

**Table S3.** The Metabolism Pathways Annotations and Up-down Regulated Differential Genes in Three Groups

Pathway of A class	Pathway of B class	pathway ID	Pathway of C class	DEG3		Pathway of C class	DEG1		Pathway of C class	DEG2	
				The number of upregulate d genes	The number of downregul ated genes		The number of upregulate d genes	The number of downregulat ed genes		The number of upregulated genes	The number of downregulat ed genes
1. Metaboli sm	1.0 Global and overview maps	ath01230	Biosynthesis of amino acids	16	16	—	—	—	—	—	—
		ath01110	Biosynthesis of secondary metabolites	90	74	Biosynthesis of secondary metabolites	3	1	Biosynthesis of secondary metabolites	2	0
		ath01200	Carbon metabolism	10	18	—	—	—	—	—	—
		ath01212	Fatty acid metabolism	9	2	Fatty acid metabolism	1	1	Fatty acid metabolism	1	1
		ath01100	Metabolic pathways	144	117	Metabolic pathways	4	2	Metabolic pathways	1	1
	1.1 Carbohy -drate metaboli -sm	ath00520	Amino sugar and nucleotide sugar metabolism	6	5	—	—	—	—	—	—
		ath00010	Glycolysis / Gluconeogenesis	4	7	—	—	—	—	—	—
		ath00630	Glyoxylate and dicarboxylate metabolism-	3	7	—	—	—	—	—	—

	ath00640	Propanoate metabolism-	7	2	—	—	—	—	—	—
	ath00230	Purine metabolism-	5	6	—	—	—	—	—	—
	ath00620	Pyruvate metabolism	4	4	—	—	—	—	—	—
	ath00500	Starch and sucrose metabolism	6	17	Starch and sucrose metabolism	2	0	Starch and sucrose metabolism	2	0
1.2										
Energy metabolism-sm	ath00920	Sulfur metabolism	3	4	—	—	—	—	—	—
1.3 Lipid metabolism-sm	ath00592	alpha-Linolenic acid metabolism	3	4	—	—	—	—	—	—
	ath01040	Biosynthesis of unsaturated fatty acids	3	1	—	—	—	—	—	—
	ath00061	Fatty acid biosynthesis	6	0	—	—	—	—	—	—
	ath00071	Fatty acid degradation	6	1	—	—	—	—	—	—
	ath00062	Fatty acid elongation	2	3	Fatty acid elongation	1	1	Fatty acid elongation	4	2

	ath00100	Steroid biosynthesis	2	3	Steroid biosynthesis	0	1			
	ath00250	Arginine and proline metabolism	5	3	—	—	—	—	—	—
	ath00330	Alanine, aspartate and glutamate metabolism	4	2	—	—	—	—	—	—
	ath00270	Cysteine and methionine metabolism	9	5	—	—	—	—	—	—
1.5 Amino acid metaboli -sm					—	—	—	<b>Histidine metabolism</b>	0	1
	ath00260	Glycine, serine and threonine metabolism	4	9	—	—	—	—	—	—
	ath00360	Phenylalanine metabolism	12	2	—	—	—	—	—	—
	ath00380	Tryptophan metabolism	8	1	—	—	—	—	—	—
	ath00350	Tyrosine metabolism	5	2	—	—	—	—	—	—
	ath00280	Valine, leucine and isoleucine degradation	4	2	—	—	—	—	—	—

1.6	ath00410	beta-Alanine metabolism	4	5	—	—	—	—	—	—
Metabolism of other amino acids	ath00460	Cyanoamino acid metabolism	5	7	—	—	—	Cyanoamino acid metabolism	5	3
	ath00480	Glutathione metabolism	14	6	—	—	—	—	—	—
	ath00450	Selenocompound metabolism	3	1	—	—	—	—	—	—
1.8Metabolism of cofactors and vitamins	ath00760	Nicotinate and nicotinamide metabolism	1	2	—	—	—	—	—	—
	—	—	—	—	—	—	—	<b>One carbon pool by folate</b>	2	0
	ath00130	Ubiquinone and other terpenoid-quinone biosynthesis	12	2	—	—	—	—	—	—
1.9Metabolism of terpenoids and polyketides	ath00906	Carotenoid biosynthesis	2	3	—	—	—	—	—	—
	ath00902	Monoterpenoid biosynthesis	3	0	—	—	—	Monoterpenoid biosynthesis	1	0
1.10 Biosynthesis	ath00941	Flavonoid biosynthesis	17	3	—	—	—	—	—	—

	is of other secondary metabolites	ath00950	Isoquinoline alkaloid biosynthesis	4	2	—	—	—	—	—	—
		ath00940	Phenylpropanoid biosynthesis	28	5	—	—	—	Phenylpropanoid biosynthesis	2	0
		ath00945	Stilbenoid, diarylheptanoid and gingerol biosynthesis	4	1	—	—	—	—	—	—
		ath00960	Tropane, piperidine and pyridine alkaloid biosynthesis	4	2	—	—	—	—	—	—
2. Genetic Informat ion Processi ng	2.1Trans cription	ath03020	RNA polymerase	3	7	RNA polymerase	1	0	—	—	—
	2.4	ath03030	DNA replication	3	3	—	—	—	—	—	—
	Replication and repair	ath03430	Mismatch repair	2	3	—	—	—	—	—	—
3.Enviro nmental Informat ion Processi ng	3.2	ath04016	MAPK signaling pathway - plant	9	4	—	—	—	—	—	—
	Signal transduc -tion	ath04075	Plant hormone signal transduction	13	9	—	—	—	—	—	—

4.Cellular Processes	4.1	ath04146	Peroxisome	12	5	—	—	—	—	—	—
	Transport and catabolism	ath04145	Phagosome	2	7	—	—	—	—	—	—
5. Organismal Systems	5.10Envi ronment al adaptatio n	ath04712	Circadian rhythm - plant	6	2	—	—	—	Circadian rhythm-plant	1	0
		ath04626	Plant-pathogen interaction	13	4	—	—	—	—	—	—