Anti-Homogalacturonan [JIM5]

Catalogue number: 157924
Sub-type:
Images:

Contributor

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Institute: University of Leeds
Images:

Tool details

***FOR RESEARCH USE ONLY**

Name: Anti-Homogalacturonan [JIM5]

Alternate name: 1,4-linked ?-d-galactopyranosyluronic acid (GalpA) residues

Class: Monoclonal
Conjugate: Unconjugated
Description: Homogalacturonan (HG) is a multifunctional pectic polysaccharide of the primary cell wall matrix of all land plants. HG is thought to be deposited in cell walls in a highly methyl-esterified form but can be subsequently de-esterified by wall-based pectin methyl esterases (PMEs) that have the capacity to remove methyl ester groups from HG. Plant PMEs typically occur in multigene families/isoforms, but the precise details of the functions of PMEs are far from clear. Most are thought to act in a processive or blockwise fashion resulting in domains of contiguous de-esterified galacturonic acid residues. Such de-esterified blocks of HG can be cross-linked by calcium resulting in gel formation and can contribute to intercellular adhesion. In addition to blockwise de-esterification, HG with a non-blockwise distribution of methyl esters is also an abundant feature of HG in primary plant cell walls. A partially methyl-esterified epitope of HG that is generated in greatest abundance by non-blockwise de-esterification is spatially regulated within the cell wall matrix and occurs at points of cell separation at intercellular spaces in parenchymatous tissues of pea and other angiosperms. Analysis of the properties of calcium-mediated gels formed from pectins containing HG domains with differing degrees and patterns of methyl-esterification indicated that HG with a non-blockwise pattern of methyl ester group distribution is likely to contribute distinct mechanical and porosity properties to the cell wall matrix. This has important implications for our understanding of both the action of pectin methyl esterases on matrix properties and mechanisms of intercellular adhesion and its loss in plants.
Purpose:
Parental cell:
Organism:
Tissue:
Model:

Gender:
Isotype: IgG
Reactivity: Land Plants
Selectivity:
Host: Rat
Immunogen: Polysaccharide
Immunogen UNIPROT ID:
Sequence:
Growth properties:
Production details:
Formulation:
Recommended controls: IgG
Bacterial resistance:
Selectable markers:
Additional notes:

Target details

Target: Un-esterified (JIM5) epitope of pectin. No known cross-reactivity with other polymers. It can recognise pectic polysaccharides in several species. The antibody recognises partially methyl-esterified epitopes of homogalacturonan and can also bind to un-esterified homogalacturonan.

Target alternate names:

Target background: Homogalacturonan (HG) is a multifunctional pectic polysaccharide of the primary cell wall matrix of all land plants. HG is thought to be deposited in cell walls in a highly methyl-esterified form but can be subsequently de-esterified by wall-based pectin methyl esterases (PMEs) that have the capacity to remove methyl ester groups from HG. Plant PMEs typically occur in multigene families/isoforms, but the precise details of the functions of PMEs are far from clear. Most are thought to act in a processive or blockwise fashion resulting in domains of contiguous de-esterified galacturonic acid residues. Such de-esterified blocks of HG can be cross-linked by calcium resulting in gel formation and can contribute to intercellular adhesion. In addition to blockwise de-esterification, HG with a non-blockwise distribution of methyl esters is also an abundant feature of HG in primary plant cell walls. A partially methyl-esterified epitope of HG that is generated in greatest abundance by non-blockwise de-esterification is spatially regulated within the cell wall matrix and occurs at points of cell separation at intercellular spaces in parenchymatous tissues of pea and other angiosperms. Analysis of the properties of calcium-mediated gels formed from pectins containing HG domains with differing degrees and patterns of methyl-esterification indicated that HG with a non-blockwise pattern of methyl ester group distribution is likely to contribute distinct mechanical and porosity properties to the cell wall matrix. This has important implications for our understanding of both the action of pectin methyl esterases on matrix properties and mechanisms of intercellular adhesion and its loss in plants.

Molecular weight:

Ic50:

Applications

Application: IF, ELISA
Application notes:

Handling

Format: Liquid
Concentration:
Passage number:
Growth medium:
Temperature:
Atmosphere:
Volume:
Storage medium:
Storage buffer:
Storage conditions:
Shipping conditions: Shipping at 4° C

Related tools

Related tools:

References

References: Verhertbruggen et al. 2009. Carbohydr Res. 344(14):1858-62. PMID: 19144326.