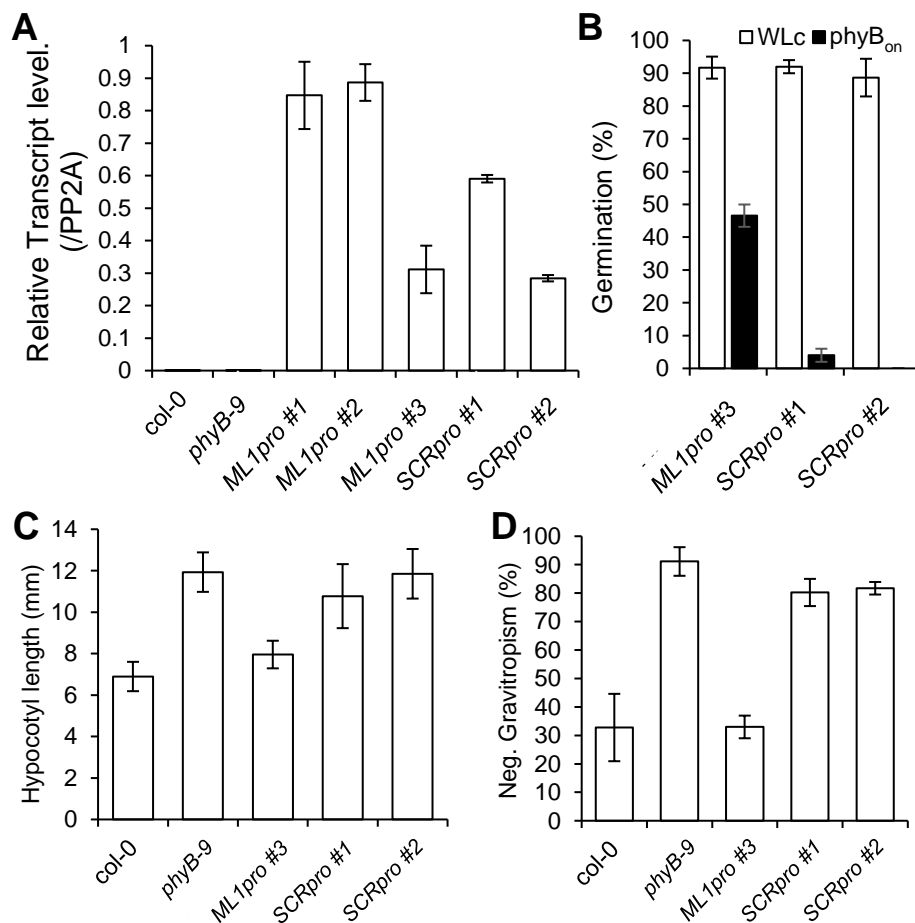


Supplemental Figure 1. Epidermal phyB inhibits hypocotyl negative gravitropism in response to red light in *SCRpro:PIF1;ML1pro:PHYB/ab* and *SCRpro:PIF3;ML1pro:PHYB/ab*. Hypocotyl negative gravitropism was quantified by counting seedlings growing within 45 degrees of vertical. Error bars indicate SD, (n = 3, 80 seedlings each).



Supplemental Figure 2. An *ML1pro* line expressing the lower level of *PHYB-GFP* mRNA than *SCRpro* line can promote light responses. **(A)** The expression levels of *PHYB-GFP* mRNA in three *ML1pro* and two *SCRpro* lines. (SD, n=3 biological replicates). **(B)** Germination frequencies for each tissue-specific phyB line. White bars indicate the continuous white light (WLC) condition and black bars indicate the phyB_{on} condition. Error bars indicate SD, (n = 3 biological replicates, 50 seeds each). **(C)** Hypocotyl lengths for the tissue-specific phyB lines under continuous red light (Rc). Error bars indicate SD, (n = 60 seedlings). **(D)** Hypocotyl negative gravitropism for the tissue-specific phyB lines under continuous red light (Rc). Hypocotyl negative gravitropism was quantified by counting seedlings growing within 45 degrees of vertical. Error bars indicate SD, (n = 3, 60 seedlings each).

Supplemental Table 1. List of primers.

| promoter cloning primers | |
|--------------------------|--|
| Primer Name | Sequence |
| PHYBpro-F(HindIII) | 5'-GATCAAGCTTTCAGTGGCACGTGGTAAATTACTGG-3' |
| PHYBpro-R(XbaI) | 5'-GATCTCTAGACGCCGTTTGATTTTGAATTTGAGAAAATTC-3' |
| ML1pro-F(HindIII) | 5'-GATCAAGCTTTCGAACCAAGAGATATTGGGTTGCTAC-3' |
| ML1pro-R(BamHI) | 5'-GATCGGATCCGGCTAATATGAACAAACATGCAATATTTGC-3' |
| ML1pro-F(BamHI) | 5'-GATCTCTAGAGGATCCGTTTTATATTTTTTCATGATCTAC-3' |
| ML1pro-R(SpeI) | 5'-GATCACTAGTCGATGATGATGGATGCCTATCAATTTTTGG-3' |
| CO2pro-F(NoEnz) | 5'-GATCTAACTCCATTATTACGACTGTGCCACTC-3' |
| CO2pro-R(XbaI) | 5'-GCTCTAGATATCGTTATTAAGTAGGGTTCCTTGAATTTTC-3' |
| SCRpro-F(HindIII) | 5'-GATCAAGCTTCTATTCAAATATGGACTTGGAGAAAGAC-3' |
| SCRpro-R(XbaI) | 5'-GATCTCTAGACGGAGATTGAAGGGTTGTTGGTCGTG-3' |
| Sultr1pro-F(HindIII) | 5'-GATCAAGCTTGAAGCAAAGTAGTACTATGAGATAG-3' |
| Sultr1pro-R(XbaI) | 5'-GATCTCTAGATGCTATGTGTGTTTTGTAGCAAAC-3' |
| CER6pro-F(HindIII) | 5'-GATCAAGCTTGTCAATCCAAAGAAATCAGAGAAGT-3' |
| CER6pro-R(XbaI) | 5'-GATCTCTAGACCGTCGGAGAGTTTTAATGTATAATTG-3' |
| CDS cloning primers | |
| Primer Name | Sequence |
| PHYB-F(XbaI) | 5'-GATCTCTAGGATGGTTTCCGGAGTCGGGGGTAG-3' |
| PHYB-F(BamHI) | 5'-GATCGGATCCATGGTTTCCGGAGTCGGGGGTAG-3' |
| PHYB-R(BamHI) | 5'-GATCGGATCCCATATGGCATCATCAGCATCATGTC-3' |
| PIF1-F(AvrII) | 5'-GAGACCTAGGATGCATCATTTTTGTCCCT-3' |
| PIF1-R(BclI) | 5'-GAGATGATCAAACCTGTTGTGTGGTTTCCGTGA-3' |
| PIF3-F(SpeI) | 5'-AGAGAGCTCAAATGCCTCTGTTTGAGCTTTTC-3' |
| PIF3-R(BamHI) | 5'-GAGAGGATCCACGACGATCCACAAAAGTGA-3' |
| qPCR primers | |
| Primer Name | Sequence |
| GFP RT-F | 5'-CCACAACGTATACATCACGGCA-3' |
| GFP RT-R | 5'-CCCAGCAGCTGTTACAAACTCA-3' |
| PP2A LP | 5'-TATCGGATGACGATTCTTCGTGCAG-3' |
| PP2A RP | 5'-GCTTGGTCGACTATCGGAATGAGAG-3' |