Cold-responsive genes expression change

Metabolism related genes, such as carbohydrate, amino acid and fatty acid metabolism genes, etc.

Anti-freezing protein related genes

Detoxifying enzymes related genes, SOD, CAT, POD

Low temperatures

Cold sensors

Signal transduction

Cold responsive transcription factor genes

Histidine kinases, ABA receptor

Calcium signaling pathway

AP2/ERF, MYB, NAC, bZIP, zinc finger protein, etc.

Metabolic balance of substance and energy under cold stress

Enhancement of low temperature resistance

Cold acclimation