

Supplementary Material

Anatomical and biochemical characterisation of a barrier to radial O₂ loss in adventitious roots of two contrasting *Hordeum marinum* accessions

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Table S1. Mean diameters of younger zone (5–45 mm from the apex) and older zone (45–85 mm from root apex) of adventitious roots of the two *Hordeum marinum* accessions – H21 and H90 grown in either aerated or stagnant deoxygenated nutrient solutions for 14 to 17 d

Diameters were measured from cross-sections using Image J software (Ver. 1.39u; NIH, Bethesda, MD, USA). There were no significant differences between zones, accessions and treatments (Tukey’s multiple comparison test). Data are means \pm s.e. ($n = 3$ roots)

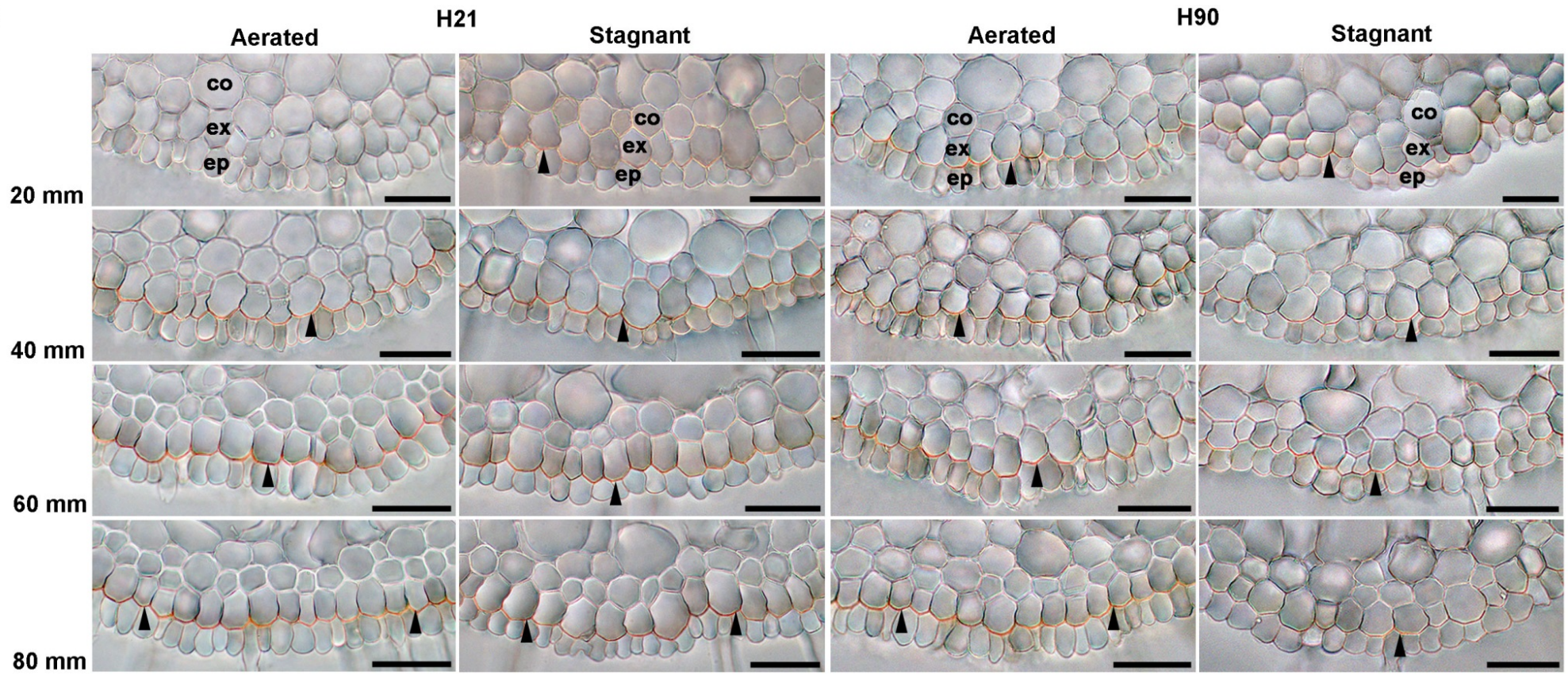
Accession	Root diameter (μm)			
	Aerated		Stagnant	
	Younger zone	Older zone	Younger zone	Older zone
H21	584 \pm 24	589 \pm 21	627 \pm 27	650 \pm 36
H90	571 \pm 10	599 \pm 22	604 \pm 14	614 \pm 27

Table S2. Mean stele diameters in younger zone (5–45 mm from the apex) and older zone (45–85 mm from root apex) of adventitious roots of the two *Hordeum marinum* accessions – H21 and H90 grown in either aerated or stagnant deoxygenated nutrient solutions for 14 to 17 d

Diameters were measured from cross-sections using Image J software (Ver. 1.39u; NIH, Bethesda, MD, USA). There were no significant differences between zones, accessions and treatments (Tukey's multiple comparison test). Data are means \pm s.e. ($n = 3$ roots)

Accession	Stele diameter (μm)			
	Aerated		Stagnant	
	Younger zone	Older zone	Younger zone	Older zone
H21	179 \pm 11	194 \pm 14	166 \pm 11	172 \pm 12
H90	148 \pm 2	173 \pm 12	140 \pm 3	162 \pm 10

(a)



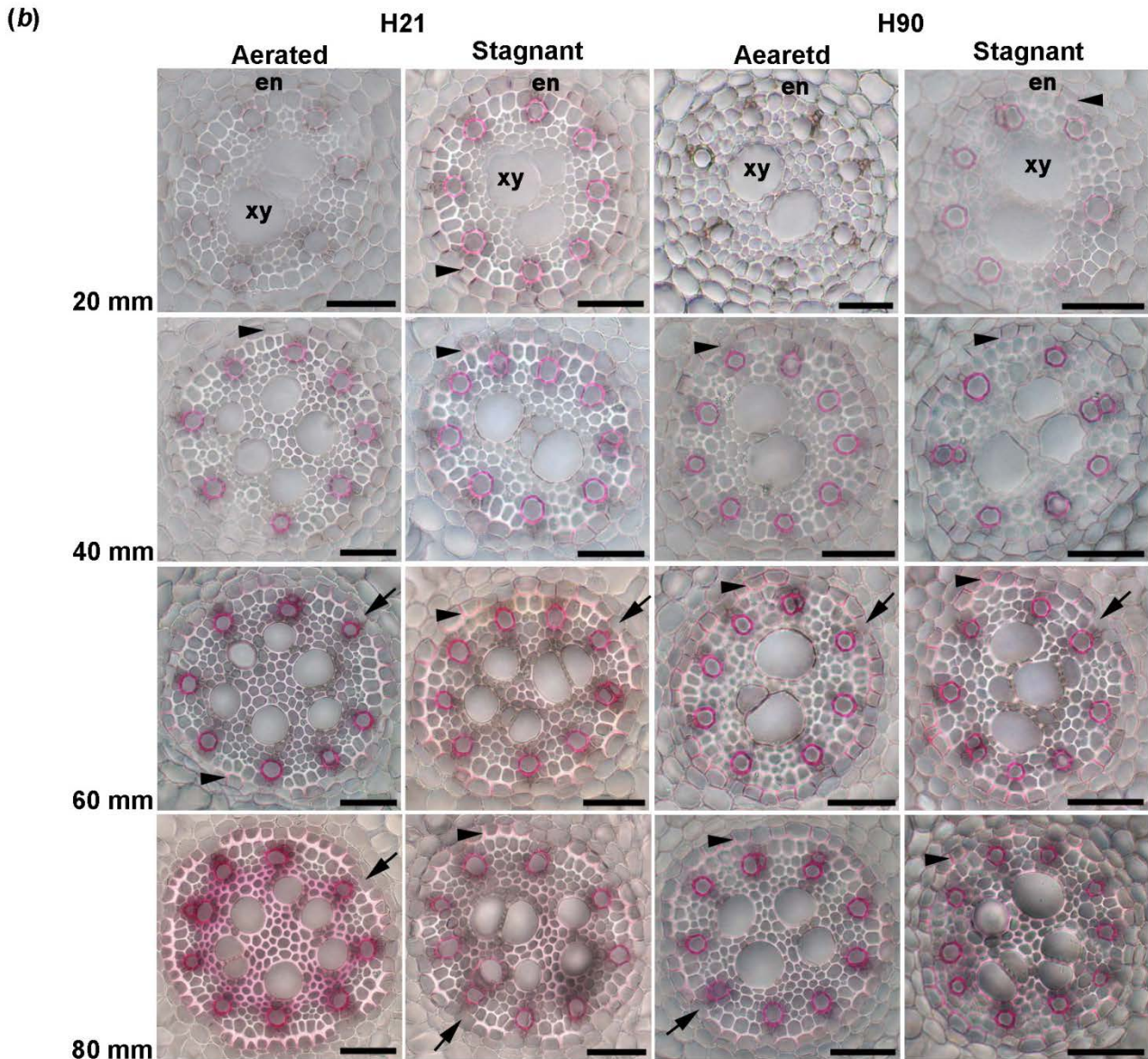


Fig. S1. Development of lignin in (a) exodermis and (b) endodermis of adventitious roots of two *Hordeum marinum* accessions – H21 and H90 grown in either aerated or stagnant deoxygenated nutrient solutions for 14 to 17 d. Cross sections were made at 20, 40, 60 and 80 mm from the apex of 90 to 120 mm long roots, stained with Phloroglucinol and viewed under white light. The presence of lignin was detected by orange/red staining (see arrowheads). Black arrows indicate passage cells. co, cortical cells; ep, epidermis; ex, exodermis; xy, xylem vessels. Bar = 50 μ m.

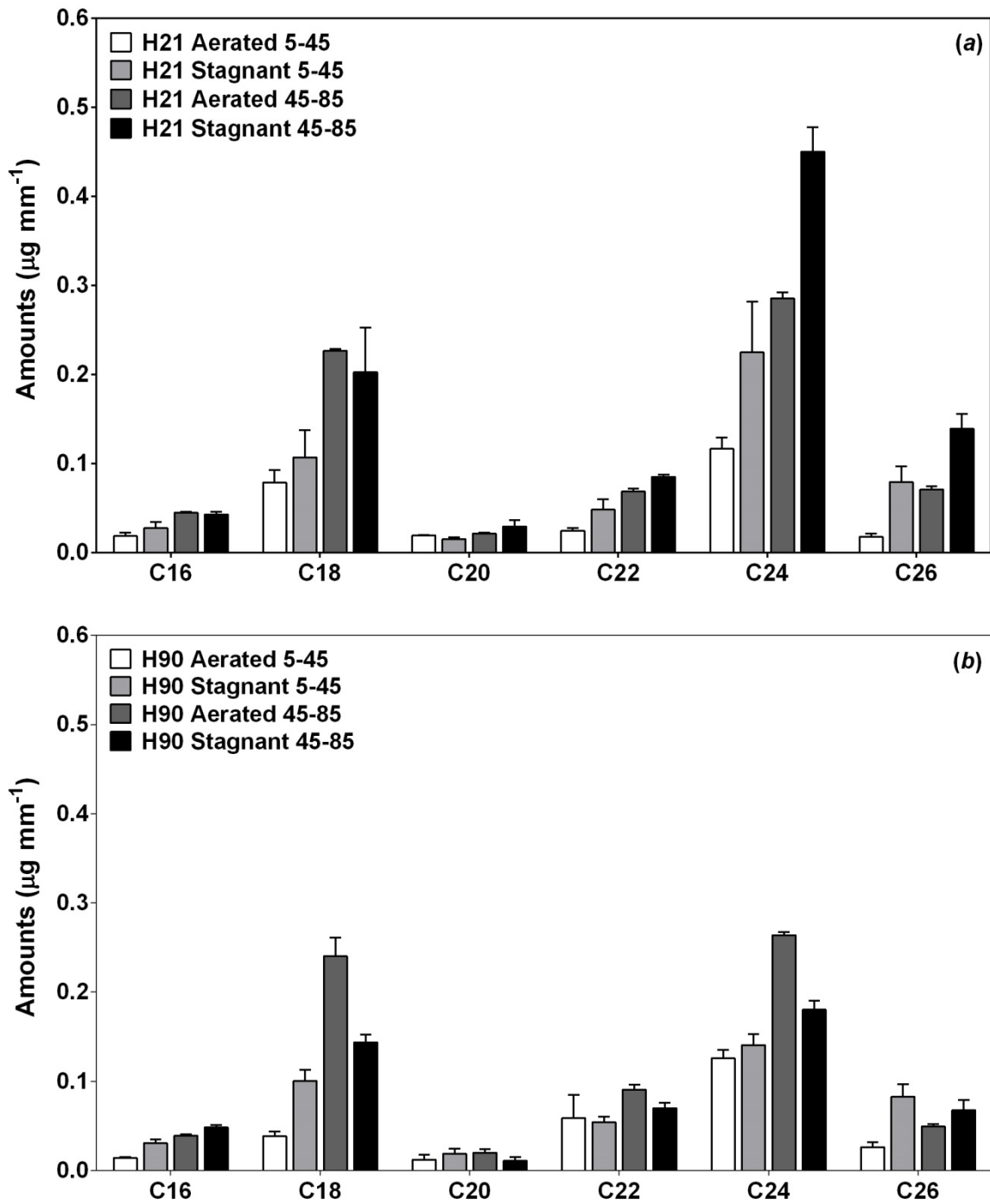


Fig. S2. Chain lengths distribution of aliphatic suberin monomers released from adventitious root segments at 5–45 and 45–85 mm from the apex of two *Hordeum marinum* accessions, (a) H21 and (b) H90 grown in either aerated or stagnant deoxygenated nutrient solutions for 21 to 22 d. Roots (90 to 20 mm in length) from two plants were pooled for one replicate data. Data are means \pm s.e. ($n = 3$ to 4).