SUPPLEMENTAL FIGURE LEGENDS

Figure S1. Multiple alignment of plant AAH candidate proteins with AllC from *E. coli*
Amino acids identical in at least half of the sequences are shaded in black. Similar amino acids are shaded in grey. Predicted signal anchor sequences are underlined. Black triangles indicate amino acids found to be important for binding the metal ions, the cofactor or the substrate in the *E. coli* enzyme. Numberings are according to the native AllC protein sequence (P77425). M1, involved in binding of metal ion 1; M2, involved in binding metal ion 2; SO_4, involved in cofactor binding; al, involved in substrate binding. The dimerisation domain of the *E. coli* enzyme is marked by a dashed line.

Figure S2. Analysis of *At*AAH and *Gm*AAH by native electrophoresis and gel filtration.
A, Native polyacrylamide electrophoresis (10% gel) visualised by Coomassie or silver staining. B, Gel filtration with purified *At*AAH. Upper panel, UV absorption trace, arrows indicate the theoretical elution volumes for mono-, di-, tri-, or tetramer; middle panel, Western blot analysis; lower panel, activity analysis. B, as A but with purified *Gm*AAH.

Figure S3. Characterisation of *Ataln* and *Ataah* mutants by RT-PCR.
A, Upper panel, RT-PCR amplification with primers for *AtAAH* flanking the T-DNA insertion using Col-0 or mutant RNA. Lower panel, control RT-PCR using *Actin2* primers. B, Upper panel, RT-PCR amplification with primers for *AtAln* either flanking (f) or not flanking the T-DNA insertion using Col-0 and mutant RNA. Lower panel, control RT-PCR using *Actin2* primers.

Figure S4. *At*Aln, *At*AAH and *Gm*AAH occasionally locate to Golgi bodies.
C-terminal YFP fusions to *At*Aln (A-C, magenta), *At*AAH (D-F, magenta), *Gm*AAH (G-I, magenta) were transiently coexpressed in tobacco leaf epidermal cells with a marker for the Golgi bodies (ST-CFP in green). Merged images (C, F, I) indicate *At*Aln, *At*AAH and *Gm*AAH reside in the Golgi. Scale bar 5µm.

Figure S5. *At*Aln, *At*AAH and *Gm*AAH occasionally locate to peroxisomes.
C-terminal YFP fusions to *At*Aln (A-C, magenta), *At*AAH (D-F, magenta), *Gm*AAH (G-I, magenta) were transiently coexpressed in tobacco leaf epidermal cells with a marker for peroxisomes (CFP-SKL in green). Merged images (C, F, I) indicate that *At*Aln, *At*AAH and *Gm*AAH reside in peroxisomes. Scale bar 5 µm.