Supplemental Figure S1. 254 independent metabolites.
Metabolites were measured using gas chromatography time-of-flight mass spectrometry (GC-TOF-MS), capillary electrophoresis mass spectrometry (CE-MS). 254 independent metabolites were identified by retention time indices and specific mass fragments. In each case, the maximum level of metabolite was set to 100. Error bars indicate SD of the mean for three experiments. Metabolites in the α and β lines of each transgenic plant are shown by the left and right bars, respectively.
Supplemental Figure S2. Venn diagrams of identified metabolites that are decreased relative to the controls.

The diagrams illustrate the number of identified metabolites in six kinds of plants: cold-exposed (1 and 4 days), dehydration-exposed (2 and 3 days), 35S:DREB1A and 35S:DREB2A-CA plants.
(A–C) Kaempferol 3-[6′-(glucosyl) rhamnoside] 7-rhamnoside
(D–F) Kaempferol 3-glucoside 7-rhamnoside
(G–I) Kaempferol 3-rhamnoside 7-rhamnoside

Untreated
Cold (1 day)
Dehydration (2 days)
Cold (4 days)
Dehydration (3 days)
Control

35S:DREB1A (α & β)
35S:DREB2ACA (α & β)

Supplemental Figure S3. Secondary metabolites.
A, B and C indicate kaempferol 3-[6′-(glucosyl) rhamnoside] 7-rhamnoside. D, E and F indicate kaempferol 3-glucoside 7-rhamnoside. G, H and I indicate kaempferol 3-rhamnoside 7-rhamnoside. For each metabolite, the maximal measured peak area was normalized. Error bars indicate SD of the mean for three experiments. Shown are metabolites in two independent lines (α and β) of 35S:DREB1A and 35S:DREB2A-CA transgenic plants. Left and right bars show metabolites in the α and β line of each transgenic plant, respectively.
Supplemental Figure S4. Venn diagrams of the metabolite-related gene expression. The diagrams illustrate the number of metabolite-related genes in six kinds of plants: cold-exposed (1 and 4 days), dehydration-exposed (2 and 3 days), 35S:DREB1A and 35S:DREB2ACA plants. The metabolite-related genes that are increased relative to the controls are shown at the top and those that are decreased are shown at the bottom.
Supplemental Figure S5. Dehydration treatment.

Plants were grown for 2 or 3 days without watering. To obtain accurate results, we carefully raised single plants in Petri dishes, each containing an equal amount of soil. Soil moisture contents were calculated from soil dry weight.

(A) Untreated; the soil moisture content was 84.3%.
(B) Under dehydration, on the second day, the soil moisture content was 51.1%.
(C) Under dehydration, on the third day, the moisture content was 11.6%.