

Buneeva O.A., Kopylov A.T., Zgoda V.G., Medvedev A.E., The effect of deprenyl and isatin administration to mice on the proteomic profile of liver isatin-binding proteins, Biomeditsinskaya khimiya, 2018, vol: 64(4), 354-359. DOI: 10.18097/PBMC20186404354

Supplementary Table 1. Liver isatin-binding proteins common for all groups of mice (control, isatin-treated, deprenyl-treated)

No	Protein name	Database Accession Number	MW Da	pI	No of peptides	Sequene coverage, %	Mill Search score
I Proteins/enzymes involved into energy generation and carbohydrate metabolism (n=15)							
1	Pyruvate carboxylase, mitochondrial precursor (EC 6.4.1.1)	Q05920	129685.3	6.25	11	15	162.75
2	ATP synthase beta chain, mitochondrial precursor (EC 3.6.3.14)	P56480	56300.8	5.19	11	36	154.99
3	Aldehyde dehydrogenase, mitochondrial precursor (EC 1.2.1.3)	P47738	56537.8	7.53	7	28	106.96
4	2-oxoglutarate dehydrogenase E1 component (EC 1.2.4.2)	Q60597	116118.3	6.52	5	7	66.23
5	L-lactate dehydrogenase A chain (EC 1.1.1.27)	P06151	36367.6	7.77	5	23	62.88
6	ATP-citrate synthase (EC 2.3.3.8)	Q91V92	119.728	7.14	4	5	49.52
7	Electron transfer flavoprotein alpha subunit, mitochondrial precursor	Q99LC5	35039.6	8.68	3	18	47.45
8	Alcohol dehydrogenase 1 (EC 1.1.1.1)	P00329	39640.5	8.43	3	6	39.55
9	Aldehyde dehydrogenase family 7 member A1	Q9DBF1	55513.8	5.99	3	8	37.14
10	Triosephosphate isomerase	P17751	26581.6	7.09	2	11	32.65
11	2-oxoisovalerate dehydrogenase alpha subunit (EC 1.2.4.4), mitochondrial precursor	P50136	50370.9	8.14	2	8	29.18
12	Cytochrome b ₅ reductase	Q9DCN2	15109.9	4.96	2	24	27.73
13	Fumarate hydratase mitochondrial	P97807	54371.1	9.11	2	6	28.69
14	Dimethylglycine dehydrogenase mitochondrial	Q9DBT9	97255.3	7.69	2	3	26.32
15	ATP synthase delta chain, mitochondrial precursor	Q9D3D9	17600.1	5.03	8	1	19.35

II Proteins involved into lipid metabolism (n =11)							
1	Very long chain specific acyl-CoA dehydrogenase, mitochondrial precursor (EC 1.3.99) (VLCAD)	P50544	70875.9	8.91	7	19	142.86
2	Liver carboxylesterase 3A precursor (EC 3.1.1.1)	Q63880	61510.0	5.89	4	15	56.45
3	Dehydrogenase/reductase SDR family member 4 (EC 1.1.1.184)	Q99LB2	27754.2	9.23	4	20	53.50
4	Hydroxymethylglutaryl-CoA synthase	P54869	56823.1	8.65	4	12	50.34
4	Fatty acid synthase (EC 2.3.1.85)	P19096	272429.8	6.13	4	5	49.52
5	Acyl-coenzyme A oxidase 1, peroxisomal (EC 1.3.3.6)	Q9R0H0	74634.1	8.74	2	4	29.59
6	2,4 dienoyl-CoA reductase, mitochondrial precursor (EC	Q9CQ62	36214.0	9.10	2	10	29.16
7	Peroxisomal multifunctional enzyme type 2	Q99MZ7	79351.0	8.77	2	3	28.45
8	Hydroxymethylglutaryl CoA lyase, mitochondrial precursor (EC 4.1.3.4)	P38060	34161.0	8.55	2	7	28.38
9	Liver carboxylesterase 1 precursor (EC 3.1.1.1)	Q63880	62680.2	5.64	2	7	27.31
10	Carboxylesterase 3 precursor (EC 3.1.1.1)	Q8VCT4	61788.1	6.17	2	8	26.32
11	Peroxisomal trans-2-enoyl-CoA reductase (EC 1.3.1.38)	P51660	32410.4	8.50	1	4	16.28
III Proteins involved into metabolism of amino acids nucleotides and related processes (n=15)							
1	Carbamoyl-phosphate synthase [ammonia], mitochondrial precursor (EC 6.3.4.16)	Q8C196	164618.9	6.49	28	26	404.48
2	10-formyltetrahydrofolate dehydrogenase (EC 1.5.1.6)	Q8K009	98709.7	5.63	9	16	135.31
3	Glutaryl-CoA dehydrogenase, mitochondrial precursor (EC 1.3.99.7)	Q60759	48647.1	8.82	7	30	109.85
4	Methionine adenosyltransferase (S-adenosylmethionine synthetase) isoform type-1 (EC 2.5.1.6)	Q91X83	43508.9	5.52	7	27	107.75

5	3-hydroxyanthranilate 3,4-dioxygenase (EC 1.13.11.6)	Q78JT3	32804.5	6.10	5	25	88.78
6	Adenosylhomocysteinase (EC 3.3.1.1)	P50247	47557.3	6.08	7	21	86.75
7	Glycine N-methyltransferase (EC 2.1.1.20)	Q9QXF8	32544.2	7.20	5	22	78.85
8	Arginase-1 (EC 3.5.3.1)	Q61176	34808.0	6.51	2	10	70.58
9	Glutamate dehydrogenase 1, mitochondrial precursor (EC 1.4.1.3)	P26443	61337.1	8.05	5	13	69.40
10	Betaine-homocysteine S-methyltransferase (EC 2.1.1.5)	O35490	45020.8	8.01	4	19	58.19
11	Formimidoyltransferase-cyclodeaminase	Q91XD4	58938.9	5.79	3	10	46.66
12	Sarcosin dehydrogenase 1, mitochondrial precursor (EC 1.5.99.1)	Q99LB7	101682.8	6.28	2	3	27.96
13	Glutaminase liver isoform mitochondrial	Q571F8	66366.3	7.59	2	5	27.12
14	Argininosuccinate lyase						14
15	Aspartate aminotransferase, mitochondrial precursor (EC 2.6.1.1)	P05202	47411.6	9.13	2	8	22.15

IV Proteins involved into cytoskeleton formation and exocytosis/trafficking (n= 4)

1	Gamma-actin	P63268	41793.1	5.31	3	9	39.52
2	Vitronectin precursor	P29788	54849.3	5.67	2	6	30.07
3	Carbonic anhydrase 3 (EC 4.2.1.1)	P16015	29235.2	6.97	2	14	29.45
4	Radixin	P26043	68601.2	5.85	2	4	23.83

V Proteins involved into regulation of gene expression, cell division and differentiation (n=19)

1	Heterogeneous nuclear ribonucleoprotein A2/B1 (hnRNP A2 / hnRNP B1)	O88569	35993.1	8.67	10	29	141.49
2	Heterogeneous nuclear ribonucleoprotein A3	Q8BG05	39652.2	9.09	8	24	125.30
3	40S ribosomal protein S7	P62082	22127.0	10.09	7	30	102.84
4	Staphylococcal nuclease domain-containing protein 1	Q78PY7	102088.7	7.08	5	8	70.17

5	APOBEC 1 complementation factor	Q5YD48	65725.3	8.81	5	11	59.42
6	Heterogeneous nuclear ribonucleoprotein Q	Q7TMK9	69633.0	8.68	4	11	58.92
7	60S ribosomal protein L22	P67984	14627.8	9.22	3	40	51.03
8	Elongation factor 1-alpha 1 (EF-1-alpha-1)	P10126	50114.1	9.10	4	14	47.89
9	60S ribosomal protein L10a	P53026	24785.4	9.98	3	15	44.43
11	40S ribosomal protein S15a	P62245	14708.4	10.14	3	24	42.31
10	60S ribosomal protein L12	P35979	17804.7	9.48	3	27	40.00
11	60S ribosomal protein L23a	P62751	17695.1	10.44	3	23	36.50
12	40S ribosomal protein S8	P62242	24074.1	10.32	2	13	35.12
13	40S ribosomal protein S4, X isoform	P62702	29466.7	10.16	2	11	32.05
14	60S ribosomal protein L7a	P12970	29845.5	10.56	2	13	30.74
15	60S ribosomal protein L9	P51410	21881.5	9.96	2	15	30.65
16	Heterogeneous nuclear ribonucleoprotein K	P61979	50976.5	5.39	2	6	30.27
17	Histone H1.3	P43277	21968.4	11.03	2	9	26.66
18	Elongation factor 1 beta	O70251	24562.6	4.53	2	12	25.98
19	Dihydropyrimidinase	Q9EQF5	56725.1	6.74	2	6	22.85
VI Antioxidant enzymes and protective proteins (n=11)							
1	Heat shock cognate 71 kDa protein	P63017	72422.4	5.07	9	16	195.39
2	Stress-70 protein, mitochondrial precursor	P38647	73528.7	5.91	7	15	104.85
3	Selenium-binding protein 2	Q63836	52628.3	5.78	6	19	90.65
4	Phosphotriesterase-related protein	Q60866	39218.4	6.18	5	23	70.71
5	Glutathione S-transferase P 1 (EC 2.5.1.18)	P19157	23478.1	8.13	4	30	61.23
6	Peroxiredoxin-6 (EC 1.11.1.15)	O08709	24739.6	5.72	3	22	48.80
7	Catalase (EC 1.11.1.6)	P24270	59634.4	7.72	4	10	47.07
8	Peroxiredoxin-1 (EC 1.11.1.15)	P35700	22176.6	8.26	3	14	32.46
9	Thioredoxin (ALT-derived factor)	P10639	11544.3	4.80	2	23	26.96
10	Superoxide dismutase Mn, mitochondrial precursor (EC 1.15.1.1)	P09671	24603.1	8.80	2	12	26.02
11	Epoxide hydrolase 2	P34914	62515.7	5.86	2	5	20.57

Each protein listed in Supplementary Tables 1 and 2 was identified at least in three independent experiments, each of which employed independent liver samples as well as their chromatographic and proteomic processing. Since the proteins listed in these tables have been identified in liver samples of three groups of animals only the highest search score value is shown.

Supplementary Table 2. Mouse liver isatin-binding proteins common for isatin, and deprenyl treated mice

No	Protein name	Database Accession Number	MW Da	pI	No of peptides	Sequence coverage, %	Mill Search score
I Proteins/enzymes involved into energy generation and carbohydrate metabolism (n=2)							
1	UDP-glucose: glycoprotein glycosyltransferase 1 precursor		173910.7	5.38	2	3	25.00
2	Ribose-phosphate pyrophosphokinase 1		34717.3	6.57	2	8	24.99
IV Proteins involved into cytoskeleton formation and exocytosis/trafficking (n= 1)							
1	Protein NipSnap1		33363.4	9.48	2	13	28.88
V Proteins involved into regulation of gene expression, cell division and differentiation (n=11)							
1	T-complex protein 1 subunit theta		59424.6	5.44	2	4	30.11
2	Nucleolin		76592.2	4.69	6	11	80.81
3	60S ribosomal protein L3		45993.0	10.22	2	6	22.08
4	60S ribosomal protein L6		33378.6	10.69	4	12	38.06
5	60S ribosomal protein L14		23433.0	11.03	2	11	27.89
6	60S ribosomal protein L15		24015.0	11.62	3	14	36.90
7	60S ribosomal protein L31		14462.9	10.54	2	19	24.14
8	40S ribosomal protein S15a		14708.4	10.14	3	24	42.31
9	40S ribosomal protein SA		32587.9	4.74	2	10	35.28
10	TAR DNA-binding protein 43		44548.0	6.26	3	9	40.46
11	Polypyrimidine tract -binding protein		56478.4	8.46	3	13	40.05
VI Antioxidant enzymes and protective proteins (n = 1)							
1	Thioredoxin dependent peroxide reductase mitochondrial precursor		28127.2	7.15	2	9	24.15

