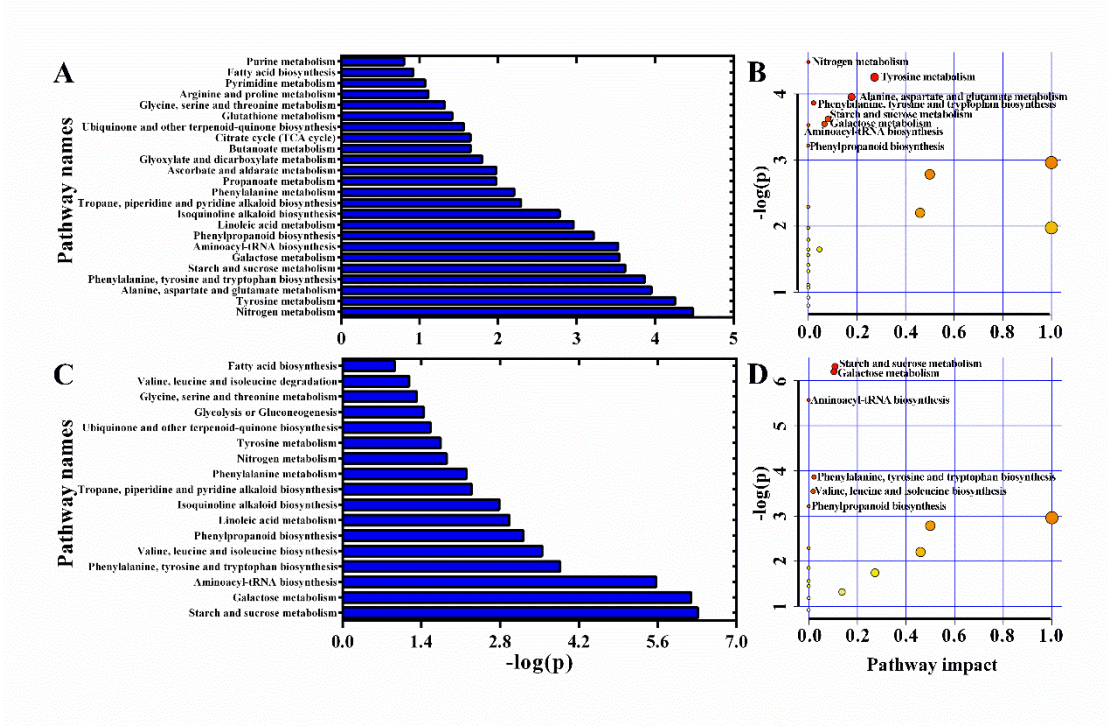

Fig. S1. Pathways analysis performed using MetaboAnalyst 4.0. Summary plot for metabolite set enrichment analysis of metabolic pathway differences of groups I–III (A); overview of pathway analysis of groups I–III (B); summary plot for metabolite set enrichment analysis of metabolic pathway differences of groups II–III (C); overview of pathway analysis of groups II–III (D). An overview showing all matched pathways as circles. The colour and size of each circle is based on the *p* value and the pathways impact value, respectively. Group I, rehydrated mung bean seeds at day 0; groups II–IV, mung bean sprouts under 2,4-dinitrophenol (DNP), distilled (DI) water, and ATP treatments, respectively.

Table S1. Primers used for real-time PCR.

Gene	Sense Primer (5' → 3') (forward)	Antisense Primer (5' → 3') (reverse)	Product Size (bp)
VrUGPU	CCTCGTCACCCGCTATCT	AGCATCTTCAGGAGTTGGC	118
VrFB	TGACCATCACCCGTTTCG	TCCAGCAAGTCCAATAAGC	155
VrPD	TGGGTGAGGATGTCGGTC	TGGTTGAATGCCAGAAGTAG	199
VrCS	GGAAGTGTTGAGTTGGGAAA	AGGAAAAGCACCTGGAAGC	165
VrKD	ACTAAGGTTGAAGCAAAGGAT	GATACAAGTCTGGGCAAAATG	173
VrSD	GAAATGTGGCGGTGCGTG	AAAGTCCAATGGCGGCTC	166

Table S2. Metabolites identified in mung bean.

	Metabolites	Assignments	^{1}H chemical shifts (ppm)	^{13}C chemical shifts (ppm)
1	Isoleucine	αCH; βCH; γCH_2; $\gamma' CH_3$; δCH_3	**3.61** (d); **1.95** (m); **1.33**, **1.00** (m), **0.94** (d); **0.84** (t)	**59.6**; **36.3**; **24.6**; **17.9**; **13.1**
2	Leucine	αCH; βCH_2; γCH; δCH_3; $\delta' CH_3$	**3.59 (m)**; **1.61(m)**; **1.62 (m)**; **0.99 (d)**; **0.87 (d)**	**54.1**; **40.4**; **24.3**; **24.1**; **21.6**
3	Valine	αCH; βCH; γCH_3; $\gamma' CH_3$	**3.61 (d)**; **2.26 (m)**; **0.95 (d)**; **1.04 (d)**	**62.2**; **29.3**; **17.9**; **20.4**
4	Ethanol	αCH_2; βCH_3	**3.61 (m)**; **1.17 (t)**	**60.1**; **17.0**
5	Threonine	αCH; βCH; γCH_3	**3.48** (d); **4.25** (m); **1.25** (d)	**62.7**; **68.3**; **22.0**
6	Lactic acid	αCH; βCH_3	**4.18 (q)**; **1.26 (d)**	**71.7**; **22.0**
7	Alanine	αCH; βCH_3	**3.73 (q)**; **1.32 (d)**	**52.5**; **19.7**
8	Lysine	αCH; βCH_2; γCH_2; δCH_2; εCH_2	**3.61** (t); 1.90 (m); **1.34** (m); **1.61** (m); **2.94** (t)	**56.8**; 32.6; **22.3**; **28.8**; **38.9**
9	Arginine	αCH; βCH_2; γCH_2; δCH_2	**3.71 (t)**; **1.89 (dd)**; **1.59 (m)**; **3.16 (t)**	**56.4**; **28.0**; **25.1**; **40.4**
10	Acetic acid	CH_3	**1.78** (s)	**24.4**
11	γ-Aminobutyric acid	αCH_2; βCH_2; γCH_2	**2.24** (t); **1.87** (m); 3.00 (t)	**34.9**; **23.3**; 42.0
12	Glutamine	αCH; βCH_2; γCH_2	**3.70** (m); **2.11** (m); **2.33** (m)	**56.4**; **27.1**; **33.6**
13	Succinic acid	CH_2	**2.35** (s)	**33.7**
14	Ketoglutaric acid	αCH_2; βCH_2	**3.00** (t); **2.45** (t)	**36.9**; **31.1**
15	Aspartic acid	αCH; βCH_2	**3.81** (dd); **2.66**, **2.71** (dd)	**54.9**; **38.2**, **38.3**
16	Asparagine	αCH; βCH_2	**3.82** (q); **2.84**, **2.92** (dd)	**52.1**; **36.1**
17	Tyrosine	C_1H; C_2H_2; C_4H; C_5H	**3.90** (dd); **2.94**, **3.19** (dd); **7.13** (d); **6.82** (m)	**58.1**; **36.0**; **130.1**; **115.4**
18	Phenylalanine	C_1H; C_2H_2; C_4H; C_5H; C_6H	**3.89** (dd); **2.97**, **3.03** (dd); **7.32** (q); **7.32** (t); **7.33** (m)	**58.0**; **36.9**; **129.1**; **128.6**; **127.1**
19	Histidine	αCH; βCH_2; NCHC; NCHN	**3.88** (dd); **3.06**, **3.21** (dd); **7.04** (d); 7.83 (d)	**55.4**; **28.1**; **118.7**; 138.9
20	Glucose	$^{\alpha}C_1H$; $^{\alpha}C_1H$; $^{\beta}C_2H$; $^{\alpha}C_2H$; $^{\beta}C_3H$; $^{\alpha}C_3H$; C_4H; $^{\beta}C_5H$; $^{\alpha}C_5H$; $^{\beta}C_6H_2$; $^{\alpha}C_6H_2$	**5.10** (d); **4.47** (d); **3.12** (dd); **3.43** (dd); **3.38** (t); **3.58** (t); **3.31** (dd); **3.37** (m); **3.72** (m); **3.61** (dd); 3.89 (dd)	**92.5**; **96.9**; **74.9**; **71.8**; **76.7**; **72.9**; **70.5**; **76.8**; **73.2**; **61.5**; 63.6
21	Choline	$N(CH_3)_3$; NCH_2; OCH_2	**3.20** (s); **3.48** (m); **4.00** (m)	**53.3**; **67.6**; **55.6**
22	Frucose	C_1H_2; C_3H; C_4H; C_5H; C_6H_2	**3.46**, **3.61** (dd); **3.76** (d); **4.10** (d); **3.71** (d); **3.48**, **3.59** (dd)	**64.6**, **64.2**; **68.0**; **77.3**; **70.1**; **63.1**
23	Maltose	$^{1}C_1H$; $^{1}C_2H$; $^{1}C_3H$; $^{1}C_4H$; $^{1}C_5H$; $^{1}C_6H_2$; $^{2}C_1H$; $^{2}C_2H$; $^{2}C_3H$; $^{2}C_4H$; $^{2\alpha\beta}C_5H$; $^{2}C_6H_2$	5.20 (d); **3.60** (m); **3.65** (t); **3.34** (t); **3.68** (m); **3.75** (m); 5.41 (dd); **3.19** (t); **3.95** (m); 3.70 (t); **3.67**, **3.83** (m); 3.80 (m)	95.0; **72.9**; **73.6**; **76.8**; **73.4**; **62.0**; 102.5; **74.2**; **76.5**; 72.0; **71.6**, **69.9**; 63.0
24	Galactose	C_1H; C_2H; C_3H; C_3H; C_4H	**4.41**, **5.14** (d); **3.37** (q); 3.64 (dd); **3.66** (m); **3.82**, **3.86** (q)	**97.5**, **100.9**; **72.6**; 71.0; **64.2**; **69.0**, **68.7**
25	Sucrose	$^{1}C_1H$; $^{1}C_2H$; $^{1}C_3H$; $^{1}C_4H$; $^{1}C_5H$; $^{1}C_6H_2$; $^{2}C_1H_2$; $^{2}C_2H$; $^{2}C_3H$; $^{2}C_4H$; $^{2}C_5H$; $^{2}C_6H_2$	**5.39** (d); **3.45** (t); **3.53** (dd); **3.42**, **3.51** (t); 3.83 (m); **3.59** (dd); **3.59** (dd); **3.93** (m); **4.07** (t); **4.15** (d); **3.59** (dd)	**92.3**; **73.8**; **75.4**; **73.2**, **71.0**; 75.2; **61.5**; **64.0**; **82.0**; **77.9**; **77.0**; **62.9**
26	Scyllo-inositol	CH	**3.28** (s)	**74.0**
27	Gluconic acid	εCH; ζCH_2	**3.70** (m); **3.67** (m)	**73.2**; **64.5**
28	Serine	αCH; βCH_2	**3.77** (t); **3.89** (m)	**56.2**; **61.4**
29	Betaine	CH_3; CH_2	**3.21** (s); **3.89** (s)	**53.3**; **65.5**
30	Myo-inositol	C_1H; C_2H; C_3H; C_4H	**3.12** (t); **3.49** (t); **3.43** (dd); **3.95** (t)	**76.6**; **73.3**; **72.7**; **72.8**
31	Ascorbic acid	αCH_2; βCH; γCH	**3.65** (m); **3.94** (t); 4.50 (s)	**64.5**; **71.6**; 81.1
32	Glycolate	CH_2	**3.97** (s)	**62.9**

33	Raffinose	$^{1}C_1H$; $^{1}C_6H_2$; $^{2}C_1H$; $^{2}C_6H_2$; $^{3}C_1H_2$; $^{3}C_6H_2{}^{1}$; C_2H, $^{1}C_3H$, $^{1}C_4H$, $^{1}C_5H$, $^{2}C_2H$, $^{2}C_3H$, $^{2}C_4H$, $^{2}C_5H$, $^{3}C_2H$, $^{3}C_3H$, $^{3}C_4H$	**4.88** (d); **3.70** (d); **5.37** (d); **3.92** (t); **3.61** (m); **3.64** (m); **4.10** (m), **4.00** (m), **3.95** (m), **3.91** (t), **3.83** (m), **3.77** (m), **3.79** (m), **3.78** (m); **3.49** (m), **3.78** (m)	**100.8**; **62.8**; **95.6**; **65.6**; **63.6**; **66.1**; **77.4**, **74.3**, **72.4**, **70.8**, **73.0**, **82.4**, **71.6**, **70.4**, **70.9**, **62.0**
34	1,3-Dihydroxyacetone	CH_2	**4.3** (s)	**65.5**
35	Arabinose	C_1H; C_2H; C_3H; C_4H; C_5H2	**5.14** (d); **3.46** (t); **3.67** (m); **3.89** (d); **3.8** (dd); **3.75** (m)	**100.8**; **73.7**; **73.6**; **69.6**; **68.0**; **68.4**
36	Indole-3-acetic acid	C_1H_2; C_4H; C_6H	**3.52** (s); 7.38 (d); **6.74** (d)	**61.4**; 133.5; **115.4**
37	Oleic acid	C_1H_2; C_2H_2; C_3H_2-C_6H_2, $C_{11}H_2$, $C_{14}H_2$; C_7H_2, $C_{10}H_2$; C_8H, C_9H; $C_{12}H_2$, $C_{13}H_2$; $C_{15}H_2$; $C_{16}H_2$; $C_{17}H_3$	**2.35** (t); **1.64** (m); **1.33** (m); **2.02** (m); **5.35** (m); **1.27** (m); **1.25** (m); **1.29** (m); **0.89** (t)	**34.0**; **24.6**; **23.9**; **27.1**; **126.6**; **29.4**; **31.9**; **22.53**; **14.1**
38	Linoleic acid	C_1H_2; C_2H_2; C_3H_2; C_4H_2-C_6H_2, $C_{14}H_2$; C_7H_2, $C_{13}H_2$; C_8H, $C_{12}H$; C_9H, $C_{11}H$; $C_{10}H_2$; $C_{15}H_2$; $C_{16}H_2$; $C_{17}H_3$	**2.32** (t); **1.63** (m); **1.32** (m); **1.35** (m); **2.05** (m); **5.36** (m); **5.34** (m); **2.77** (t); **1.29** (m); **1.30** (m); **0.92**, **0.86** (t)	**34.0**; **24.7**; **29.1**; **29.4**; **27.2**; **129.59**; **127.8**; **25.7**; **31.6**; **22.5**; **14.1**
39	Linolenic acid	C_1H_2; C_2H_2; C_3H_2-C_6H_2; C_7H_2; C_8H; C_9H, $C_{11}H$; $C_{10}H_2$; $C_{12}H$; $C_{13}H_2$; $C_{14}H$; $C_{15}H$; $C_{16}H_2$; $C_{17}H_3$	**2.34** (t); **1.61** (q); **1.31** (m); **2.05** (m); **5.36** (m); **5.30** (m); **2.81** (m); **5.34** (m); **2.81** (m); **5.28** (m); **5.39** (m); **2.08** (m); **0.93** (t)	**33.9**; **24.6**; **29.2**; **27.2**; **129.59**; **127.6**; **26.9**; **127.8**; **25.6**; **126.9**; **131.4**; **20.6**; **14.3**
40	*P*-coumaric acid	C_1H; C_2H; C_4H; C_5H	6.29 (d); **7.44** (dd); **7.48** (dd); **6.77** (d)	115.7; **143.1**; **130.0**; **115.3**
41	Vanillin	C_1H; C_2H; C_5H; C_6H; OCH_3	9.46 (s); **7.35** (d); **6.80** (d); **7.32** (s); **3.79** (s)	193.6; **110.0**; **115.4**; **128.4**; **55.0**
42	Trigonelline	C_1H; C_3H; C_4H; C_5H; NCH_3	**9.20** (s); **8.91** (d); **8.05** (t); **8.89** (d); **4.43** (s)	**146.1**; **144.6**; **127.1**; **144.6**; **47.4**

Bold chemical shifts indicate an identified peak in the two-dimensional (2D) spectra.

Table S3. List of metabolic pathways identified using enrichment analysis of the metabolites.

I-III				II-III			
Pathway name	**Match status**	***P***	**FDR**	**Pathway name**	**Match status**	***P***	**FDR**
Nitrogen metabolism	2/16	0.01	0.35	Starch and sucrose metabolism	3/25	0.00	0.08
Tyrosine metabolism	2/18	0.01	0.35	Galactose metabolism	3/26	0.00	0.08
Alanine, aspartate and glutamate metabolism	2/21	0.02	0.35	Aminoacyl-tRNA biosynthesis	4/67	0.00	0.11
Phenylalanine, tyrosine and tryptophan biosynthesis	2/22	0.02	0.35	Phenylalanine, tyrosine and tryptophan biosynthesis	2/22	0.02	0.44
Starch and sucrose metabolism	2/25	0.03	0.35	Valine, leucine and isoleucine biosynthesis	2/26	0.03	0.48
Galactose metabolism	2/26	0.03	0.35	Phenylpropanoid biosynthesis	2/31	0.04	0.55
Aminoacyl-tRNA biosynthesis	3/67	0.03	0.35	Linoleic acid metabolism	1/5	0.05	0.61
Phenylpropanoid biosynthesis	2/31	0.04	0.42	Isoquinoline alkaloid biosynthesis	1/6	0.06	0.64
Linoleic acid metabolism	1/5	0.05	0.48	Tropane, piperidine and pyridine alkaloid biosynthesis	1/10	0.10	0.92
Isoquinoline alkaloid biosynthesis	1/6	0.06	0.51	Phenylalanine metabolism	1/11	0.11	0.92
Tropane, piperidine and pyridine alkaloid biosynthesis	1/10	0.10	0.76	Nitrogen metabolism	1/16	0.16	1.00
Phenylalanine metabolism	1/11	0.11	0.77	Tyrosine metabolism	1/18	0.18	1.00
Propanoate metabolism	1/14	0.14	0.82	Ubiquinone and other terpenoid-quinone biosynthesis	1/22	0.21	1.00
Ascorbate and aldarate metabolism	1/14	0.14	0.82	Glycolysis or Gluconeogenesis	1/25	0.24	1.00
Glyoxylate and dicarboxylate metabolism	1/17	0.17	0.92	Glycine, serine and threonine metabolism	1/29	0.27	1.00
Butanoate metabolism	1/20	0.19	0.94	Valine, leucine and isoleucine degradation	1/34	0.31	1.00
Citrate cycle (TCA cycle)	1/20	0.19	0.94	Fatty acid biosynthesis	1/47	0.40	1.00
Ubiquinone and other terpenoid-quinone biosynthesis	1/22	0.21	0.97				
Glutathione metabolism	1/26	0.24	1.00				
Glycine, serine and threonine metabolism	1/29	0.27	1.00				
Arginine and proline metabolism	1/37	0.33	1.00				
Pyrimidine metabolism	1/39	0.34	1.00				
Fatty acid biosynthesis	1/47	0.40	1.00				
Purine metabolism	1/55	0.45	1.00				

Note: FDR, false discovery rate.