

Supplemental Table S1. GO enrichment analysis (the DEGs number in per pathway) of adults of *P. quatuordecimpunctata* under different temperature stress.

Groups	Pathway ID	DEGs		
		All	Up	Down
35 vs 32°C	catalytic activity	91	74	17
	hydrolase activity	42	36	6
	transferase activity, transferring glycosyl groups	10	10	-
	hydrolase activity, acting on glycosyl bonds	9	9	-
	flavin adenine dinucleotide binding	7	4	3
	oxidoreductase activity, acting on CH-OH group of donors	7	4	3
	monooxygenase activity	6	6	-
	oxidoreductase activity, acting on paired donors ...	6	6	-
	alpha, alpha-trehalase activity	3	3	-
	trehalase activity	3	3	-
	formyltetrahydrofolate dehydrogenase activity	2	-	2
	xanthine dehydrogenase activity	2	-	2
	xanthine oxidase activity	2	-	2
	oxidoreductase activity, acting on CH or CH2 groups...	2	-	2
	oxidoreductase activity, acting on CH or CH2 groups...	2	-	2
	molybdopterin cofactor binding	2	-	2
	carbohydrate metabolic process	11	7	4
	plasma membrane bounded cell projection organization	4	4	-
	disaccharide metabolic process	3	3	-
	trehalose metabolic process	3	3	-
	oligosaccharide metabolic process	3	3	-
	coenzyme catabolic process	2	-	2
	10-formyltetrahydrofolate metabolic process	2	-	2
	10-formyltetrahydrofolate catabolic process	2	-	2
	folic acid-containing compound catabolic process	2	-	2
	cellular modified amino acid catabolic process	2	-	2
	pteridine-containing compound catabolic process	2	-	2
	cell-matrix adhesion	2	2	-
	cell-substrate adhesion	2	2	-
	dicarboxylic acid catabolic process	2	-	2
38 vs 35°C	catalytic activity	185	124	61
	oxidoreductase activity	58	49	9
	cofactor binding	29	21	8
	monooxygenase activity	14	10	4
	oxidoreductase activity, acting on paired donors ...	12	8	4
	hydroxymethyl-, formyl- and related transferase	6	6	-
	small molecule metabolic process	42	33	9
	oxidation-reduction process	36	31	5
	carboxylic acid metabolic process	24	21	3
	oxoacid metabolic process	24	21	3

	organic acid metabolic process	24	21	3
	cellular amino acid metabolic process	19	18	1
	alpha-amino acid metabolic process	14	14	-
	small molecule catabolic process	10	10	-
	aromatic amino acid family metabolic process	9	9	-
	alpha-amino acid catabolic process	9	9	-
	cellular amino acid catabolic process	9	9	-
	carboxylic acid catabolic process	9	9	-
	organic acid catabolic process	9	9	-
	drug catabolic process	8	8	-
	de novo IMP biosynthetic process	7	7	-
	IMP biosynthetic process	7	7	-
	IMP metabolic process	7	7	-
	serine family amino acid metabolic process	6	6	-
	aromatic amino acid family catabolic process	5	5	-
	purine nucleobase biosynthetic process	5	5	-
	L-phenylalanine metabolic process	4	4	-
	L-phenylalanine catabolic process	4	4	-
	erythrose 4-phosphate/phosphoenolpyruvate...	4	4	-
	erythrose 4-phosphate/phosphoenolpyruvate...	4	4	-
38 vs 32°C	catalytic activity	139	120	19
	oxidoreductase activity	48	42	6
	transaminase activity	9	9	-
	transferase activity, transferring nitrogenous	9	9	-
	oxidation-reduction process	36	31	5
	small molecule metabolic process	36	35	1
	carboxylic acid metabolic process	22	21	1
	oxoacid metabolic process	22	21	1
	organic acid metabolic process	22	21	1
	cellular amino acid metabolic process	19	18	1
	small molecule catabolic process	11	11	-
	alpha-amino acid metabolic process	11	11	-
	de novo IMP biosynthetic process	9	9	-
	IMP biosynthetic process	9	9	-
	IMP metabolic process	9	9	-
	aromatic amino acid family metabolic process	9	9	-
	alpha-amino acid catabolic process	9	9	-
	cellular amino acid catabolic process	9	9	-
	carboxylic acid catabolic process	9	9	-
	organic acid catabolic process	9	9	-
	purine nucleoside monophosphate biosynthetic	9	9	-
	purine ribonucleoside monophosphate biosynthetic	9	9	-
	purine nucleoside monophosphate metabolic process	9	9	-
	purine ribonucleoside monophosphate metabolic	9	9	-

ribonucleoside monophosphate biosynthetic process	9	9	-
ribonucleoside monophosphate metabolic process	9	9	-
pigment biosynthetic process	8	8	-
pigment metabolic process	8	8	-
purine nucleobase biosynthetic process	7	7	-
purine nucleobase metabolic process	7	7	-

Note: “All” indicates the number of all DEGs; “Up” indicates the number of up-regulated genes; “Down” indicates the number of down-regulated genes; “-” indicates no DEGs.

Supplemental Table S2. KEGG enrichment analysis (the DEGs number in per pathway) of adults of *P. quatuordecimpunctata* under different temperature stress.

Groups	Pathway ID	DEGs		
		All	Up	Down
35 vs 32°C	Steroid hormone biosynthesis	6	6	-
	Starch and sucrose metabolism	11	10	1
	Rheumatoid arthritis	6	4	2
	Retinol metabolism	6	6	-
	Regulation of lipolysis in adipocytes	5	5	-
	Proteoglycans in cancer	13	11	2
	Protein digestion and absorption	7	7	-
	Porphyrin and chlorophyll metabolism	4	4	-
	Pentose and glucuronate interconversions	5	5	-
	Metabolic pathways	42	35	7
	Lysosome	12	9	3
	Glycerolipid metabolism	5	3	2
	Drug metabolism – other enzymes	9	6	3
	Drug metabolism – cytochrome P450	6	6	-
	Chemical carcinogenesis	7	7	-
	Caffeine metabolism	2	-	2
	Ascorbate and aldarate metabolism	5	5	-
	Apoptosis	8	5	3
	Antigen processing and presentation	7	4	3
	ABC transporters	5	5	-
38 vs 35°C	Tyrosine metabolism	8	6	2
	Steroid hormone biosynthesis	18	13	5
	Starch and sucrose metabolism	10	4	6
	Retinol metabolism	18	13	5
	Phenylalanine, tyrosine and tryptophan biosynthesis	5	5	-
	Phenylalanine metabolism	8	7	1
	Pentose and glucuronate interconversions	8	4	4
	One carbon pool by folate	9	9	-
	Metabolic pathways	113	87	26
	Linoleic acid metabolism	11	8	3
	Glycine, serine and threonine metabolism	23	23	-

	Fatty acid metabolism	10	9	1
	Fatty acid elongation	7	6	1
	Fat digestion and absorption	8	4	4
	Drug metabolism – other enzymes	8	5	3
	Chemical carcinogenesis	18	13	5
	Biosynthesis of amino acids	14	14	-
	Bile secretion	13	9	4
	Ascorbate and aldarate metabolism	9	5	4
	ABC transporters	11	3	8
38 vs 32°C	Valine, leucine and isoleucine degradation	7	6	1
	Ubiquinone and other terpenoid–quinone biosynthesis	5	5	-
	Tyrosine metabolism	7	6	1
	Steroid hormone biosynthesis	11	11	-
	Retinol metabolism	9	8	1
	Purine metabolism	14	11	3
	Phenylalanine, tyrosine and tryptophan biosynthesis	6	6	-
	Phenylalanine metabolism	8	8	-
	One carbon pool by folate	9	9	-
	Metabolic pathways	91	80	11
	Lysosome	16	14	2
	Glycine, serine and threonine metabolism	20	20	-
	Fatty acid metabolism	12	12	-
	Fatty acid elongation	7	7	-
	Fatty acid biosynthesis	6	6	-
	Fat digestion and absorption	7	6	1
	Cysteine and methionine metabolism	9	9	-
	Chemical carcinogenesis	11	11	-
	Biosynthesis of unsaturated fatty acids	6	6	-
	Biosynthesis of amino acids	16	15	1

Note: “All” indicates the number of all DEGs; “Up” indicates the number of up-regulated genes; “Down” indicates the number of down-regulated genes; “-” indicates no DEGs.