## Genetic characteristics of *Bursaphelenchus xylophilus* third-stage dispersal juveniles

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Table S1 Statistical analysis of the RNA sequencing data.

- Table S2 Number of genes in each module.
- Table S3 Genes with the top 30 highest IC values in the pink module.
- Table S4 Forty-Two network genes for the pink module.
- Table S5 Top 30 genes with the highest weight value to each of the 7 genes.
- Table S6 Primers used in this study.
- Fig. S1 Clustering dendrogram of samples based on their Euclidean distance.
- Fig. S2 Analysis of network topology with various soft-thresholding powers.
- Fig. S3 Visualization of the gene network using a heatmap plot.
- Fig. S4 Module eigengene expression profile.
- Fig. S5 Bar plot of module significance defined as the mean gene significance across all genes in the module to the DJ3-field trait.
- Figure S6. GO enrichment analysis (Biology Process) of the genes in the pink and magenta modules.
- Figure S7. GO enrichment analysis (Cellular Component) of the genes in the pink and magenta modules.
- Figure S8. GO enrichment analysis (Molecular Function) of the genes in the pink and magenta modules.
- Figure S9. KEGG enrichment analysis of the genes in the pink and magenta modules.
- Figure S10. Visualization of the pink module (weight>0.3).

		5	1 0	
G 1	Clean Reads	Clean Reads	Clean Reads	Gene Mapping
Samples	Number	Rate (%)	Q20 (%)	Rate (%)
J2-1	22,133,728	99.62	97.50	71.27
J2-2	22,203,673	99.94	97.38	71.64
J2-3	24,112,070	99.90	97.94	71.58
J3-1	24,057,741	99.67	97.20	75.77
J3-2	24,145,341	99.56	97.64	74.66
J3-3	23,985,362	99.48	97.67	75.13
J4-1	24,037,515	99.59	96.90	76.96
J4-2	23,465,363	99.65	97.64	76.68
J4-3	24,013,521	99.56	97.68	76.84
Female-1	23,960,379	99.26	95.30	78.06
Female-2	24,013,135	99.46	97.34	78.99
Female-3	23,961,244	99.75	97.42	78.56
Male-1	21,359,122	99.41	94.80	76.86
Male-2	22,063,153	99.53	96.57	76.96
Male-3	21,624,233	99.75	97.31	76.66
J2-2-1	24,110,169	99.89	97.90	59.92
J2-2-2	23,951,367	99.39	97.86	64.57
J2-2-3	24,061,351	99.86	97.34	62.44
DJ3-lab-1	24,018,211	99.51	97.10	75.94
DJ3-lab-2	23,996,384	99.42	97.00	74.01
DJ3-lab-3	23,940,211	99.80	98.40	73.51
DJ3-field-1	23,821,746	99.21	98.60	73.39
DJ3-field-2	23,971,254	99.12	98.41	73.89
DJ3-field-3	23,814,547	99.39	98.76	74.06
DJ4-1	22,051,038	91.38	98.44	66.51
DJ4-2	23.023.245	95.89	98.76	67.88

Table S1 Statistical analysis of the RNA sequencing data.

DJ4-5 22,415,547 90.70 96.42 07.09	DJ4-3	22,415,547	96.76	98.42	67.69
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Module	Gene number
colors	
black	603
blue	2639
brown	2589
cyan	143
green	1010
greenyellow	234
grey	20
magenta	533
pink	583
purple	437
red	789
salmon	158
tan	202
turquoise	4775
yellow	1148

Table S2 Number of genes in each module.

			Homologous		Blast nr
No.	Gene annotation	IC	protein	Protein name	p-value
			GenBank ID		
1	cath1-6	159.5326073	AID50178.1	[Bursaphelenchus mucronatus]	3.4518×10 <sup>-108</sup>
2	O-Gly-hydro30	158.3084016	EPB74230.1	O-Glycosyl hydrolase family 30	1.59787×10 <sup>-80</sup>
				[Ancylostoma ceylanicum]	
3	asp	157.6912185	КЈН53579.1	eukaryotic aspartyl protease [Dictyocaulus viviparus]	2.08533×10-23
4		155 500(274	ADN(4100.1	glutathione S-transferase-1	2 110 10 1 0 22
4	gs1-33	155.5006374	ABN64198.1	[Meloidogyne incognita]	3.11943×10-22
5	cath1-5	154.8696696	AID50178.1	cysteine protease family cathepsin 1	1.31168×10 <sup>-107</sup>
				CBN-DHS-2 protein	
6	CBN-DHS-2	154.3596573	EGT37950.1	[Caenorhabditis brenneri]	4.56842×10-68
				Glycoside hydrolase domain	
7	Gly-hydro	153.8170115	CDJ96960.1	containing protein	4.85292×10-21
				[Haemonchus contortus]	
				7TM GPCR, serpentine receptor class	
8	str-124	153.2131533	CEF64053.1	r (Str) family-containing protein	2.54895×10-06
				[Strongyloides ratti]	
0	ant 26	152 0056442	VV A 74462 1	Glutathione S-transferase	1 2020×10-15
9	gsi-30	152.0850442	KKA/4403.1	[Pristionchus pacificus]	1.8039~10
10	irld-39	151.0613212	-	-	-
11	BUX.s01254.113	150.5725348	-	-	-
12	BUX.s01149.55	150.4648858	-	-	-
13	cath1-4	149.3657473	AID50178.1	cysteine protease family cathepsin 1	1.10675×10 <sup>-90</sup>
				[Bursaphelenchus mucronatus]	
14	BUX.s00460.305	149.1136527	-	-	-
				venom allergen-like protein VAP3	
15	scl-13	148.7282799	ADG86239.1	venom unorgen inte protom vin o	1.09812×10 <sup>-120</sup>
				[Bursaphelenchus xylophilus]	
16	BUX.s01149.58	148.0852976	-	-	-
			VD 00214794	hypothetical protein LOAG 12304	
17	cra-1	147.8092805	AP_00314786		7.65088×10 <sup>-45</sup>
			3.1	[Loa loa]	
18	cath1-1	147.4758269	AID50178.1	cysteine protease family cathepsin 1	6.95176×10 <sup>-76</sup>

Table S3 Genes with the top 30 highest IC values in the pink module.

19	cath1-3	147.2517936	AID50178.1	cysteine protease family cathepsin 1 [Bursaphelenchus mucronatus]	1.05473×10 <sup>-41</sup>
20	BUX.s00609.55	146.8648011	EYB86268.1	hypothetical protein Y032_0282g1277 [Ancylostoma ceylanicum]	2.65302×10 <sup>-149</sup>
21	BUX.s01281.196	146.791013	-	-	-
22	spp-20	146.6361924	-	-	-
23	BUX.s01149.57	146.4990787	-	-	-
24	Cbn-sodh-2	145.7646357	EGT60304.1	CBN-SODH-2 protein [Caenorhabditis brenneri]	4.08829×10 <sup>-91</sup>
25	BUX.s01254.340	145.7577156	XP_00311361 7.1	hypothetical protein CRE_26128 [Caenorhabditis remanei]	2.91415×10 <sup>-54</sup>
26	cath1-8	145.1472441	AID50178.1	cysteine protease family cathepsin 1 [Bursaphelenchus mucronatus]	3.33012×10 <sup>-103</sup>
27	BUX.s00773.12	145.1195146	-	-	-
28	Src-3	144.8323753	CDJ86525.1	Src homology-3 and Tyrosine protein kinase domain containing protein [ <i>Haemonchus contortus</i> ]	2.25183×10-61
29	BUX.s01066.169	144.7103838	-	-	-
30	acs-14	144.5409195	CEF60576.1	Acyl-CoA synthetase family member 2,mitochondrial [ <i>Strongyloides ratti</i> ]	3.21114×10-76

[Bursaphelenchus mucronatus]

No.	Gene annotation	IC	GS	MM	log <sub>2</sub> fold	Homologous protein GenBank ID	Protein name	Blast nr p-value
1	cath1-6	159.532 6073	0.988 8461 64	0.974 1623 11	4.44657 8165	AID50178.1	cysteine protease family cathepsin 1 [Bursaphelenchus mucronatus]	3.4518×10 <sup>-108</sup>
2	O-Gly-hydro30	158.308 4016	0.950 9804 28	0.982 3716 7	2.39027 4998	EPB74230.1	O-Glycosyl hydrolase family 30 [Ancylostoma ceylanicum]	1.59787×10 <sup>-80</sup>
3	asp	157.691 2185	0.940 3891 2	0.987 0788 93	2.78486 744	КЈН53579.1	eukaryotic aspartyl protease [ <i>Dictyocaulus viviparus</i> ]	2.08533×10 <sup>-23</sup>
4	gst-33	155.500 6374	0.946 2089 04	0.976 7892 13	3.84479 9544	ABN64198.1	glutathione S-transferase-1 [ <i>Meloidogyne</i> incognita]	3.11943×10 <sup>-22</sup>
5	cath1-5	154.869 6696	0.986 5229 44	0.968 3950 33	4.44562 1127	AID50178.1	cysteine protease family cathepsin 1 [Bursaphelenchus mucronatus]	1.3117×10 <sup>-107</sup>
6	CBN-DHS-2	154.359 6573	0.987 0170 29	0.962 9187 69	4.49275 9739	EGT37950.1	CBN-DHS-2 protein [Caenorhabditis brenneri]	4.56842×10 <sup>-68</sup>
7	Gly-hydro	153.817 0115	0.951 2587 29	0.973 1865 85	2.69764 4098	CDJ96960.1	Glycoside hydrolase domain containing protein [Haemonchus contortus]	4.85292×10 <sup>-21</sup>
8	str-124	153.213 1533	0.973 0703 6	0.971 1502 09	3.94337 6809	CEF64053.1	7TM GPCR, serpentine receptor class r (Str) family-containing protein [ <i>Strongyloides ratti</i> ]	2.54895×10 <sup>-06</sup>
9	gst-36	152.085 6442	0.988 2188	0.958 1010	4.83776 1218	KKA74463.1	Glutathione S-transferase [Pristionchus pacificus]	1.8039×10 <sup>-15</sup>

## Table S4 Forty-two network genes for the pink module.

			59	89				
10	irld-39	151.061 3212	0.958 5539 26	0.966 8325 36	4.05568 5227	-	-	-
11	BUX.s01254.113	150.572 5348	0.985 3235 67	0.961 5258 05	4.23168 163	-	-	-
12	BUX.s01149.55	150.464 8858	0.990 3836 67	0.955 3638 66	6.91651 6288	-	-	-
13	cath1-4	149.365 7473	0.987 9976 92	0.953 1478 69	6.78676 5412	AID50178.1	cysteine protease family cathepsin 1 [Bursaphelenchus mucronatus]	1.10675×10 <sup>-90</sup>
14	scl-13	148.728 2799	0.996 7551 48	0.950 5994 58	7.98818 8299	ADG86239.1	venom allergen-like protein VAP3 [Bursaphelenchus xylophilus]	1.0981×10 <sup>-120</sup>
15	BUX.s01149.58	148.085 2976	0.991 3973 61	0.951 4531 04	6.71587 8015	-	-	-
16	cath1-1	147.475 8269	0.980 6078 84	0.951 0798 09	6.19801 2395	AID50178.1	cysteine protease family cathepsin 1 [Bursaphelenchus mucronatus]	6.95176×10 <sup>-76</sup>
17	cath1-3	147.251 7936	0.983 4606 7	0.950 3217 45	6.73070 1785	AID50178.1	cysteine protease family cathepsin 1 [Bursaphelenchus mucronatus]	1.05473×10 <sup>-41</sup>
18	BUX.s01281.196	146.791 013	0.972 2815 84	0.959 7139 11	3.66956 6309	-	-	-
19	BUX.s01149.57	146.499	0.991	0.948	9.20532	-	-	-

		0787	6523	3568	3331			
			69	76				
		145 764	0.960	0.958	4 80 ( 20			
20	Cbn-sodh-2	6257	1241	6094	4.89620	EGT60304.1	CBN-SODH-2 protein [Caenorhabditis brenneri]	4.08829×10-91
		0337	54	79	0997			
		145 110	0.998	0.945	7 07003			
21	BUX.s00773.12	5146	2008	0503	2101	-	-	-
		5140	34	3	5101			
		144 822	0.994	0.947	4 10500		Src homology-3 and Tyrosine protein kinase	
22	Src-3	2752	6294	7664	9550	CDJ86525.1	domain containing protein [Haemonchus	2.25183×10-61
		5755	95	82	8338		contortus]	
		144 710	0.992	0.944	5 28064			
23	BUX.s01066.169	2828	3626	0953	778	-	-	-
		3636	62	88	778			
		144 338	0.998	0.943	6 39806			
24	BUX.s00713.823	3328	3589	1689	5219	-	-	-
		5520	89	68	5219			
		144 119	0.971	0.946	5 44816		cysteine protease family cathensin 1	
25	cath1-2	9535	2929	1234	7269	AID50178.1	[Bursaphelenchus mucronatus]	5.50549×10 <sup>-82</sup>
		,555	13	93	1209		[Dursaphetenenus mueronatus]	
		143.634	0.985	0.942	3.71687		Pantothenate kinase 1	
26	Pank-1	1537	9661	1577	8439	KHN77364.1	[Toxocara canis]	7.8244×10 <sup>-146</sup>
		100 /	58	74	0.07			
		142.773	0.991	0.945	4.67688			
27	asp-14	9429	2012	4153	499	-	-	-
		,,	39	66				
		142.562	0.979	0.951	4.54819			
28	BUX.s01038.42	0508	7551	4480	314	-	-	-
			13	53				

29	oac-29	142.343 4777	0.969 7280 86	0.949 7735 71	4.37019 5752	-	-	-
30	cath1-7	140.082 6661	0.974 976	0.941 3329 97	6.57930 3266	AID50178.1	cysteine protease family cathepsin 1 [Bursaphelenchus mucronatus]	5.13471×10 <sup>-15</sup>
31	acsf2	140.013 4726	0.968 4026 14	0.934 4594 28	3.04828 4161	KHN84146.1	Acyl-CoA synthetase family member 2, mitochondrial [ <i>Toxocara canis</i> ]	1.5861×10 <sup>-180</sup>
32	BUX.s00110.118	137.832 0848	0.976 5632 87	0.940 9960 49	3.89475 684	-	-	-
33	sbp-1	136.874 8978	0.985 6165 22	0.932 6526 06	3.01863 2387	KHN86442.1	Sterol regulatory element-binding protein 1 [Toxocara canis]	2.28728×10 <sup>-25</sup>
34	epg-5	135.361 8996	0.967 2641 58	0.939 0191 32	4.76001 2785	-	-	-
35	BUX.s00773.15	127.820 6086	0.979 7985 01	0.918 7912 47	4.49593 605	-	-	-
36	acetyl-CoA	124.517 7749	0.953 4988 58	0.916 1128 18	2.67151 04	CEF71468.1	Carboxyl transferase domain and Biotin [Strongyloides ratti]	0
37	Ddram-1	122.893 0373	0.969 9785 49	0.901 7335 66	3.54205 3909	KHN72428.1	DNA damage-regulated autophagy modulator protein 1 [ <i>Toxocara canis</i> ]	7.98356×10 <sup>-22</sup>
38	acetyl-coenzyme	120.900 9149	0.969 0489	0.900 4126	3.11945 8652	ERG80270.1	acetyl-coenzyme a cytoplasmic [Ascaris suum]	4.10816×10-53

39	fae5	113.140 987	0.951 0620 62	0.884 9645 75	2.58130 6214	EJW88645.1	fatty acid elongation protein 5 [ <i>Wuchereria</i> bancrofti]	1.41793×10 <sup>-84</sup>
40	elo-6	112.933 2421	0.950 4359 31	0.883 6312 75	2.58735 458	XP_0026338 91.1	C. briggsae CBR-ELO-6 protein [Caenorhabditis briggsae]	4.38478×10 <sup>-78</sup>
41	ALDH2	108.130 3498	0.943 4452 8	0.876 5214 63	2.32379 6869	KHN86680.1	Aldehyde dehydrogenase, mitochondrial [ <i>Toxocara canis</i> ]	0
42	tmem-135	97.0444 7902	0.936 1454 96	0.861 9866 89	2.89669 8411	NP_508800. 2	TMEM (human TransMEMbrane protein) homolog [ <i>Caenorhabditis elegans</i> ]	1.24721×10 <sup>-40</sup>

No.	Number of genes	Number of genes	Weight value
1	21	1	0.492137315
2	14	1	0.48994234
3	19	1	0.489799172
4	1	24	0.488884436
5	15	1	0.487896545
6	13	1	0.486417876
7	13	1	0.486417876
8	12	1	0.486246042
9	1	38	0.486233078
10	1	22	0.485689578
11	30	1	0.485672596
12	30	1	0.485672596
13	17	1	0.485275634
14	17	1	0.485275634
15	16	1	0.482392852
16	16	1	0.482392852
17	1	35	0.48210381
18	9	1	0.481253274
19	1	27	0.480864513
20	13	6	0.480119286
21	1	26	0.480107618
22	1	11	0.479618217
23	17	6	0.479410971
24	30	6	0.479314339
25	32	1	0.479200002
26	23	1	0.478527701
27	6	1	0.478405224

Table S5 Top 30 genes with the highest weight value to each of the 7 genes.

28	21	5	0.477791704
29	25	1	0.477422573
30	25	1	0.477422573
31	34	1	0.476765546
32	16	6	0.476657717
33	14	5	0.476154436
34	1	5	0.475697258
35	1	5	0.475697258
36	5	24	0.475196268
37	19	5	0.474910561
38	15	5	0.474557232
39	1	36	0.474272405
40	13	12	0.473994688
41	30	12	0.473905776
42	30	9	0.473658176
43	13	9	0.47357636
44	17	12	0.473520511
45	37	1	0.473350111
46	13	38	0.473160544
47	17	9	0.473133572
48	13	19	0.473009983
49	13	21	0.472701187
50	5	22	0.472496483
51	13	5	0.472444688
52	13	5	0.472444688
53	25	6	0.472428799
54	13	14	0.472399877
55	12	5	0.47222922
56	28	1	0.472021812

57	13	15	0.471611443
58	13	24	0.471138116
59	30	13	0.47112965
60	30	13	0.47112965
61	16	9	0.470966846
62	16	12	0.470922726
63	5	38	0.470806323
64	17	13	0.470653266
65	17	13	0.470653266
66	17	5	0.470506191
67	17	5	0.470506191
68	30	14	0.470475606
69	1	33	0.470208337
70	17	14	0.470091778
71	30	5	0.469789444
72	30	5	0.469789444
73	1	42	0.469625388
74	29	1	0.469077662
75	5	35	0.468628749
76	13	16	0.468608779
77	13	16	0.468608779
78	16	5	0.468531731
79	16	5	0.468531731
80	5	27	0.467683275
81	16	14	0.467508077
82	25	9	0.467296145
83	9	5	0.467250861
84	25	12	0.467183058
85	5	26	0.467022205

86         17         38         0.466919423           87         1         41         0.466721319           88         5         11         0.4665363           89         17         19         0.466387739           90         30         15         0.466056341           92         23         5         0.465923046           93         17         30         0.465491621           94         17         30         0.465491621           94         17         30         0.465326736           96         30         19         0.465326422           97         25         13         0.465300432           98         25         13         0.465300432           99         6         5         0.465054954           100         13         11         0.464746157           101         16         38         0.464533938           102         13         22         0.464003618           103         15         16         0.46330564           104         32         5         0.464003618           105         16         19         0.463303646     <				
87         1         41         0.466721319           88         5         11         0.466387739           90         30         15         0.466387739           90         30         15         0.466211256           91         17         15         0.46695341           92         23         5         0.465923046           93         17         30         0.465491621           94         17         30         0.465491621           95         17         21         0.465326736           96         30         19         0.465300432           97         25         13         0.465300432           98         25         13         0.465030432           99         6         5         0.465054954           100         13         11         0.464746157           101         16         38         0.464583988           102         13         22         0.464003618           103         15         16         0.463303646           104         32         5         0.463303646           105         16         19         0.463303646	86	17	38	0.466919423
88         5         11         0.4665363           89         17         19         0.466387739           90         30         15         0.466211256           91         17         15         0.466056341           92         23         5         0.465923046           93         17         30         0.465491621           94         17         30         0.465491621           95         17         21         0.465326736           96         30         19         0.465300432           97         25         13         0.465300432           98         25         13         0.465300432           99         6         5         0.465054954           100         13         11         0.464503038           102         13         22         0.464003618           103         15         16         0.46303616           103         15         16         0.463303646           104         32         5         0.46303618           105         16         19         0.463303646           106         17         24         0.463303646	87	1	41	0.466721319
89         17         19         0.466387739           90         30         15         0.466211256           91         17         15         0.466056341           92         23         5         0.465923046           93         17         30         0.465491621           94         17         30         0.465491621           95         17         21         0.465326736           96         30         19         0.465300432           97         25         13         0.465300432           98         25         13         0.465300432           99         6         5         0.465300432           99         6         5         0.465300432           99         6         5         0.465300432           100         13         11         0.464746157           101         16         38         0.464583938           102         13         22         0.464003618           103         15         16         19         0.463303646           106         17         24         0.463303646           108         30         16	88	5	11	0.4665363
90         30         15         0.466211256           91         17         15         0.466056341           92         23         5         0.465923046           93         17         30         0.465491621           94         17         30         0.465491621           95         17         21         0.465326736           96         30         19         0.465324422           97         25         13         0.465300432           98         25         13         0.465300432           99         6         5         0.465030432           99         6         5         0.465030432           99         6         5         0.465030432           99         6         5         0.465030432           100         13         11         0.464746157           101         16         38         0.464583938           102         13         22         0.464003618           103         15         16         0.46303646           104         32         5         0.463303646           105         16         19         0.463303646 <td>89</td> <td>17</td> <td>19</td> <td>0.466387739</td>	89	17	19	0.466387739
91       17       15       0.466056341         92       23       5       0.465923046         93       17       30       0.465491621         94       17       30       0.465491621         95       17       21       0.465326736         96       30       19       0.465324422         97       25       13       0.465300432         98       25       13       0.465300432         99       6       5       0.465054954         100       13       11       0.464746157         101       16       38       0.464583938         102       13       22       0.464003618         103       15       16       0.463067440         104       32       5       0.464003618         105       16       19       0.463303646         106       17       24       0.463303646         109       30       16       0.463303646         109       30       16       0.463233787         111       25       5       0.463233787         112       13       26       0.463064092         113	90	30	15	0.466211256
92       23       5       0.465923046         93       17       30       0.465491621         94       17       30       0.465491621         95       17       21       0.465326736         96       30       19       0.465324422         97       25       13       0.465300432         98       25       13       0.465300432         99       6       5       0.465054954         100       13       11       0.465300432         99       6       5       0.464503938         102       13       22       0.464408186         103       15       16       0.464076411         104       32       5       0.464003618         105       16       19       0.46330566         106       17       24       0.463303646         109       30       16       0.463303646         109       30       16       0.463303646         110       25       5       0.463233787         111       25       5       0.463233787         111       25       5       0.463233787         113	91	17	15	0.466056341
93       17       30       0.465491621         94       17       30       0.465491621         95       17       21       0.465326736         96       30       19       0.465324422         97       25       13       0.465300432         98       25       13       0.465300432         99       6       5       0.465054954         100       13       11       0.464746157         101       16       38       0.464583938         102       13       22       0.464003618         103       15       16       0.463067446         104       32       5       0.46303618         105       16       19       0.46330616         106       17       24       0.463303646         109       30       16       0.463303646         109       30       16       0.463233787         111       25       5       0.463233787         112       13       26       0.463038036         114       17       16       0.462781084	92	23	5	0.465923046
94       17       30       0.465491621         95       17       21       0.465326736         96       30       19       0.465324422         97       25       13       0.465300432         98       25       13       0.465300432         99       6       5       0.465054954         100       13       11       0.464746157         101       16       38       0.464583938         102       13       22       0.464003618         103       15       16       0.46303646         104       32       5       0.46303618         105       16       19       0.463336156         108       30       16       0.463303646         109       30       16       0.463233787         111       25       5       0.463233787         112       13       26       0.463038036         113       30       11       0.46338036         114       17       16       0.462781084	93	17	30	0.465491621
95       17       21       0.465326736         96       30       19       0.465324422         97       25       13       0.465300432         98       25       13       0.465300432         99       6       5       0.465054954         100       13       11       0.46476157         101       16       38       0.464583938         102       13       22       0.464003618         103       15       16       0.464076411         104       32       5       0.464003618         105       16       19       0.463303646         106       17       24       0.463303646         108       30       16       0.463303646         109       30       16       0.463303646         110       25       5       0.463233787         111       25       5       0.463038036         112       13       26       0.463038036         113       30       11       0.46338036         114       17       16       0.462781084	94	17	30	0.465491621
96       30       19       0.465324422         97       25       13       0.465300432         98       25       13       0.465300432         99       6       5       0.465054954         100       13       11       0.464746157         101       16       38       0.464583938         102       13       22       0.464003618         103       15       16       0.463067446         104       32       5       0.463067446         105       16       19       0.46336156         108       30       16       0.463303646         110       25       5       0.463233787         111       25       5       0.463064092         113       30       11       0.463038036         114       17       16       0.462781084	95	17	21	0.465326736
97       25       13       0.465300432         98       25       13       0.465300432         99       6       5       0.465054954         100       13       11       0.464746157         101       16       38       0.464583938         102       13       22       0.46408186         103       15       16       0.464076411         104       32       5       0.464003618         105       16       19       0.463967446         106       17       24       0.463303646         108       30       16       0.463303646         109       30       16       0.463233787         111       25       5       0.463233787         111       25       5       0.463038036         110       25       5       0.463233787         111       25       5       0.463038036         113       30       11       0.463038036         114       17       16       0.462781084	96	30	19	0.465324422
98       25       13       0.465300432         99       6       5       0.465054954         100       13       11       0.464746157         101       16       38       0.464583938         102       13       22       0.464408186         103       15       16       0.464076411         104       32       5       0.464003618         105       16       19       0.463967446         106       17       24       0.46303616         108       30       16       0.463303646         109       30       16       0.463233787         111       25       5       0.463233787         112       13       26       0.463038036         113       30       11       0.463038036         114       17       16       0.462781084	97	25	13	0.465300432
99         6         5         0.465054954           100         13         11         0.464746157           101         16         38         0.464583938           102         13         22         0.46408186           103         15         16         0.464076411           104         32         5         0.464003618           105         16         19         0.463967446           106         17         24         0.463075797           107         17         11         0.463303646           109         30         16         0.4630303646           110         25         5         0.463233787           111         25         5         0.46304092           113         30         11         0.463038036           114         17         16         0.462781084	98	25	13	0.465300432
100       13       11       0.464746157         101       16       38       0.464583938         102       13       22       0.464408186         103       15       16       0.464076411         104       32       5       0.464003618         105       16       19       0.463967446         106       17       24       0.463675797         107       17       11       0.463303646         109       30       16       0.463233787         110       25       5       0.463233787         111       25       5       0.463064092         113       30       11       0.4633038036         114       17       16       0.462781084	99	6	5	0.465054954
101       16       38       0.464583938         102       13       22       0.464408186         103       15       16       0.464076411         104       32       5       0.464003618         105       16       19       0.463967446         106       17       24       0.463036166         107       17       11       0.463303646         109       30       16       0.463303646         110       25       5       0.463033646         110       25       5       0.463233787         111       25       5       0.4630364092         113       30       11       0.463038036         114       17       16       0.462781084	100	13	11	0.464746157
102       13       22       0.464408186         103       15       16       0.464076411         104       32       5       0.464003618         105       16       19       0.463967446         106       17       24       0.46336156         108       30       16       0.463303646         109       30       16       0.463233787         111       25       5       0.463064092         112       13       26       0.463038036         114       17       16       0.462781084	101	16	38	0.464583938
103       15       16       0.464076411         104       32       5       0.464003618         105       16       19       0.463967446         106       17       24       0.463675797         107       17       11       0.463303646         109       30       16       0.463233787         110       25       5       0.463064092         111       25       5       0.463064092         113       30       11       0.463038036         114       17       16       0.462781084	102	13	22	0.464408186
104       32       5       0.464003618         105       16       19       0.463967446         106       17       24       0.463675797         107       17       11       0.463303646         108       30       16       0.463303646         109       30       16       0.463233787         110       25       5       0.463064092         111       25       5       0.46308036         112       13       26       0.463038036         114       17       16       0.462781084	103	15	16	0.464076411
105       16       19       0.463967446         106       17       24       0.463675797         107       17       11       0.463336156         108       30       16       0.463303646         109       30       16       0.463303646         110       25       5       0.463233787         111       25       5       0.463064092         113       30       11       0.463038036         114       17       16       0.462781084	104	32	5	0.464003618
106       17       24       0.463675797         107       17       11       0.463336156         108       30       16       0.463303646         109       30       16       0.463303646         110       25       5       0.463233787         111       25       5       0.463064092         112       13       26       0.463038036         114       17       16       0.462781084	105	16	19	0.463967446
107       17       11       0.463336156         108       30       16       0.463303646         109       30       16       0.463303646         110       25       5       0.463233787         111       25       5       0.463233787         111       25       5       0.463233787         112       13       26       0.463064092         113       30       11       0.463038036         114       17       16       0.462781084	106	17	24	0.463675797
108       30       16       0.463303646         109       30       16       0.463303646         110       25       5       0.463233787         111       25       5       0.463233787         112       13       26       0.463064092         113       30       11       0.463038036         114       17       16       0.462781084	107	17	11	0.463336156
109       30       16       0.463303646         110       25       5       0.463233787         111       25       5       0.463233787         112       13       26       0.463064092         113       30       11       0.463038036         114       17       16       0.462781084	108	30	16	0.463303646
110       25       5       0.463233787         111       25       5       0.463233787         112       13       26       0.463064092         113       30       11       0.463038036         114       17       16       0.462781084	109	30	16	0.463303646
111       25       5       0.463233787         112       13       26       0.463064092         113       30       11       0.463038036         114       17       16       0.462781084	110	25	5	0.463233787
112       13       26       0.463064092         113       30       11       0.463038036         114       17       16       0.462781084	111	25	5	0.463233787
113       30       11       0.463038036         114       17       16       0.462781084	112	13	26	0.463064092
114 17 16 0.462781084	113	30	11	0.463038036
	114	17	16	0.462781084

115	17	16	0.462781084
116	25	14	0.462730003
117	13	35	0.462584436
118	21	16	0.462499118
119	37	5	0.462364065
120	34	5	0.461380517
121	16	11	0.46129075
122	16	24	0.461242755
123	5	36	0.460912942
124	13	36	0.460811926
125	13	37	0.46063131
126	30	21	0.460506513
127	25	15	0.459976306
128	17	25	0.459520409
129	17	25	0.459520409
130	13	2	0.459238335
131	25	16	0.458803845
132	25	16	0.458803845
133	30	24	0.458773489
134	13	34	0.458591772
135	13	23	0.458472272
136	17	2	0.458317814
137	13	27	0.458166764
138	30	2	0.458037937
139	5	33	0.457827981
140	28	5	0.457505494
141	25	19	0.457300119
142	5	42	0.457013271
143	13	8	0.456921826

144         25         11         0.456916109           145         13         42         0.456592284           146         13         32         0.456564496           147         29         5         0.45623694           148         17         22         0.456161126           149         16         2         0.4555921579           150         17         8         0.455598375           152         13         40         0.455506724           153         30         8         0.455365744           154         5         41         0.455096719           155         13         39         0.45476396           156         17         35         0.45439959           157         16         36         0.4543742428           160         17         23         0.453742428           160         17         23         0.453353921           162         17         36         0.453324169           163         30         23         0.453329169           164         30         7         0.453329169           165         16         8         0.452291				
145       13       42       0.456592284         146       13       32       0.456564496         147       29       5       0.456564496         148       17       22       0.456161126         149       16       2       0.455921579         150       17       8       0.455750052         151       17       26       0.455398375         152       13       40       0.455365744         153       30       8       0.455365744         154       5       41       0.45539679         155       13       39       0.45476396         156       17       35       0.4543921104         159       16       26       0.453374248         160       17       23       0.453353921         161       17       7       0.453353921         162       17       36       0.45332145         163       30       23       0.45332145         164       30       7       0.45332145         165       16       8       0.452017617         166       30       26       0.452017617         167 <td>144</td> <td>25</td> <td>11</td> <td>0.456916109</td>	144	25	11	0.456916109
146       13       32       0.456564496         147       29       5       0.45623694         148       17       22       0.456161126         149       16       2       0.455921579         150       17       8       0.455598375         151       17       26       0.455598375         152       13       40       0.455461228         153       30       8       0.455096719         155       13       39       0.45476396         156       17       35       0.4543929104         158       16       22       0.453921104         159       16       26       0.453742428         160       17       23       0.453574309         161       17       7       0.45335921         162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452097024         166       30       26       0.453217617         166       30       26       0.452673928         167 </td <td>145</td> <td>13</td> <td>42</td> <td>0.456592284</td>	145	13	42	0.456592284
147       29       5       0.45623694         148       17       22       0.456161126         149       16       2       0.455921579         150       17       8       0.455750052         151       17       26       0.455398375         152       13       40       0.455365744         153       30       8       0.455365744         154       5       41       0.455096719         155       13       39       0.45476396         156       17       35       0.45439959         157       16       36       0.4533742428         158       16       22       0.4533742428         160       17       23       0.4533742428         160       17       23       0.453351921         161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.453297609         165       16       8       0.452917617         166       30       26       0.4532917617         166       30       26       0.452673928         1	146	13	32	0.456564496
148       17       22       0.456161126         149       16       2       0.455921579         150       17       8       0.455598375         151       17       26       0.455598375         152       13       40       0.455461228         153       30       8       0.455096719         155       13       39       0.45476396         156       17       35       0.45476396         156       17       35       0.45476396         158       16       22       0.453921104         159       16       26       0.45374208         160       17       23       0.453574309         161       17       7       0.45335321         162       17       36       0.453341156         163       30       23       0.453297609         164       30       7       0.453297609         165       16       8       0.452017617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169 <td>147</td> <td>29</td> <td>5</td> <td>0.45623694</td>	147	29	5	0.45623694
149       16       2       0.455921579         150       17       8       0.455750052         151       17       26       0.455598375         152       13       40       0.455461228         153       30       8       0.455365744         154       5       41       0.455096719         155       13       39       0.45476396         156       17       35       0.454359959         157       16       36       0.4543742428         160       17       23       0.453742428         160       17       23       0.45335921         161       17       7       0.453353921         162       17       36       0.45332145         163       30       23       0.45332145         164       30       7       0.452673928         165       16       8       0.452017617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.452097024         169       25       38       0.452097024         170 </td <td>148</td> <td>17</td> <td>22</td> <td>0.456161126</td>	148	17	22	0.456161126
150         17         8         0.455750052           151         17         26         0.455598375           152         13         40         0.455365744           153         30         8         0.455306719           154         5         41         0.455096719           155         13         39         0.45476396           156         17         35         0.454359959           157         16         36         0.4543921104           158         16         22         0.453574208           160         17         23         0.453742428           160         17         7         0.453353921           161         17         7         0.453353921           162         17         36         0.45332145           163         30         23         0.45332145           164         30         7         0.453297609           165         16         8         0.452917617           166         30         26         0.452673928           167         17         37         0.452647503           168         17         34         0.4526933	149	16	2	0.455921579
151       17       26       0.455598375         152       13       40       0.455461228         153       30       8       0.455365744         154       5       41       0.455096719         155       13       39       0.45476396         156       17       35       0.454539959         157       16       36       0.454405726         158       16       22       0.4533921104         159       16       26       0.453742428         160       17       23       0.453353921         161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         1	150	17	8	0.455750052
152       13       40       0.455461228         153       30       8       0.455365744         154       5       41       0.455096719         155       13       39       0.45476396         156       17       35       0.45476396         156       17       35       0.454405726         158       16       22       0.453921104         159       16       26       0.453742428         160       17       23       0.453353921         161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.453297609         165       16       8       0.452917617         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171<	151	17	26	0.455598375
153       30       8       0.455365744         154       5       41       0.455096719         155       13       39       0.45476396         156       17       35       0.45476396         156       17       35       0.45476396         157       16       36       0.454405726         158       16       22       0.453921104         159       16       26       0.453742428         160       17       23       0.45353921         161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.45262933         168       17       34       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978788 <td>152</td> <td>13</td> <td>40</td> <td>0.455461228</td>	152	13	40	0.455461228
154       5       41       0.455096719         155       13       39       0.45476396         156       17       35       0.454539959         157       16       36       0.454405726         158       16       22       0.453921104         159       16       26       0.453742428         160       17       23       0.453353921         161       17       7       0.453353921         162       17       36       0.453353921         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978788	153	30	8	0.455365744
155       13       39       0.45476396         156       17       35       0.454539959         157       16       36       0.454405726         158       16       22       0.453921104         159       16       26       0.453742428         160       17       23       0.453574309         161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.4533297609         165       16       8       0.452097024         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978788	154	5	41	0.455096719
156       17       35       0.454539959         157       16       36       0.454405726         158       16       22       0.453921104         159       16       26       0.453742428         160       17       23       0.453574309         161       17       7       0.453353921         162       17       36       0.453353921         163       30       23       0.453353921         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       37       0.452647503         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978788	155	13	39	0.45476396
157       16       36       0.454405726         158       16       22       0.453921104         159       16       26       0.453742428         160       17       23       0.453574309         161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	156	17	35	0.454539959
158       16       22       0.453921104         159       16       26       0.453742428         160       17       23       0.453574309         161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452647503         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	157	16	36	0.454405726
159       16       26       0.453742428         160       17       23       0.453574309         161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	158	16	22	0.453921104
160       17       23       0.453574309         161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	159	16	26	0.453742428
161       17       7       0.453353921         162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	160	17	23	0.453574309
162       17       36       0.453341156         163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	161	17	7	0.453353921
163       30       23       0.45332145         164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	162	17	36	0.453341156
164       30       7       0.453297609         165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	163	30	23	0.45332145
165       16       8       0.452917617         166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	164	30	7	0.453297609
166       30       26       0.452673928         167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	165	16	8	0.452917617
167       17       37       0.452647503         168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	166	30	26	0.452673928
168       17       34       0.45262933         169       25       38       0.452097024         170       30       25       0.451991066         171       30       25       0.451991066         172       16       7       0.451978798	167	17	37	0.452647503
169         25         38         0.452097024           170         30         25         0.451991066           171         30         25         0.451991066           172         16         7         0.451978798	168	17	34	0.45262933
170         30         25         0.451991066           171         30         25         0.451991066           172         16         7         0.451978798	169	25	38	0.452097024
17130250.4519910661721670.451978798	170	30	25	0.451991066
172 16 7 0.451978798	171	30	25	0.451991066
	172	16	7	0.451978798

173 $16$ $35$ $0.451837711$ $174$ $25$ $2$ $0.45144753$ $175$ $25$ $21$ $0.451259305$ $176$ $16$ $37$ $0.451053463$ $177$ $30$ $22$ $0.45079755$ $178$ $23$ $16$ $0.450655766$ $179$ $25$ $7$ $0.450123176$ $180$ $25$ $24$ $0.450117136$ $181$ $17$ $27$ $0.450091837$ $182$ $17$ $32$ $0.449604669$ $183$ $16$ $34$ $0.449432102$ $184$ $16$ $42$ $0.449311923$ $185$ $17$ $42$ $0.448864586$ $186$ $25$ $8$ $0.447698177$ $187$ $17$ $40$ $0.447424374$ $189$ $16$ $27$ $0.447302278$ $190$ $30$ $38$ $0.446401037$ $192$ $25$ $26$ $0.445035837$ $193$ $25$ $23$ $0.444469894$ $197$ $25$ $22$ $0.442298894$ $197$ $25$ $22$ $0.442301326$ $198$ $30$ $31$ $0.441184503$ $199$ $30$ $18$ $0.439744592$ $200$ $25$ $42$ $0.438817696$ $201$ $30$ $3$ $0.437924211$				
174         25         2         0.45144753           175         25         21         0.451259305           176         16         37         0.451053463           177         30         22         0.45079755           178         23         16         0.450655766           179         25         7         0.450123176           180         25         24         0.45013176           181         17         27         0.450091837           182         17         32         0.449604669           183         16         34         0.449311923           185         17         42         0.448864586           186         25         8         0.447698177           187         17         40         0.447431316           188         16         40         0.447424374           189         16         27         0.447302278           190         30         38         0.446420502           191         16         39         0.4446401037           192         25         26         0.443035837           193         25         23         0.444	173	16	35	0.451837711
175         25         21         0.451259305           176         16         37         0.451053463           177         30         22         0.45079755           178         23         16         0.450655766           179         25         7         0.450123176           180         25         24         0.450117136           181         17         27         0.450091837           182         17         32         0.449604669           183         16         34         0.449432102           184         16         42         0.449604669           183         16         34         0.449432102           184         16         42         0.449604669           185         17         42         0.448864566           186         25         8         0.447698177           187         17         40         0.447424374           188         16         40         0.447424374           189         16         27         0.444601037           190         30         38         0.446401037           192         25         26         0.4	174	25	2	0.45144753
176         16         37         0.451053463           177         30         22         0.45079755           178         23         16         0.450655766           179         25         7         0.450123176           180         25         24         0.45017136           181         17         27         0.450091837           182         17         32         0.449604669           183         16         34         0.449432102           184         16         42         0.449311923           185         17         42         0.448864586           186         25         8         0.447698177           187         17         40         0.447424374           188         16         40         0.447424374           189         16         27         0.44760817           190         30         38         0.446401037           191         16         39         0.446401037           192         25         26         0.44303189           193         25         23         0.444468984           194         30         27         0.4440	175	25	21	0.451259305
177         30         22         0.45079755           178         23         16         0.450655766           179         25         7         0.450123176           180         25         24         0.45017136           181         17         27         0.450091837           182         17         32         0.449604669           183         16         34         0.449432102           184         16         42         0.449311923           185         17         42         0.448864586           186         25         8         0.447698177           187         17         40         0.447431316           188         16         40         0.447424374           189         16         27         0.44700278           190         30         38         0.446420502           191         16         39         0.446401037           192         25         26         0.443689919           193         25         23         0.444466987           193         25         36         0.443689919           194         30         27         0.444	176	16	37	0.451053463
178       23       16       0.450655766         179       25       7       0.450123176         180       25       24       0.450117136         181       17       27       0.450091837         182       17       32       0.449604669         183       16       34       0.449311923         184       16       42       0.449311923         185       17       42       0.448864586         186       25       8       0.447698177         187       17       40       0.447424374         188       16       40       0.447424374         189       16       27       0.44601037         190       30       38       0.44660887         191       16       39       0.446401037         192       25       26       0.44305887         193       25       23       0.444466987         194       30       27       0.442498894         197       25       22       0.442498894         197       25       22       0.4438817696         198       30       31       0.441184503 <td< td=""><td>177</td><td>30</td><td>22</td><td>0.45079755</td></td<>	177	30	22	0.45079755
179       25       7       0.450123176         180       25       24       0.450117136         181       17       27       0.450091837         182       17       32       0.449604669         183       16       34       0.449432102         184       16       42       0.449311923         185       17       42       0.448864586         186       25       8       0.447698177         187       17       40       0.447431316         188       16       40       0.447424374         189       16       27       0.447002278         190       30       38       0.446401037         192       25       26       0.445035837         193       25       23       0.44466987         194       30       27       0.444012965         195       25       36       0.443689919         196       30       4       0.442498894         197       25       22       0.4420301326         198       30       31       0.441184503         199       30       18       0.439744592 <t< td=""><td>178</td><td>23</td><td>16</td><td>0.450655766</td></t<>	178	23	16	0.450655766
180       25       24       0.450117136         181       17       27       0.450091837         182       17       32       0.449604669         183       16       34       0.449432102         184       16       42       0.449311923         185       17       42       0.448864586         186       25       8       0.447698177         187       17       40       0.447431316         188       16       40       0.447424374         189       16       27       0.447302278         190       30       38       0.446401037         192       25       26       0.4445035837         193       25       23       0.444466987         194       30       27       0.444012965         195       25       36       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211 <td>179</td> <td>25</td> <td>7</td> <td>0.450123176</td>	179	25	7	0.450123176
181       17       27       0.450091837         182       17       32       0.449604669         183       16       34       0.449432102         184       16       42       0.449311923         185       17       42       0.448864586         186       25       8       0.447698177         187       17       40       0.447431316         188       16       40       0.447424374         189       16       27       0.447002278         190       30       38       0.446420502         191       16       39       0.446401037         192       25       26       0.4435035837         193       25       23       0.444466987         194       30       27       0.444012965         195       25       36       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211 <td>180</td> <td>25</td> <td>24</td> <td>0.450117136</td>	180	25	24	0.450117136
182       17       32       0.449604669         183       16       34       0.449432102         184       16       42       0.449311923         185       17       42       0.448864586         186       25       8       0.447698177         187       17       40       0.447431316         188       16       40       0.447424374         189       16       27       0.446401037         190       30       38       0.446401037         191       16       39       0.446401037         192       25       26       0.4435035837         193       25       23       0.4444012965         194       30       27       0.444012965         195       25       36       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	181	17	27	0.450091837
183       16       34       0.449432102         184       16       42       0.449311923         185       17       42       0.448864586         186       25       8       0.447698177         187       17       40       0.447431316         188       16       40       0.447424374         189       16       27       0.447302278         190       30       38       0.446401037         191       16       39       0.446401037         192       25       26       0.443035837         193       25       23       0.444012965         194       30       27       0.444012965         195       25       36       0.442498894         197       25       22       0.44201326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	182	17	32	0.449604669
184       16       42       0.449311923         185       17       42       0.448864586         186       25       8       0.447698177         187       17       40       0.447431316         188       16       40       0.447431316         189       16       27       0.447302278         190       30       38       0.446401037         191       16       39       0.446401037         192       25       26       0.445035837         193       25       23       0.44466987         194       30       27       0.44208894         195       25       36       0.443689919         196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817666         201       30       3       0.437924211	183	16	34	0.449432102
185       17       42       0.448864586         186       25       8       0.447698177         187       17       40       0.447431316         188       16       40       0.447424374         189       16       27       0.447302278         190       30       38       0.446401037         191       16       39       0.446401037         192       25       26       0.445035837         193       25       23       0.444012965         194       30       27       0.442498894         195       25       36       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	184	16	42	0.449311923
186       25       8       0.447698177         187       17       40       0.447431316         188       16       40       0.447424374         189       16       27       0.447302278         190       30       38       0.446420502         191       16       39       0.446401037         192       25       26       0.445035837         193       25       23       0.444466987         194       30       27       0.4420502         195       25       36       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	185	17	42	0.448864586
187       17       40       0.447431316         188       16       40       0.447424374         189       16       27       0.447302278         190       30       38       0.446420502         191       16       39       0.446401037         192       25       26       0.445035837         193       25       23       0.4464012965         194       30       27       0.444012965         195       25       36       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	186	25	8	0.447698177
188       16       40       0.447424374         189       16       27       0.447302278         190       30       38       0.446420502         191       16       39       0.446401037         192       25       26       0.445035837         193       25       23       0.4444012965         194       30       27       0.444012965         195       25       36       0.442498894         196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	187	17	40	0.447431316
189       16       27       0.447302278         190       30       38       0.446420502         191       16       39       0.446401037         192       25       26       0.445035837         193       25       23       0.444466987         194       30       27       0.444012965         195       25       36       0.442498894         196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	188	16	40	0.447424374
190       30       38       0.446420502         191       16       39       0.446401037         192       25       26       0.445035837         193       25       23       0.444466987         194       30       27       0.444012965         195       25       36       0.442498894         196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	189	16	27	0.447302278
191       16       39       0.446401037         192       25       26       0.445035837         193       25       23       0.444466987         194       30       27       0.444012965         195       25       36       0.443689919         196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	190	30	38	0.446420502
192       25       26       0.445035837         193       25       23       0.444466987         194       30       27       0.444012965         195       25       36       0.443689919         196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	191	16	39	0.446401037
193       25       23       0.444466987         194       30       27       0.444012965         195       25       36       0.443689919         196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	192	25	26	0.445035837
194       30       27       0.444012965         195       25       36       0.443689919         196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	193	25	23	0.444466987
195       25       36       0.443689919         196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	194	30	27	0.444012965
196       30       4       0.442498894         197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	195	25	36	0.443689919
197       25       22       0.442301326         198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	196	30	4	0.442498894
198       30       31       0.441184503         199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	197	25	22	0.442301326
199       30       18       0.439744592         200       25       42       0.438817696         201       30       3       0.437924211	198	30	31	0.441184503
200         25         42         0.438817696           201         30         3         0.437924211	199	30	18	0.439744592
201 30 3 0.437924211	200	25	42	0.438817696
	201	30	3	0.437924211

202       25       35       0.437828917         203       25       34       0.437688685         204       25       37       0.437076831         205       30       20       0.436962621         206       25       31       0.436040908         207       30       10       0.435822749         208       25       40       0.4353366
203       25       34       0.437688685         204       25       37       0.437076831         205       30       20       0.436962621         206       25       31       0.436040908         207       30       10       0.435822749         208       25       40       0.4353366
204       25       37       0.437076831         205       30       20       0.436962621         206       25       31       0.436040908         207       30       10       0.435822749         208       25       40       0.4353366
205       30       20       0.436962621         206       25       31       0.436040908         207       30       10       0.435822749         208       25       40       0.4353366
206         25         31         0.436040908           207         30         10         0.435822749           208         25         40         0.4353366
207         30         10         0.435822749           208         25         40         0.4353366
208 25 40 0.4353366
209 25 27 0.434892645
210 30 29 0.433026623

Gene	Primer
	F-'GGTCTTTCGCACAATCGCTC'
cath1-1	R-'TTCAAACCACTCATCGCCGT`
	F-'GCTGTGTCATCCGCTCATCA'
cath1-2	R-`TTGGAGGCAAACTTCAGCGA`
	F-`CCAAAACTTCCGCGAATCCA`
catn1-3	R-'AGTGGTTAGCAGGTTTGGCT'
	F-'GCTGTGTCATCCGCTCATCA'
catn1-4	R-`TTGGAGGCAAACTTCAGCGA`
outh 1 5	F-'ACATACCTTGATGCCGGACC'
cum1-5	R-'ACCCCAGTCTTCTCCCCATT'
	F-`CTCACCAGGAGTGTTGCGAT`
cain1-0	R-`CATCGGGTGGGAGTTGTGTT`
Che hudua	F-`CAACGCTGAAAAACGGGCAA`
Giy-nyaro	R-`TCCGTAAAGGCTGCACCAAA`
O Che hudro 20	F-'TAACCCCCGGATCTCATCGT'
0-61y-nyar050	R-`AGCCAGCCGGATCTTTGATT`
aan	F-`CCTGCGATGTGGACTGCTTA`
usp	R-`GCGGCTGATGTAAGTGTTCG`
ala 6	F-'GCTGTTTTCAGTATCGGCGG'
<i>e10-0</i>	R-`GCGGAGAACCAGGAAAATGG`
	F-'AATATCGTGGCCCCTGAACC'
ALDE2	R-'GCATCCTTTGCAGCCTTGAC'
Chn-sodh ?	F-`TGGTTTTGGTGTCATTGCCG`
Con-soun-2	R-`TCGTCCAGCGTCTCATTCAG`
acetyl_CoA	F-`TCGCCAAAAAGGTGGGCTAT`
uceiyi-COA	R-`ATGGCGGGGGATGTTGATGTT`
acsf2	F-`GGAAAGTGGGAGTGTCAGCA`

Table S6 Primers used in this study.

	R-`GATGTTTGAGGTCGGGGAGG`
fa o 5	F-`AGTCGAGACCGAACCCTTTC`
jues	R-`TCTGATCCAAGTGGGGGTTG`
12	F-'TTGAGCCCTACAACTCCGTG'
mec-12	R-`AAGCGGTAATGGAGCTGACC`

Sample dendrogram and trait heatmap



Figure S1. Clustering dendrogram of samples based on their Euclidean distance



Figure S2. Analysis of network topology with various soft-thresholding powers. The left panel shows the scale-free fit index (y-axis) as a function of the soft-thresholding power (x-axis). The right panel displays the mean connectivity (degree, y-axis) as a function of the soft-thresholding power (x-axis). The red line indicates scale-free fit index is equal to 8.5.





Figure S3. Visualization of the gene network using a heatmap plot. The heatmap depicts the Topological Overlap Matrix (TOM) among 400 genes in the analysis. Light color represents low overlap and progressively darker red color represents higher overlap. Blocks of darker colors along the diagonal are the modules. The gene dendrogram and module assignment are also shown along the left side and the top.



Figure S4 Module eigengene expression profile.

## Gene significance across modules, p-value=0

![](_page_26_Figure_1.jpeg)

Figure S5. Bar plot of module significance defined as the mean gene significance across all genes in the module to the DJ3-lab trait. The magenta module is the most promising.

![](_page_27_Figure_0.jpeg)

Figure S6. GO enrichment analysis (Biology Process) of the genes in the pink and magenta modules. A: Module pink. B: Module magenta.

![](_page_28_Figure_0.jpeg)

Figure S7. GO enrichment analysis (Cellular Component) of the genes in the pink and magenta modules. A: Module pink. B: Module magenta.

![](_page_29_Figure_0.jpeg)

Figure S8. GO enrichment analysis (Molecular Function) of the genes in the pink and magenta modules. A: Module pink. B: Module magenta.

![](_page_30_Figure_0.jpeg)

Figure S9. KEGG enrichment analysis of the genes in the pink and magenta modules. A: Module pink. B: Module magenta.

![](_page_31_Figure_0.jpeg)

Figure S10. Visualization of pink module (weight value>0.3). Prefuse Force Directed Layout was applied based on weight value. Size of the dots represents IC (from17.3445 to 159.5326). Deep pink highlights the top 30 hub genes. Red highlights 6 hub genes in the pink module with extremely high homology to cysteine protease family cathepsin 1.