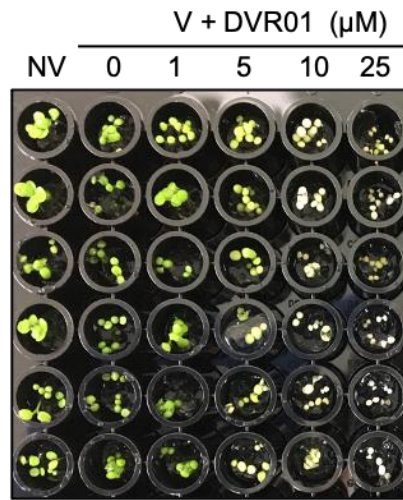
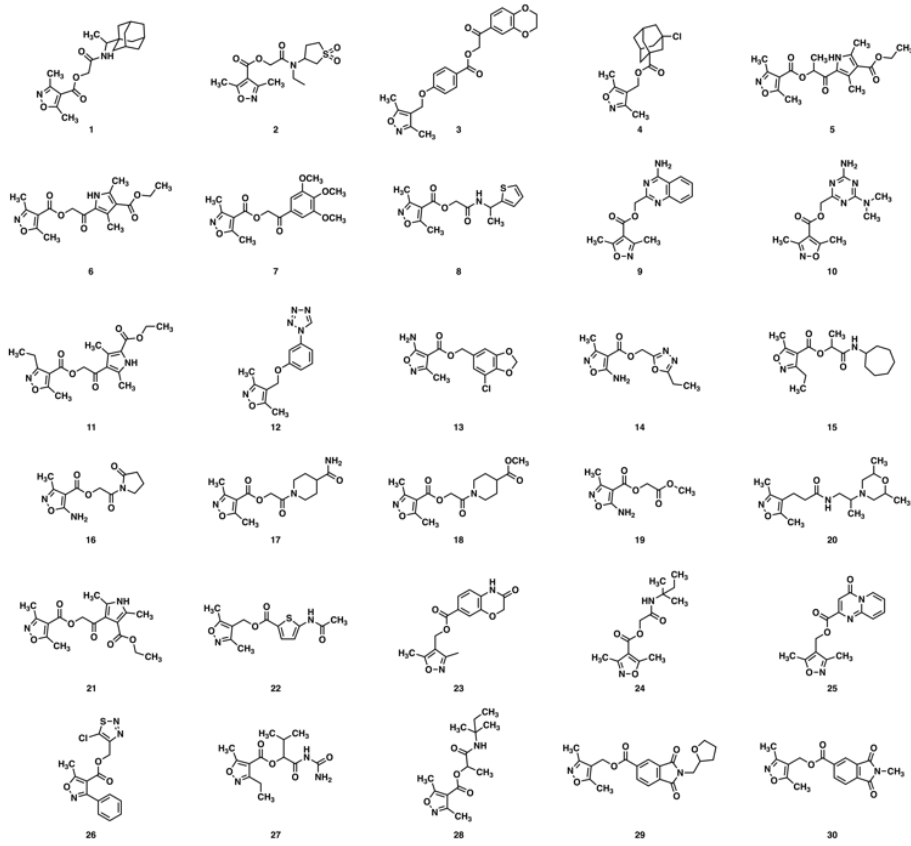


Supplementary Figure 1 | DVR01 did not affect the expression levels of *FLC* in NV plants. The expression levels of *FLC* were quantified in 7-day-old seedlings of NV plants and DVR01-treated NV plants. No statistical significance was detected. Error bars denote SD. Two-tailed Student's t-test was performed.

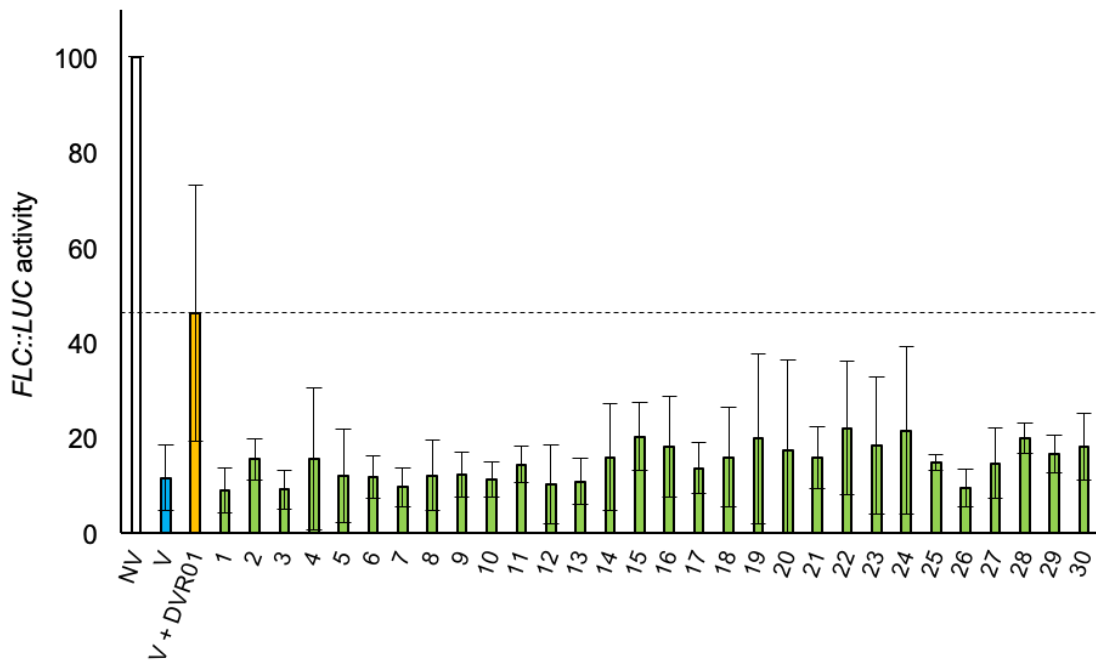


Supplementary Figure 2 | Plant morphologies of DVR01-treated plants. Photographs of 7-day-old seedlings treated with various concentrations of DVR01. DVR01 induced retarded growth in a concentration-dependent manner.

A

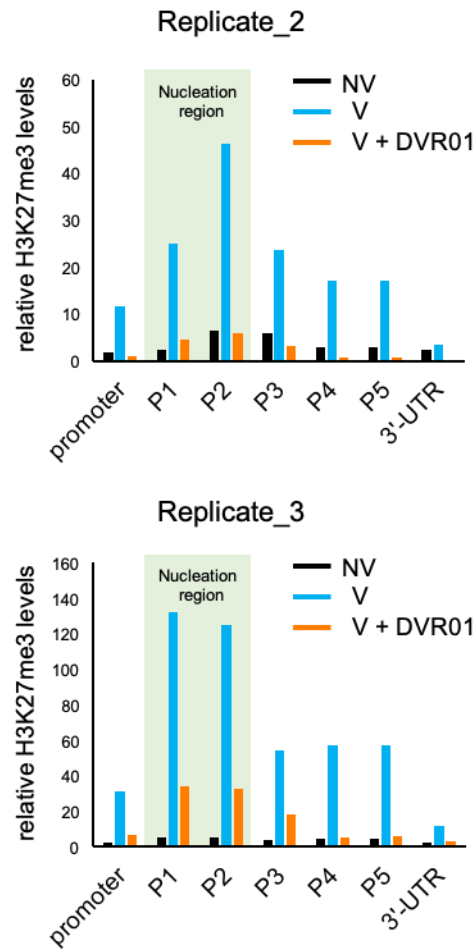


B



Supplementary Figure 3 | *FLC::LUC* activities in V plants treated with analogous compounds of DVR01. (A) Chemical structures of 30 analogous compounds of DVR01. (B) *FLC::LUC* activities were measured in V plants treated with 30 analogous

compounds of DVR01. Compounds at 10 μ M were used. Compared with these plants, DVR01-treated V plants showed the highest activity of *LUC*. Error bars represent SD.



Supplementary Figure 4 | Three replicates of ChIP-qPCR analysis of H3K27me3. The accumulation levels of H3K27me3 in NV-, V-, and DVR01-treated V plants. The P1 and P2 regions are located in the nucleation region (light green). Relative values are normalized by the negative control TA3.

Supplementary Table 1 | Primers used in this study

Primers for qPCR	Sequence
<i>PP2A</i> (Fw)	5'-TATCGGATGACGATTCTTCGTGCAG-3'
<i>PP2A</i> (Rv)	5'-GCTTGGTCGACTATCGGAATGAGAG-3'
<i>FLC</i> (Fw)	5'-CCGAACTCATGTTGAAGCTTGTTGAG-3'
<i>FLC</i> (Rv)	5'-CGGAGATTTGTCCAGCAGGTG-3'

Primers for ChIP-qPCR	Sequence
<i>FLC-promoter</i> (Fw)	5'-ACTATGTAGGCACGACTTTGGTAAC-3'
<i>FLC-promoter</i> (Rv)	5'-TGCAGAAAGAACCTCCACTCTAC-3'
<i>FLC-p1</i> (Fw)	5'-CGACAAGTCACCTTCTCCAAA-3'
<i>FLC-p1</i> (Rv)	5'-AGGGGGAACAAATGAAAACC-3'
<i>FLC-p2</i> (Fw)	5'-GTCGCTCTTCTCGTCGCTC-3'
<i>FLC-p2</i> (Rv)	5'-AGGGGGAACAAATGAAAACC-3'
<i>FLC-p3</i> (Fw)	5'-TTCCTATCTTTGCTGTGGACCT-3'
<i>FLC-p3</i> (Rv)	5'-GAATCGCAATCGATAACCAGA-3'
<i>FLC-p4</i> (Fw)	5'-GTTTCCAGTGGCCTTTTCAA-3'
<i>FLC-p4</i> (Rv)	5'-GACCAGGCTGGAGAGATGAC-3'
<i>FLC-p5</i> (Fw)	5'-CTTTTTTCATGGCAGGATCA-3'
<i>FLC-p5</i> (Rv)	5'-TGACATTTGATCCCACAAGC-3'
<i>FLC-3'UTR</i> (Fw)	5'-TTGTAAAGTCCGATGGAGACG-3'
<i>FLC-3'UTR</i> (Rv)	5'-ACTCGGCGAGAAAGTTTGTG-3'
<i>TA3</i> (Fw)	5'-CTGCGTGGAAGTCTGTCAAA-3'
<i>TA3</i> (Rv)	5'-CTATGCCACAGGGCAGTTTT-3'