

Arabinogalactan proteins are involved in root hair development in barley

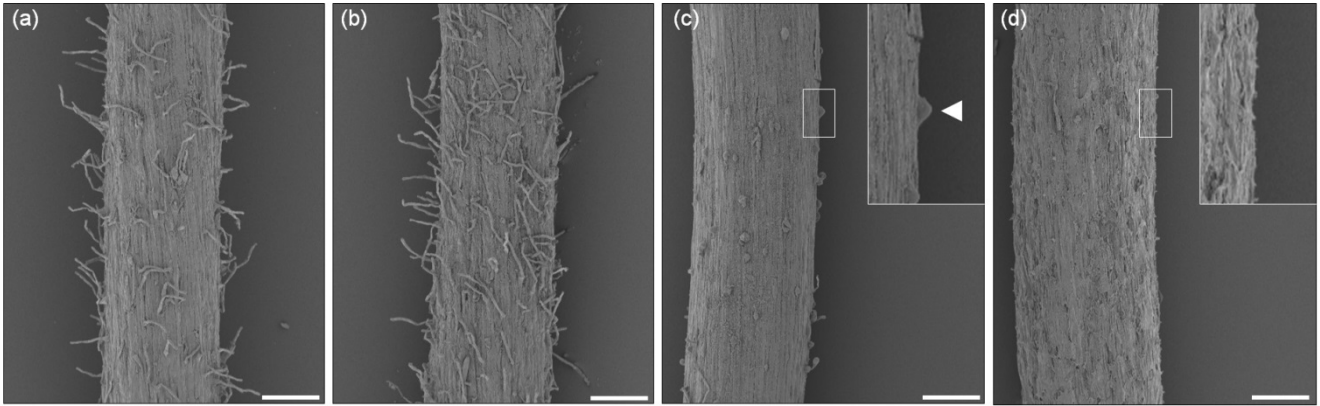
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SUPPLEMENTARY DATA

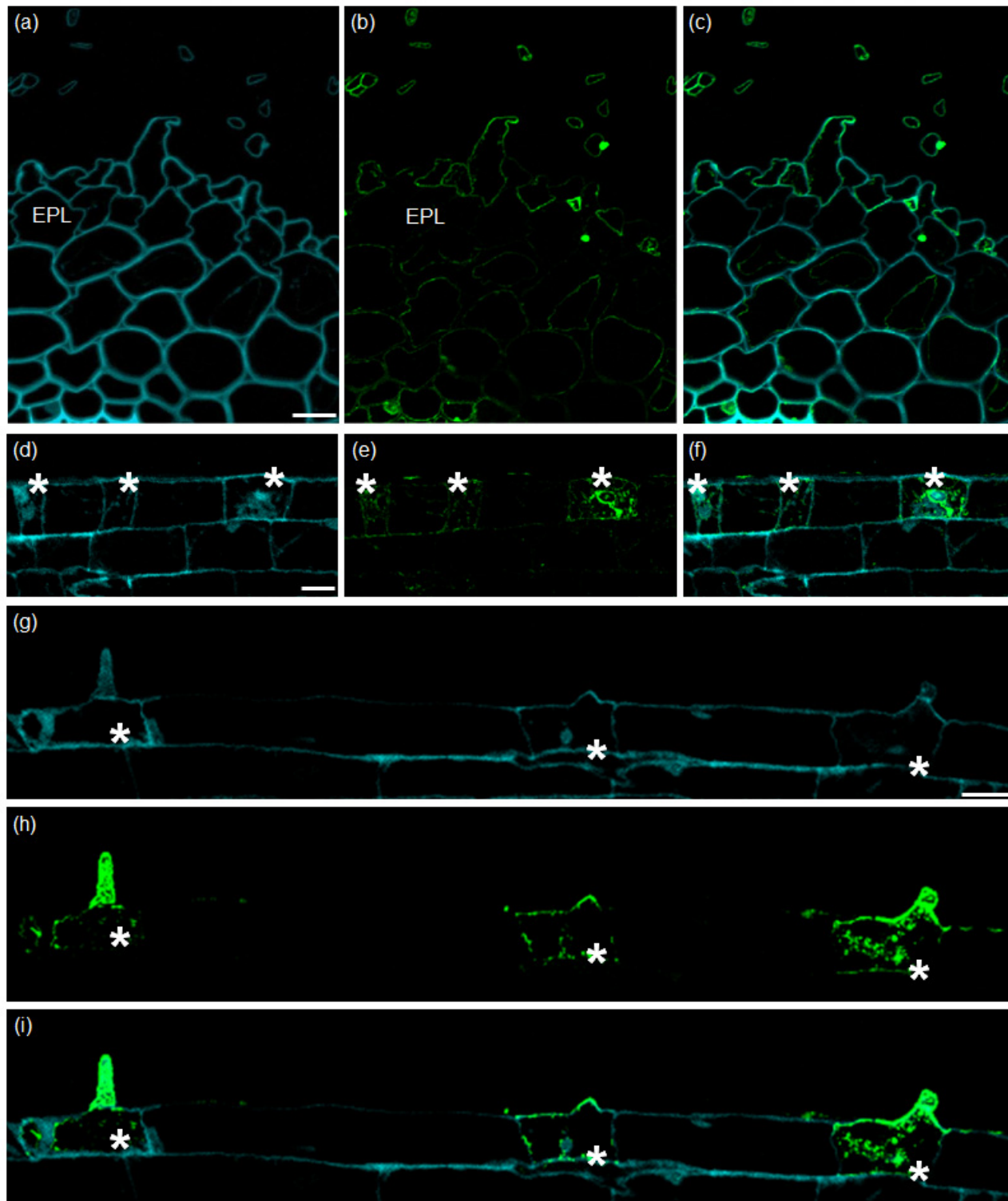
Supplementary Table S1. The effect of β GlcY treatment on root hair tube elongation in barley cvs ‘Dema’, ‘Diva’ and ‘Optic’.

	‘Dema’	‘Diva’	‘Optic’
H₂O	409.1 μ m (\pm 41.6)	386.1 μ m (\pm 39.4)	356.7 μ m (\pm 38.2)
αGlcY (25 μM)	389.8 μ m (\pm 48.1)	396.4 μ m (\pm 45.1)	379.3 μ m (\pm 45.7)
βGluY (1 μM)	378.6 μ m (\pm 50.5)	376.5 μ m (\pm 40.9)	374.1 μ m (\pm 48.6)
βGluY (10 μM)	<u>29.1 μm (\pm12.8)</u>	<u>42.8 μm (\pm16.6)</u>	<u>27.1 μm (\pm13.9)</u>
βGluY (25 μM)	-	-	-

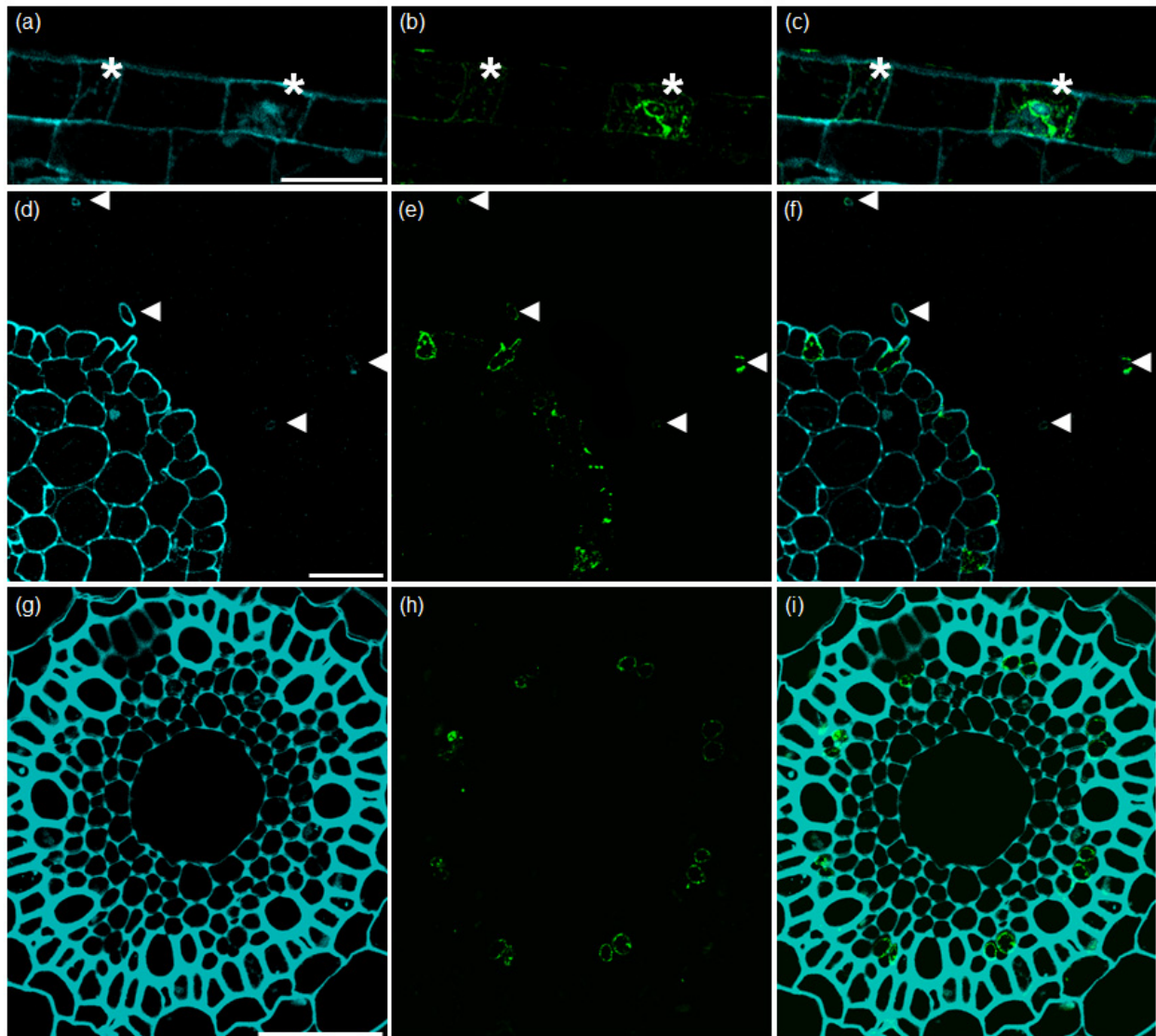
Mean root hair lengths were based on at least 1,000 root hairs measured from 15 roots in 3 biological repeats. Underlined mean values in table indicate the statistical significance, in comparison to control conditions (Student's *t* test ($P < 0.05$)).



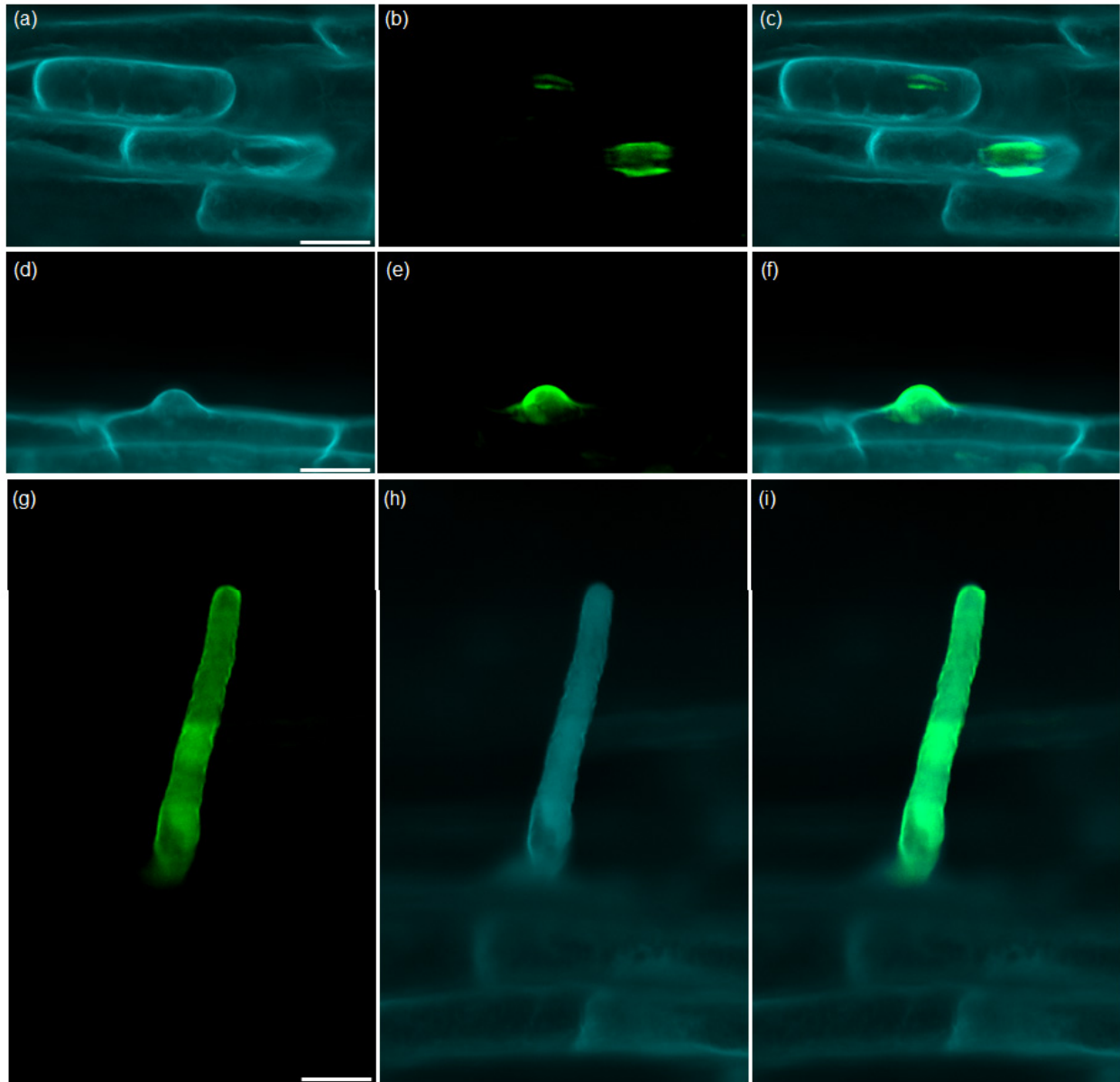
Supplementary Figure S1. SEM analysis of BGlcY-induced inhibition of root hair elongation in cv. 'Dema' plant exposed to (a) 25 μM αGalY , (b) 1 μM βGlcY , (c) 10 μM βGlcY , and (d) 25 μM βGlcY . Arrowhead indicates primordium. Scale bar 200 μm .



Supplementary Figure S2. CLSM analysis of LM2 epitope deposition (marked in green) in the cv. 'Karat' root. (a-c) Transverse section of the mature root hair zone, (d-f) longitudinal section of the differentiation zone, and (h,i) nascent root hairs. Asterisks indicate trichoblasts. EPL: external parenchyma layer. Scale bar 20 μm



Supplementary Figure S3. Localization of MAC207 epitopes in cv. ‘Karat’ roots, as visualized by CLSM. (a-c) A longitudinal section of the differentiation zone revealed a concentration of epitopes in the trichoblasts, while (d-f) a transverse section showed their presence in root hair cells and tubes, and (g-i) in phloem sieve elements. Asterisks indicate trichoblasts, and arrowheads root hair tubes. Scale bar 50 μ m.



Supplementary Figure S4. LM2 epitopes on the cv. 'Dema' root surface as visualized by CLSM. Epitopes present (a-c) in the root hair extracellular matrix at an early stage of root hair differentiation, (d-f) in the developed primordium, and (g-i) in the root hair tubes. Scale bar 20 μm .