosaccharides. We are using it to study various Arabidopsis wall polysaccharides such as mannans and polygalacturonic acid. Recently, we have studied the electrophoretic migration of oligogalacturonic acids (OGAs) derivatised by the AMAC fluorophore (2-aminoacridone). The migration was dependent on degree of methylation and degree of polymerisation, probably because the OGA mobility relies on the charge of the galacturonic acid residues. Since both methylated and unmethylated oligosaccharides can be resolved, PACE is a powerful method for studying the fingerprint of pectin hydrolysis. Furthermore, using an Endo-PG that can distinguish low and highly methylated pectin, PACE can be used to investigate the blockwise or non-blockwise distribution of methylation of polygalacturonic acid. Using a specific mannanase, we showed that there is a glucomannan present in Arabidopsis cell walls.