Auxin maintains root SCN identity through MPK3/MPK6-mediated WOX5 homeostasis in QC

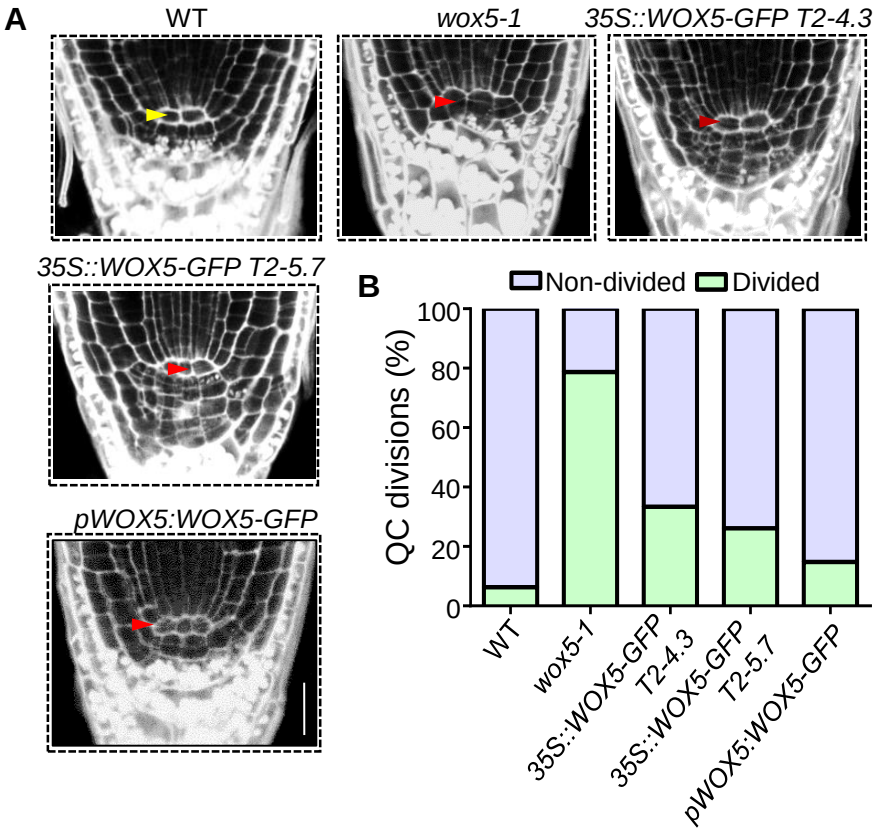


Figure 1. QC identity requires WOX5 homeostasis

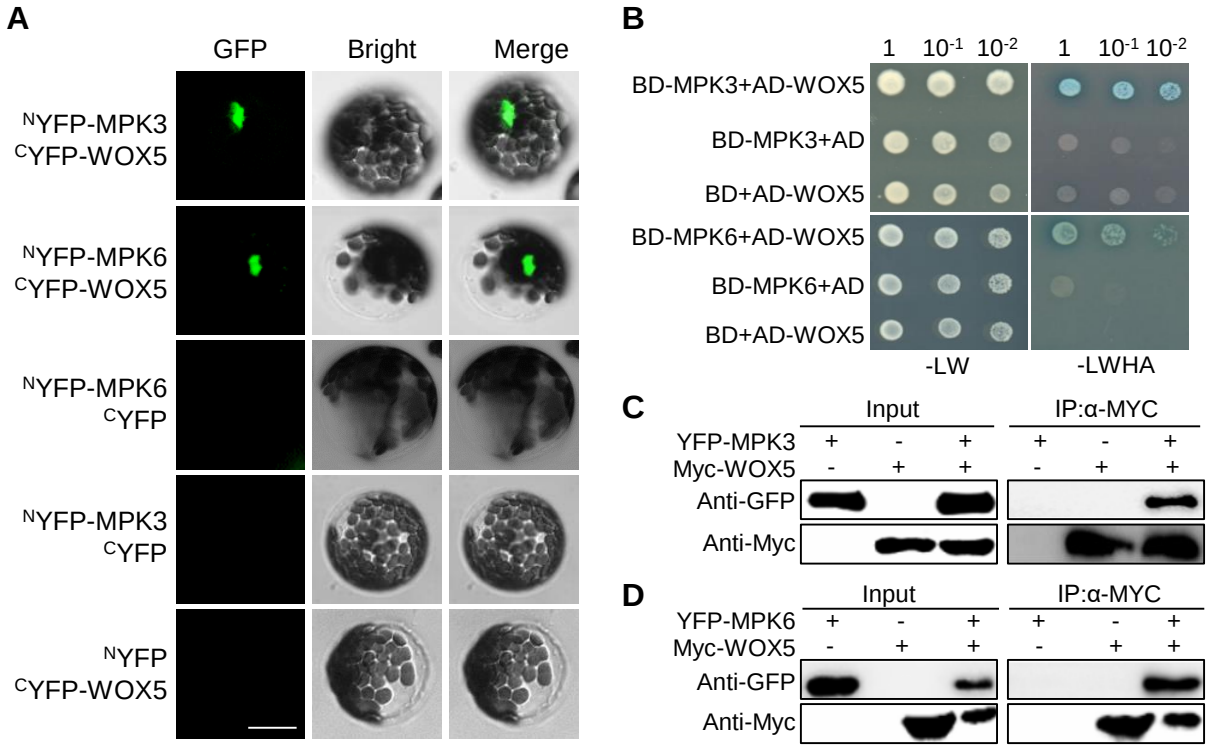


Figure 2. MPK3/MPK6 interact with WOX5

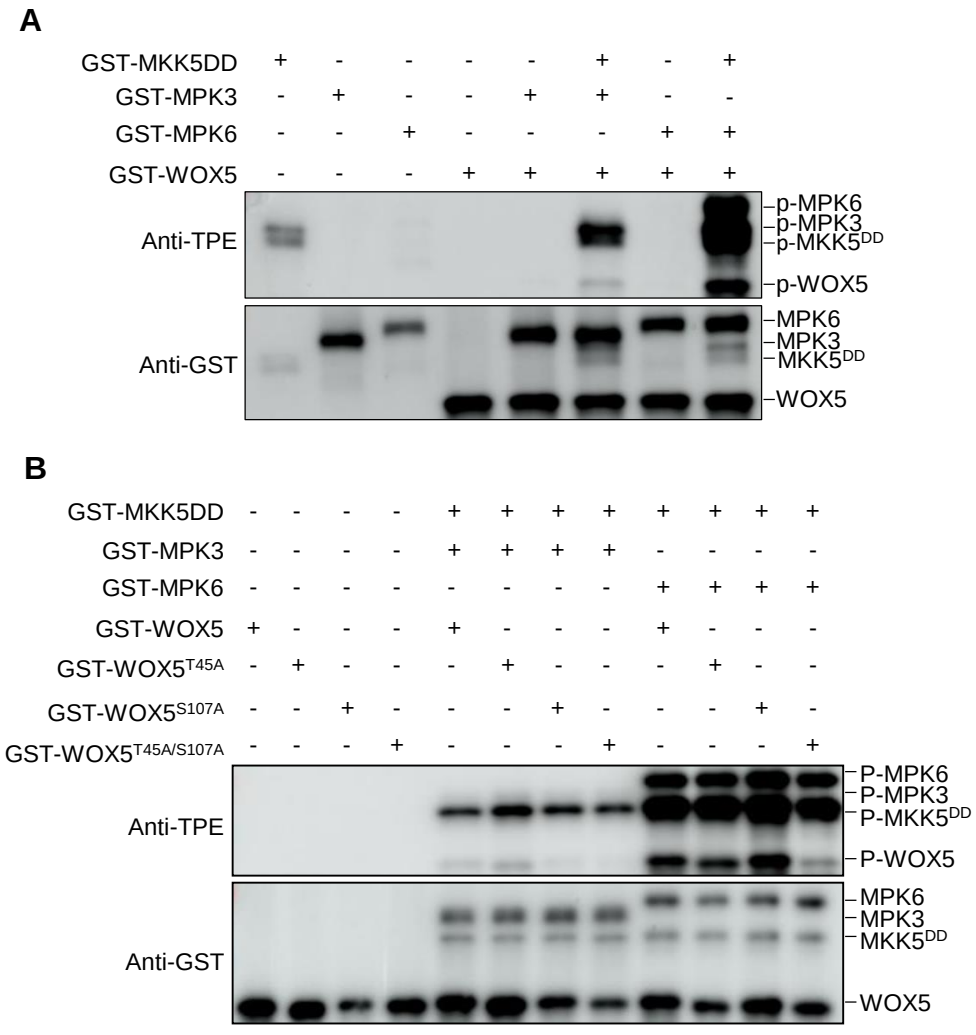


Figure 3. MPK3/MPK6 phosphorylate WOX5

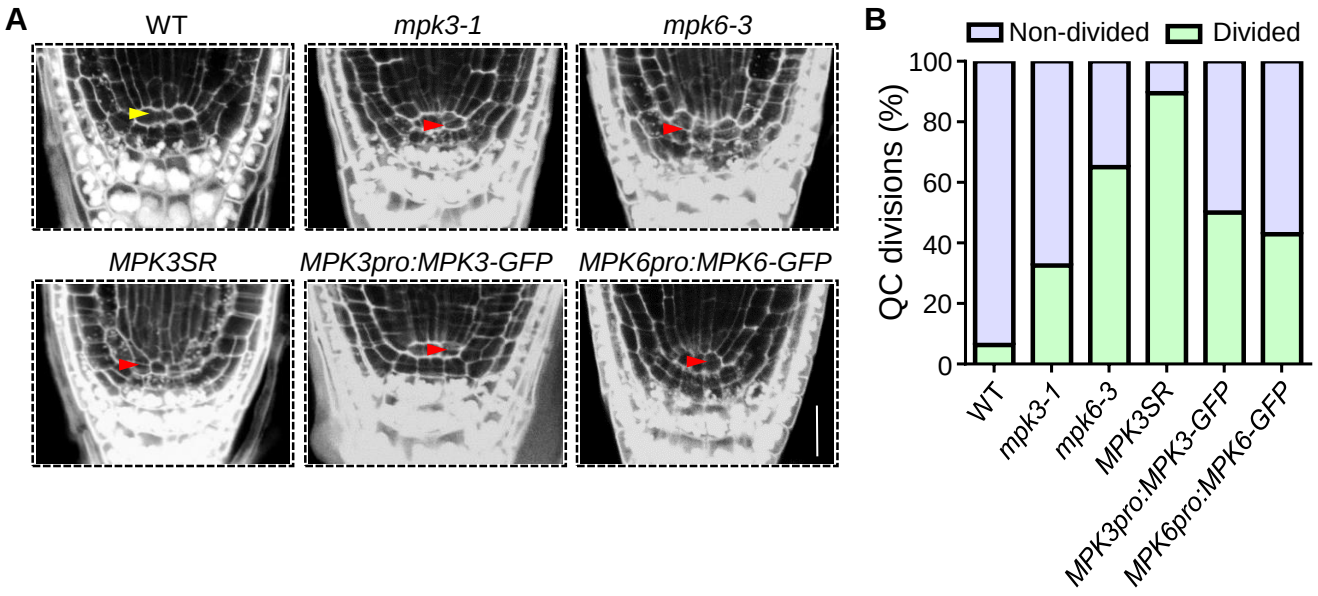


Figure 4. MPK3/MPK6 homeostasis is required for root QC maintenance

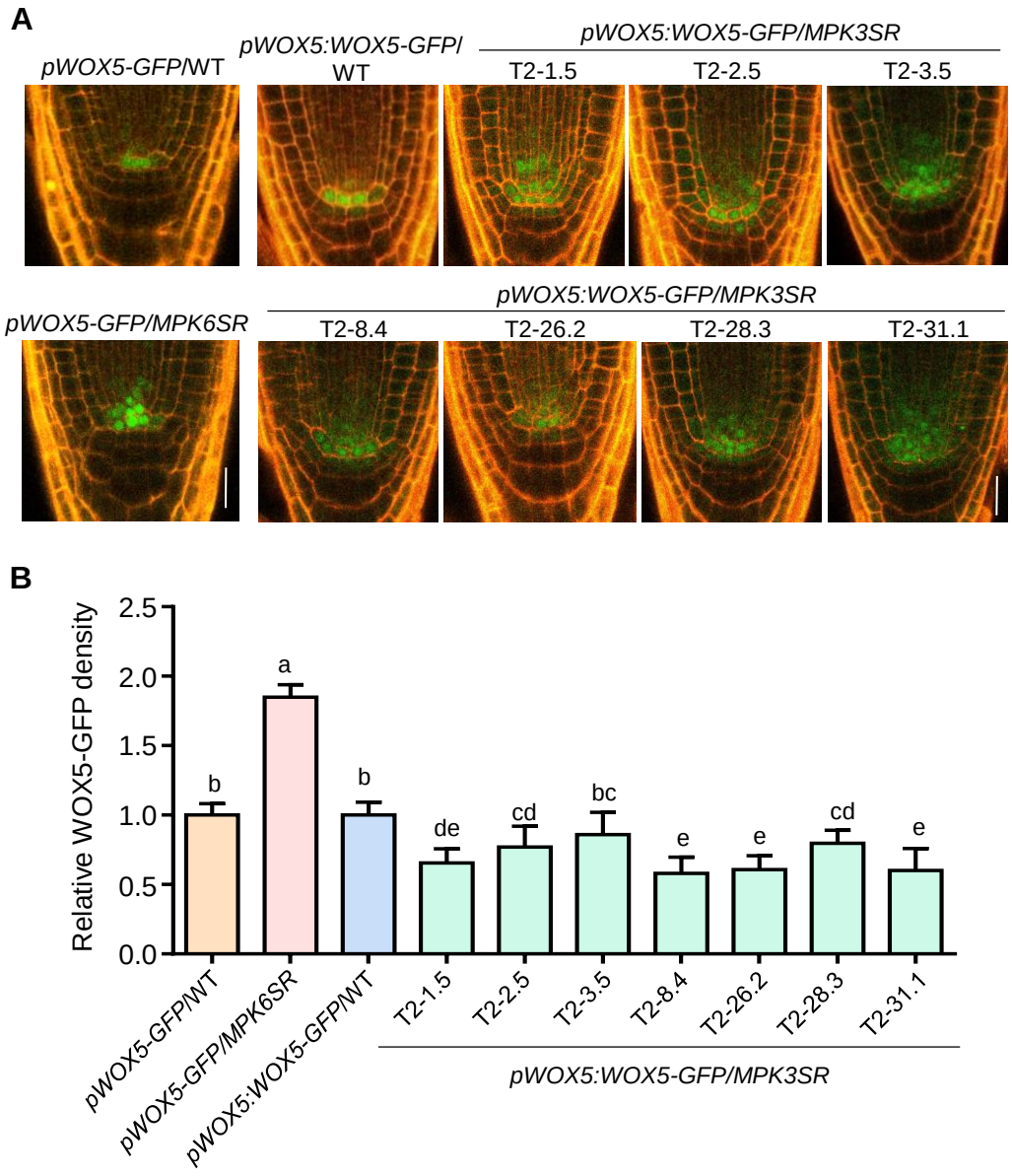


Figure 5. MPK3/MPK6 maintain WOX5 homeostasis by regulating WOX5 transcription and protein levels

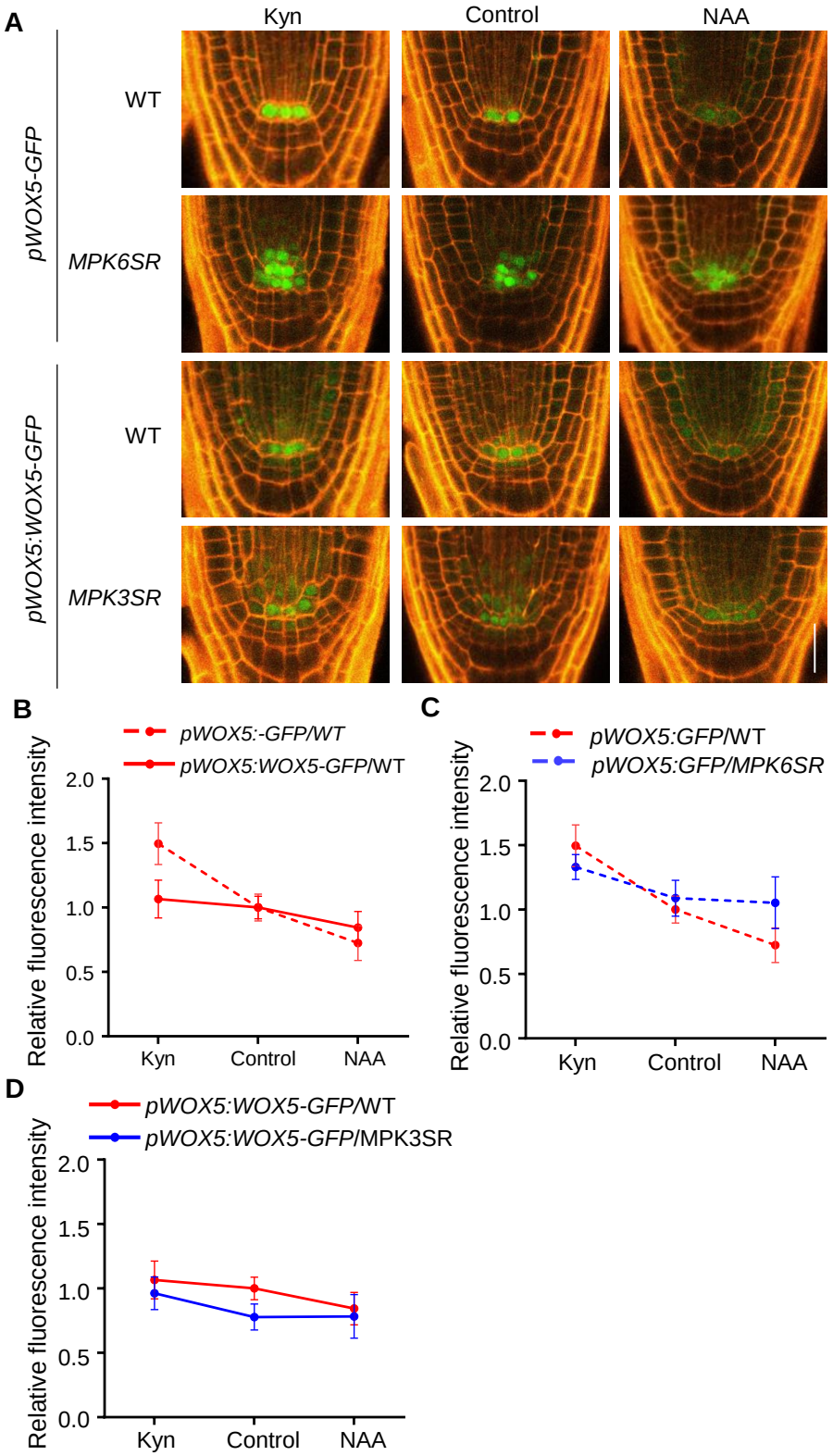


Figure 6. Auxin maintains WOX5 homeostasis at transcription and protein levels through MPK3/MPK6 in QC

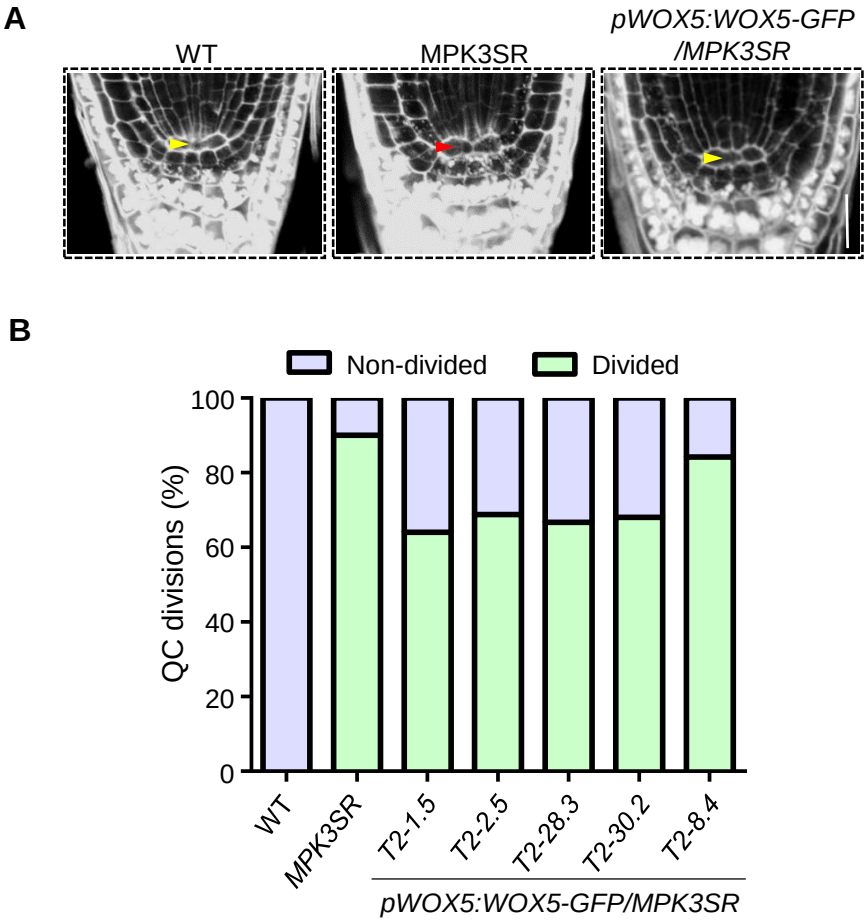


Figure 7. MPK3/MPK6 maintain QC homeostasis through WOX5

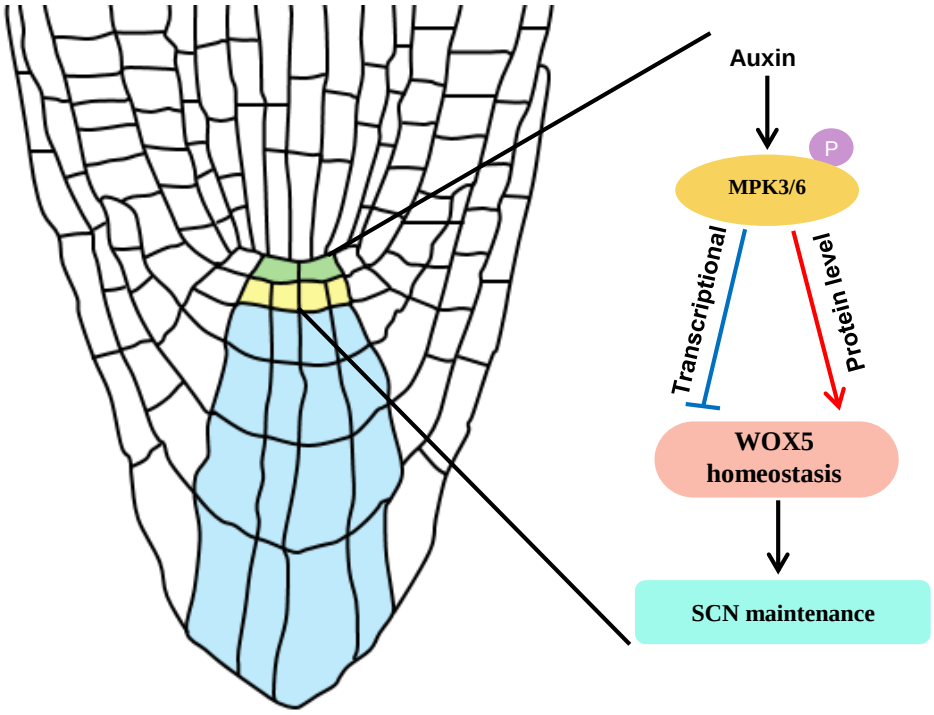
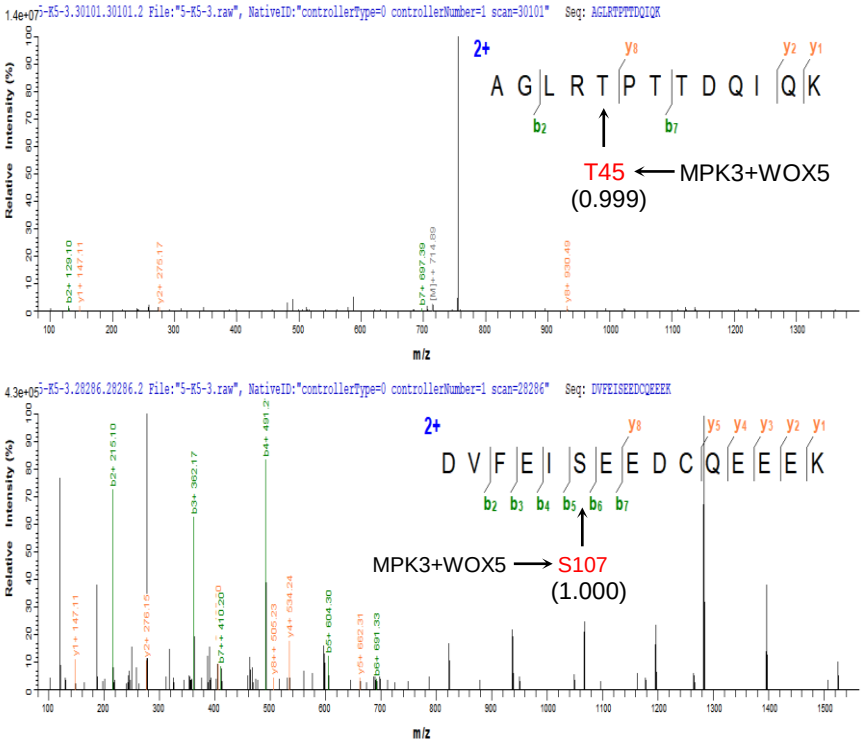


Figure 8. Auxin maintains root SCN identity through MPK3/MPK6-mediated WOX5 homeostasis in QC

A



B

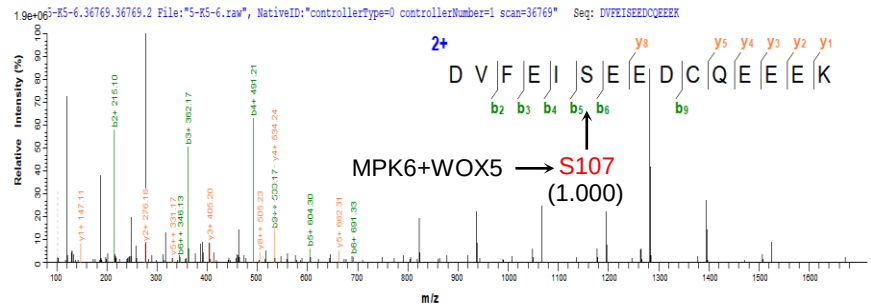


Figure S1. Mass spectrometry analysis of MPK3/MPK6 phosphorylation site on WOX5

The DNA sequence of WOX5

ATGTCTTTCTCCGTGAAAGGTCGAAGCTTACGTGGCAACAATAACGGAGGAACGGGGACGAAGTGCGGGAGATGGAATCCAAC

GGTGGAGCAGTTGAAGATATTGACTGATCTGTTTCGAGCCGGTCTTAGA**T45**ACTCCAACAACTGATCAGATTCAGAAGATCTCTACG

GAGCTCAGTTTCTACGGCAAGATAGAGAGCAAGAATGTTTTCTATTGGTTTCAGAATCATAAGGCTAGGGAGAGGCAGAAACGTC

GTAAAATCTCCATTGATTTTGATCATCATCATCATCAACCATCAACTAGAGATGTTTTTGAAATA**S107**AGCGAAGAAGATTGTCAAGAGG

AAGAGAAGGTGATAGAGACATTACAACTCTTTCCGGTGAATTCATTTGAAGACTCCAACTCCAAGGTGGACAAAATGAGAGCTAG

AGGCAATAACCAGTACCGTGAATATATTCGAGAGACCACCACGACGTCGTTTTCTCCATACTCATCATGTGGAGCTGAAATGGAAC

ATCCACCGCCATTAGATCTTCGATTAAGCTTTCTTTAA

The WOX5 sequence of WOX5^{T45A}, the mutation of T45A was accompanied

ATGTCTTTCTCCGTGAAAGGTCGAAGCTTACGTGGCAACAATAACGGAGGAACGGGGACGAAGTGCGGGAGATGGAATCCAAC

GGTGGAGCAGTTGAAGATATTGACTGATCTGTTTCGAGCCGGTCTTAGA**T45A**GCTCCAACAACTGATCAGATTCAGAAGATCTCTACG

GAGCTCAGTTTCTACGGCAAGATAGAGAGCAAGAATGTTTTCTATTGGTTTCAGAATCATAAGGCTAGGGAGAGGCAGAAACGTC

GTAAAATCTCCATTGATTTTGATCATCATCATCATCAACCATCAACTAGAGATGTTTTTGAAATAAGCGAAGAAGATTGTCAAGAGG

AAGAGAAGGTGATAGAGACATTACAACTCTTTCCGGTGAATTCATTTGAAGACTCCAACTCCAAGGTGGACAAAATGAGAGCTAG

AGGCAATAACCAGTACCGTGAATATATTCGAGAGACCACCACGACGTCGTTTTCTCCATACTCATCATGTGGAGCTGAAATGGAAC

ATCCACCGCCATTAGATCTTCGATTAAGCTTTCTTTAA

The WOX5 sequence of WOX5^{S107A}, the mutation of S107A was accompanied

ATGTCTTTCTCCGTGAAAGGTCGAAGCTTACGTGGCAACAATAACGGAGGAACGGGGACGAAGTGCGGGAGATGGAATCCAAC

GGTGGAGCAGTTGAAGATATTGACTGATCTGTTTCGAGCCGGTCTTAGAACTCCAACAACTGATCAGATTCAGAAGATCTCTACG

GAGCTCAGTTTCTACGGCAAGATAGAGAGCAAGAATGTTTTCTATTGGTTTCAGAATCATAAGGCTAGGGAGAGGCAGAAACGTC

GTAAAATCTCCATTGATTTTGATCATCATCATCATCAACCATCAACTAGAGATGTTTTTGAAATA**S107A**GCCGAAGAAGATTGTCAAGAGG

AAGAGAAGGTGATAGAGACATTACAACTCTTTCCGGTGAATTCATTTGAAGACTCCAACTCCAAGGTGGACAAAATGAGAGCTAG

AGGCAATAACCAGTACCGTGAATATATTCGAGAGACCACCACGACGTCGTTTTCTCCATACTCATCATGTGGAGCTGAAATGGAAC

ATCCACCGCCATTAGATCTTCGATTAAGCTTTCTTTAA

The WOX5 sequence of WOX5$^{T45A/S107A}$, the mutation of T45A and S107A were accompanied

ATGTCTTTCTCCGTGAAAGGTCGAAGCTTACGTGGCAACAATAACGGAGGAACGGGGACGAAGTGCGGGAGATGGAATCCAAC

GGTGGAGCAGTTGAAGATATTGACTGATCTGTTTCGAGCCGGTCTTAGA**T45A**GCTCCAACAACTGATCAGATTCAGAAGATCTCTACG

GAGCTCAGTTTCTACGGCAAGATAGAGAGCAAGAATGTTTTCTATTGGTTTCAGAATCATAAGGCTAGGGAGAGGCAGAAACGTC

GTAAAATCTCCATTGATTTTGATCATCATCATCATCAACCATCAACTAGAGATGTTTTTGAAATA**S107A**GCCGAAGAAGATTGTCAAGAGG

AAGAGAAGGTGATAGAGACATTACAACTCTTTCCGGTGAATTCATTTGAAGACTCCAACTCCAAGGTGGACAAAATGAGAGCTAG

AGGCAATAACCAGTACCGTGAATATATTCGAGAGACCACCACGACGTCGTTTTCTCCATACTCATCATGTGGAGCTGAAATGGAAC

ATCCACCGCCATTAGATCTTCGATTAAGCTTTCTTTAA

Figure S2. The information on sequence changes in WOX5^{T45A}, WOX5^{S107A}, and WOX5$^{T45A/S107A}$ compared to the WT version of WOX5

The DNA sequence of WOX5

ATGTCTTTCTCCGTGAAAGGTCGAAGCTTACGTGGCAACAATAACGGAGGAACGGGGACGAAGTGCGGGAGATGGAATCCAAC

GGTGGAGCAGTTGAAGATATTGACTGATCTGTTTCGAGCCGGTCTTAGA**T45**ACTCCAACAACTGATCAGATTCAGAAGATCTCTACG

GAGCTCAGTTTCTACGGCAAGATAGAGAGCAAGAATGTTTTCTATTGGTTTCAGAATCATAAGGCTAGGGAGAGGCAGAAACGTC

GTAAAATCTCCATTGATTTTGATCATCATCATCATCAACCATCAACTAGAGATGTTTTTGAAATA**S107**AGCGAAGAAGATTGTCAAGAGG

AAGAGAAGGTGATAGAGACATTACAACTCTTTCCGGTGAATTCATTTGAAGACTCCAACTCCAAGGTGGACAAAATGAGAGCTAG

AGGCAATAACCAGTACCGTGAATATATTCGAGAGACCACCACGACGTCGTTTTCTCCATACTCATCATGTGGAGCTGAAATGGAAC

ATCCACCGCCATTAGATCTTCGATTAAGCTTTCTTTAA

The WOX5 sequence of WOX5^{2D}, the mutation of T45D and S107D were accompanied

ATGTCTTTCTCCGTGAAAGGTCGAAGCTTACGTGGCAACAATAACGGAGGAACGGGGACGAAGTGCGGGAGATGGAATCCAAC

GGTGGAGCAGTTGAAGATATTGACTGATCTGTTTCGAGCCGGTCTTAGA**T45D**GATCCAACAACTGATCAGATTCAGAAGATCTCTACG

GAGCTCAGTTTCTACGGCAAGATAGAGAGCAAGAATGTTTTCTATTGGTTTCAGAATCATAAGGCTAGGGAGAGGCAGAAACGTC

GTAAAATCTCCATTGATTTTGATCATCATCATCATCAACCATCAACTAGAGATGTTTTTGAAATA**S107D**GACGAAGAAGATTGTCAAGAGG

AAGAGAAGGTGATAGAGACATTACAACTCTTTCCGGTGAATTCATTTGAAGACTCCAACTCCAAGGTGGACAAAATGAGAGCTAG

AGGCAATAACCAGTACCGTGAATATATTCGAGAGACCACCACGACGTCGTTTTCTCCATACTCATCATGTGGAGCTGAAATGGAAC

ATCCACCGCCATTAGATCTTCGATTAAGCTTTCTTTAA

Figure S3. The information on sequence changes of WOX5$^{T45D/S107D}$ compared to the WT version of WOX5

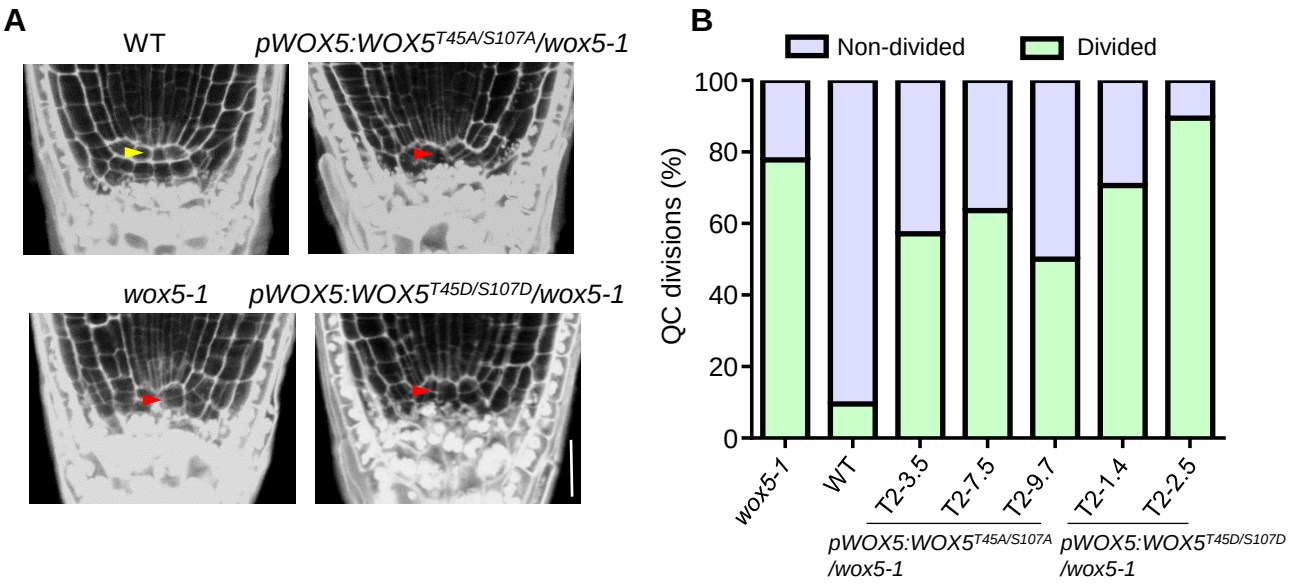


Figure S4. Phenotypic analysis of QC in roots of *pWOX5:WOX5$^{T45A/S107A}$/wox5-1* and *pWOX5:WOX5$^{T45D/S107D}$/wox5-1*

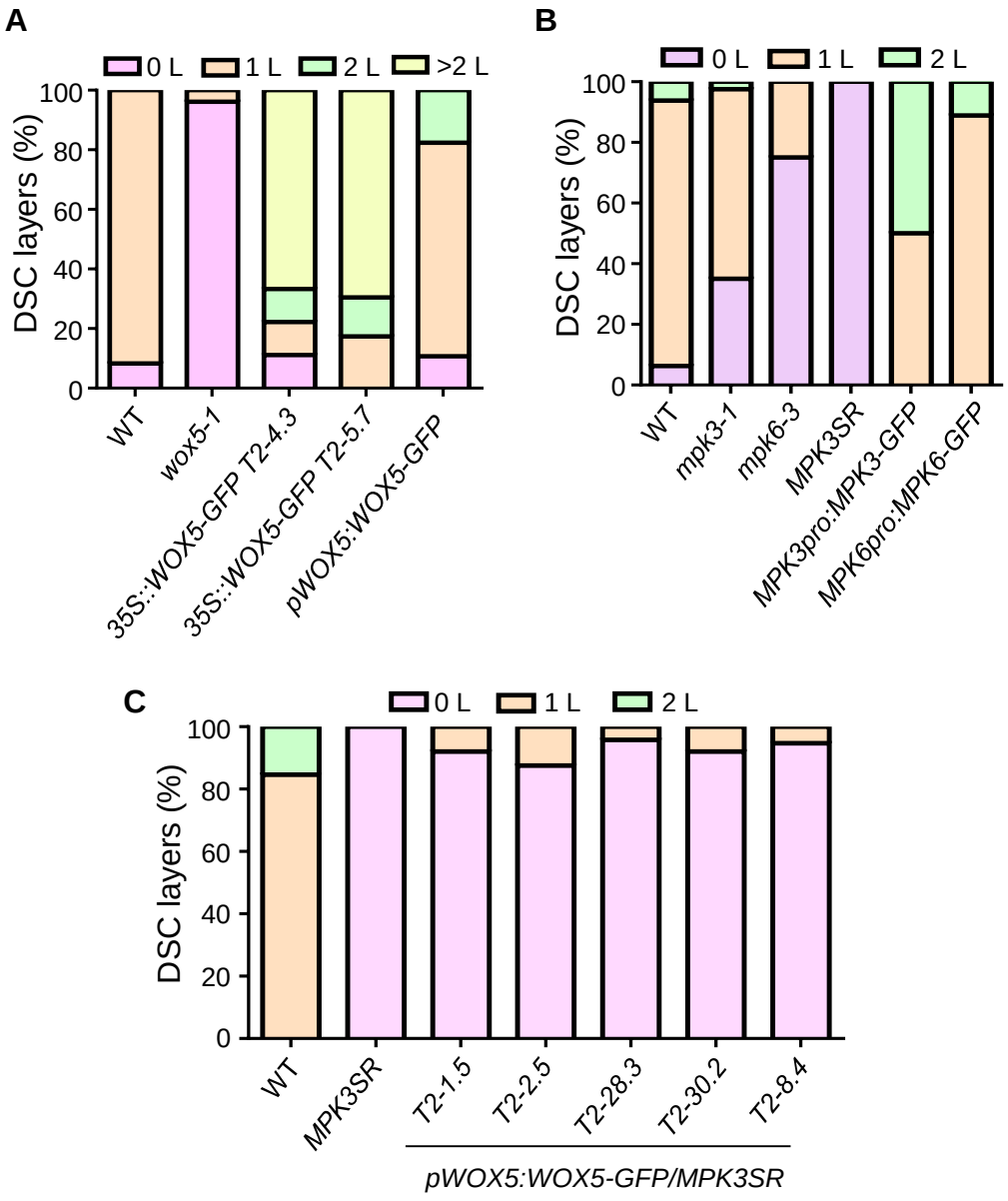


Figure S5. MPK3/MPK6 regulate the maintenance of DSC in the root through WOX5