

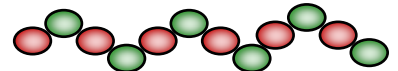
# PECTIC POLYSACCHARIDES

Galacturonic acid - rich polysaccharides from the primary plant cell wall matrix

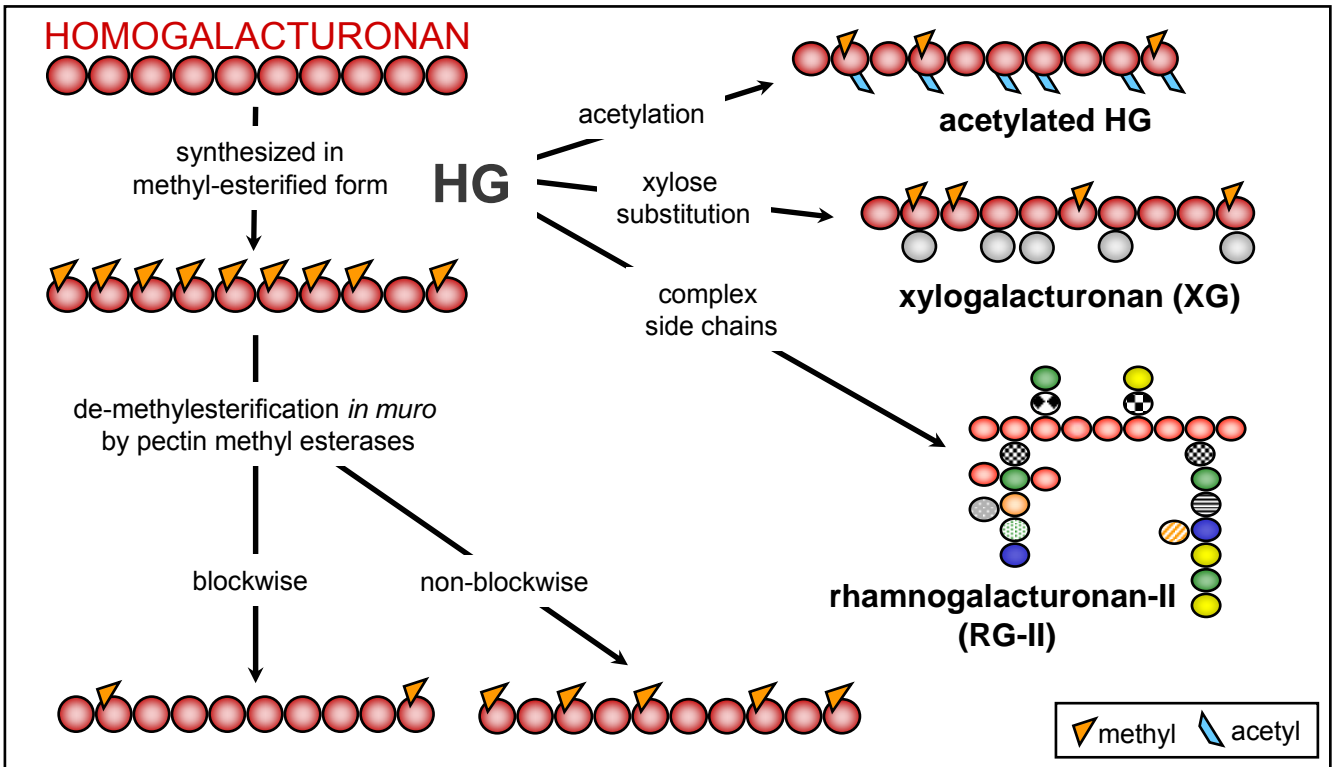
Galacturonic acid (GalA) occurs in two domains that may be linked covalently :

1 -  $\alpha(1\rightarrow4)$ -linked D-GalA : **HOMOGALACTURONAN (HG)** 

2 - a repeating dimer of  $\rightarrow4)$ GalA $\alpha(1\rightarrow2)$ Rha $\alpha(1\rightarrow$  : **RHAMNOGALACTURONAN (RG)**

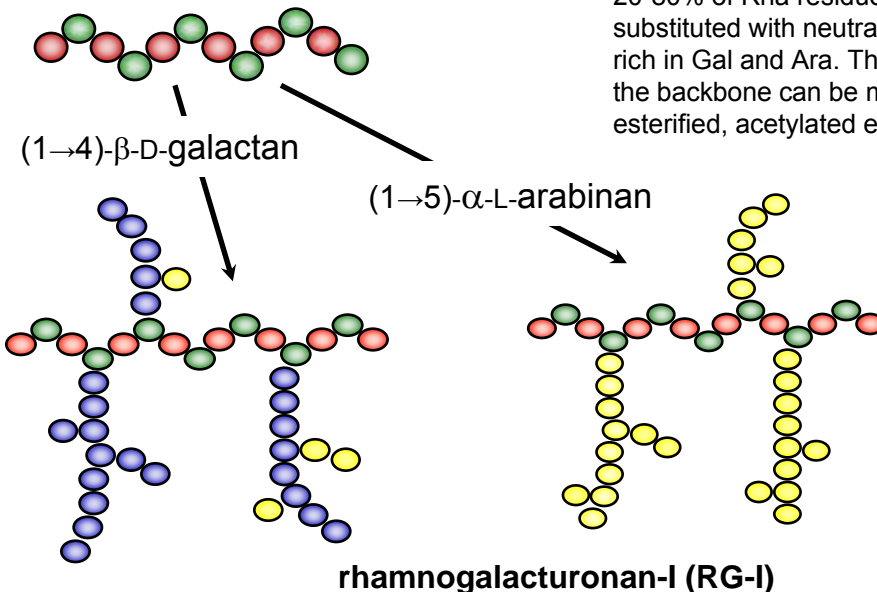


HG & RG are subject to modifications/substitutions  $\rightarrow$  altered properties & functions



## RHAMNOGALACTURONAN (RG)

20-80% of Rha residues in RG are substituted with neutral side chains rich in Gal and Ara. The GalA in the backbone can be methyl-esterified, acetylated etc. as in HG

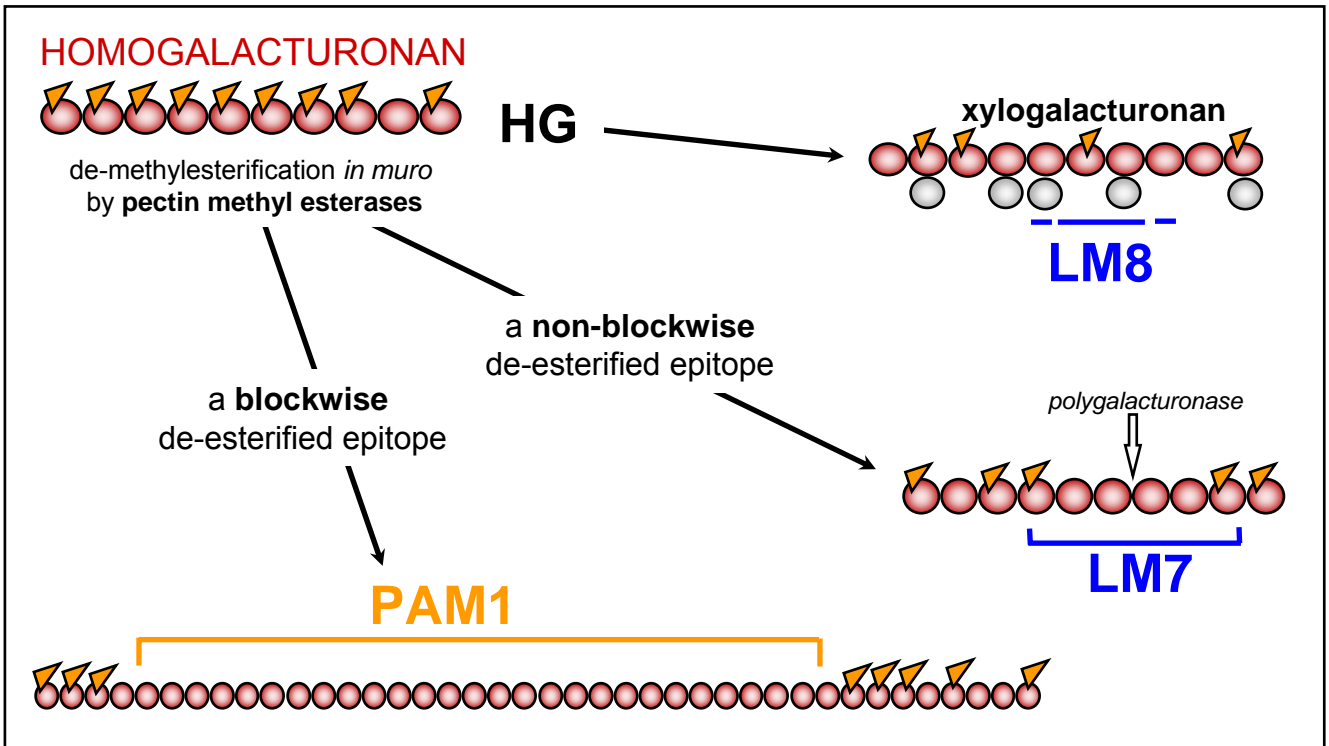


-  GalA
-  Rha
-  Ara
-  Gal
-  Xyl
-  Api
-  KDO
-  Dha
-  GlcA
-  Fuc
-  AcMe Fuc
-  Me Xyl
-  Ac Ace

# MONOCLONAL ANTIBODIES TO PECTIC POLYSACCHARIDES

Pectic polysaccharides are structurally complex and antibodies are useful to determine the distribution and organization of pectic domains within the primary cell wall matrix.

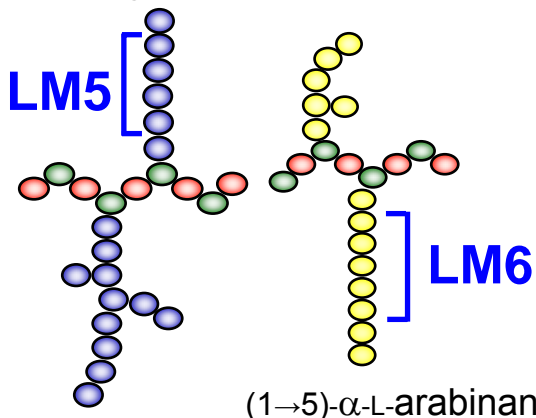
Our antibodies are made using **hybridoma** or **phage display** technologies. A range of monoclonal antibodies to pectic polysaccharide epitopes have been generated.



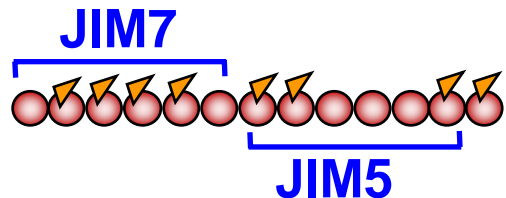
## RHAMNOGALACTURONAN-I (RG-I)

Antibodies to epitopes occurring in side chains of RG-I have been prepared using **neoglycoproteins**

(1→4)-β-D-galactan



The widely used **JIM5** and **JIM7** recognise a range of partially methyl-esterified HG structures with representative epitopes shown below.



[ ] Epitope defined

- - - Epitope not yet defined

**M** Hybridoma monoclonal antibody

**M** Phage display monoclonal antibody