Supplemental data 1. DNA sequence of insert located in *FAD7* in the *pht4;1-*3 mutant line. Letters marked in blue indicate IAAH stop codon and letters in yellow indicate *FAD7* genomic sequence.

GTCAGCATCATCACACCAAAAGTTAGGCCCGAATAGTTTGAAATTAGAAAGCTCGCAATTGAGGTCTACAGGCCAAATTCGCTCTTAGCCGTACAATATTACTCACCGGTGCGATGCCCCCCATCGTAGGTGAAGGTGGAAATTAATGATCCATCTTGaGACCACAGGCCCACAACAGCTACCAGTTTCCTCAAGGGTCCACCAAAAACGTAAGCGCTTACGTACATGGTCGaTAAGAAAAGGCAATTTGTAGATGATcgCCATGGAAACGCCGGAGTAGgtCTTTGCGGCATTCCaCTCTGTTTTAaGGcGAaCATCGCTACCGGCGTATTTCCCaCAAGCGCCGCTACGCCGGCGCTGATAAACCACTTGCCAAAGATACCATCCCGCGTCGCAGAAAGACTTTTTTCAGCTGGAGCACTGCCGGGTGCCTCGGGAAATATGCATGAGTTATCGTTTGGAATTACAAGCAACAACTATGCCACCGGGGCGGTGCGAAACCCGTGGAATCCAGATCTGATACCAGGGGGCTCAAGCGGTGGTGTGGCTGCTGCGGTAGCAAGCCGATTGATGTTAGGCGGCATAGGCACCGATACCGGTGCATCTGTTCGCCTACCCGCAGCCCTGTGTGGCGTAGTAGGATTTCGACCGACGCTTGGTAGATATCCGGGAGATCGGATAATACCGGTTAGCCCTACCCGGGACACTCCCGGAATCATAGCGCAGTGCGTAGCCGATGTTGTAATCCTCGACCGGATAATTTCCGGCACACCGGAGAGAATACCACCCGTGCCGCTGAAGGGGCTAAGGATCGGCCTCCCTACAACCTACTTTTATGATGACCTTGATGCTGATGTGGCCCTAGCAGCTGAAACAACGATTCGCCTGCTAgCAAACAAAGGCGTAACTTTTGTTGAAGCTAACATTCCCCACCTTGACGAACTGAATAAAGGGGCCAGCTTCCCAGTTGCACTCTATGAAtTTCCACACGCTCTAAAAACAGTATCTCGACGACTTTGtAAAAACTGtTTCTTTTTCTGACGTCaTCAAAgGAATTCgtAnCcntGATGTAnCCAACatTtGCCAAtGCGCAAaTtGATGgacATCaaAtTtCCAAngCTGAATATGAACTGGCCCGCCACTCCTTCAGACCAAGACTTCAAGCCACCTATCGCAACTACTTCAAACTGAATAGATTAGATGCTATTCTCTTCCCAACAGCACCCTTGGTGGCCAGACCCATAGGTCAGGATTCCTCAGTTATCCACAATGGCACGATGCTGGACACATTCAAGATCTACGTGCGAAATGTGGACCCAAGCAGCAACGCAGGCCTACCTGGCTTGAGCATTCCTGTTTGCCTGACACCTGATCGCTTGCCTGTTGGAATGGAGATCGATGGATTAGCGGATTCAGACCAACGTCTGTTAGCAATCGGGGGGGCATTGGAAGAAGCCATTGGATTCCGATATTTTGCCGGTTTACCCAATTAAACTTTCTACCATGTTCGTTTTTACAATTTTTCAGATTGATGACAATCAATCCTTGTATTGCGTCTATGAACAACAGTGCCTTATGTTATAAATCGAATAATAACTTGCGATGGAGATTTTGAACAAACTTTAATTTATGATTTAACCAATAAAAGTCTTTGCAATAATCATGTTCGATAAATAATTTTATTATCAGTGATAAACTTTAGATATTTCTTGGAATAGGCATCTTCATATAACAATAATTCTTTTTCGAATTTAAATTATATATCTTAAGCAAATTACATTTTTCCTAAATTATAGGGAAATATAATTAAAGTTCAAGCAATCCTATTTAGGCATAAAGTAGTTAATACAATTTATATAATATATAATTTGCCGTCCACTATCCTTTACAAATTTGTCAAATCTGCATTATGAAATTAATGACTTTTTTGAATTGTCTCGCCGTGTGAGGACAGACGTGAAGGCACCCACCTTTTAATTTGGATGCACCTCTCACCTGCTACAACATCGATACCGTCGATGGGTGGATTTATCACAAATGGGACCCGCCGCCGACAGAGGTGTGATGTTAGGCCAGGACTTTGAAAATTTGCGCAACTATCGTATAGTGGCCGACAAATTGACGCCGAGTTGACAGACTGCCTAGCATTTGAGTGAATTATGTAAGGTAATGGGCTACACTGAATTGGTAGCTCAAACTGTCAGTATTTATGTATATGAGTGTATATTTTCGCATAATCTCAGACCAATCTGAAGATGAAATGGGTATCTGGGAATGGCGAAATCAAGGCATCGATCGTGAAGTTTCTCATCTAAGCCCCCATTTGGACGTGAATGTAGACACGTCGAAATAAAGATTTCCGAATTAGAATAATTTGTTTATTGCTTTCGCCTATAAATACGACGGATCGTAATTTGTcgTTTTATCAAAATGTACTTTCATTTTATAATAACGCTGCGGACATCTACATTTTTGAATTGAAAAAAAaTTGGTAATTACTCTTTCTTTTTCTCCATATTGACCATCATACTCATTGCTGATCCATGTAGATTTCCCGGACATGAAGCCATTTACAATTGAATATATCCTGGTGAAAAGTGAAAAGTCTTATCAGAATGTGGTATACGACCTCTCCCCAGAATCTACACAACACCCAGATCCAATTTCCTCTCCAACAACAACAAATTCAGACCATCACTTTCTTCTTCTTCTTACAAAACATCATCATCTCCTCTGTCTTTTGGTCTGAATTCACGAGATGGGTTCACGAGGAATTGGGCGTTGAATGTGAGCACACCATTAACGACACCAATATTTGAGGAGTCTCCATTGGAGGAAGATAAT

Genomic sequence of *FAD7* from wild type Col-0 (TAIR12, www.arabidopsis.org). Start and stop codon are highlighted in blue. Capital letters indicate exon and lower case letters indicate introns. Yellow letters indicate sequence identified in the pht4;1-3 mutant (see sequence above).

ATGGCGAACTTGGTCTTATCAGAATGTGGTATACGACCTCTCCCCAGAATCTACACAACACCCAGATCCAATTTCCTCTCCAACAACAACAAATTCAGACCATCACTTTCTTCTTCTTCTTACAAAACATCATCATCTCCTCTGTCTTTTGGTCTGAATTCACGAGATGGGTTCACGAGGAATTGGGCGTTGAATGTGAGCACACCATTAACGACACCAATATTTGAGGAGTCTCCATTGGAGGAAGATAATAAACAGAGATTCGATCCAGGTGCGCCTCCTCCGTTCAATTTAGCTGATATTAGAGCAGCTATACCTAAGCATTGTTGGGTTAAGAATCCATGGAAGTCTTTGAGTTATGTCGTCAGAGACGTCGCTATCGTCTTTGCATTGGCTGCTGGAGCTGCTTACCTCAACAATTGGATTGTTTGGCCTCTCTATTGGCTCGCTCAAGGAACCATGTTTTGGGCTCTCTTTGTTCTTGGTCATGACTGgtaaacttaaaaaccctaacttttttcttgttttctcctctgctttagtctcctttagcctttgatttggtcaactttggatgattccaaagaaccaatcgaacaaattggtctttatccatatctcttcaaatagctttaggacataattggtctctcaggtaacaagctgtcattatcatcatactcatcatgttgctagtagaccaacccaattggcaactgtttgttggttttgcaactgtgtaatctgctttgaattgtgaacaaaattattgatttatgttgattacattgcagTGGACATGGTAGTTTCTCAAATGATCCGAAGTTGAACAGTGTGGTCGGTCATCTTCTTCATTCCTCAATTCTGGTCCCATACCATGGCTGgtgagttttgctttcagaccattcttctctaaaaccacttgcagaatctcatcttcttcatgtaaaaatatgactttgcagGAGAATTAGTCACAGAACTCACCACCAGAACCATGGACATGTTGAGAATGACGAATCTTGGCATCCTgtaagtcaaaaacgtatttttttggttatcttgttttagtcctgtggtgtttcttagatgcagttttattaactgtttctgtaactgcagATGTCTGAGAAAATCTACAATACTTTGGACAAGCCGACTAGATTCTTTAGATTTACACTGCCTCTCGTGATGCTTGCATACCCTTTCTACTTGgtaagaactcctctatttgttatggtaacttaagctgccacaccaagtaaaaaagctcatgtctattcttctgtttcagTGGGCTCGAAGTCCGGGGAAAAAGGGTTCTCATTACCATCCAGACAGTGACTTGTTCCTCCCTAAAGAGAGAAAGGATGTCCTCACTTCTACTGCTTGTTGGACTGCAATGGCTGCTCTGCTTGTTTGTCTCAACTTCACAATCGGTCCAATTCAAATGCTCAAACTTTATGGAATTCCTTACTGGgtaatgcgccgctgttactcccctgtttcagcctgagcaatttgtgtattatttcctctgccttactcaaaaaggtttttatgtcaaatacagATAAATGTAATGTGGTTGGACTTTGTGACTTACCTGCATCACCATGGTCATGAAGATAAGCTTCCTTGGTACCGTGGCAAGgtaaaatacatattctctgcttccactgttctttgactacatcgctctttcttttaaggttaaagccaactggtgtgtaaatctcatgattctcccaaaacagGAGTGGAGTTACCTGAGAGGAGGACTTACAACATTGGATCGTGACTACGGATTGATCAATAACATCCATCATGATATTGGAACTCATGTGATACATCATCTTTTCCCGCAGATCCCACATTATCATCTAGTAGAAGCAgtaagtaaattgaaagtaaagactgtttgtgtttttggtgttcatgctagtttccctgactcttgctccactgttatgcagACAGAAGCAGCTAAACCAGTATTAGGGAAGTATTACAGGGAGCCTGATAAGTCTGGACCGTTGCCATTACATTTACTGGAAATTCTAGCGAAAAGTATAAAAGAAGATCATTACGTGAGCGACGAAGGAGAAGTTGTATACTATAAAGCAGATCCAAATCTCTATGGAGAGGTCAAAGTAAGAGCAGATTGA