

## ДОПОЛНИТЕЛЬНЫЕ МАТЕРИАЛЫ

Бунеева О.А., Катица И.Г., Казиева Л.Ш., Вавилов Н.Э., Згода В.Г., Медведев А.Е. (2024)  
Отсроченное действие ротенона на относительное содержание изатин-связывающих белков мозга у крыс с экспериментальным паркинсонизмом. Биомедицинская химия, **70(1)**, 25-32.

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Таблица 1S. Белки мозга крыс, количество которых меняется через 5 дней после курсового (7 дней) введения животным ротенона (по сравнению с контролем).

№	№ по базе Uniprot	Ген по Uniprot	Название белка по Uniprot	Функции	Локализация	-Log(P-значение)	Кратность изменения
1	A0A8L2QDJ0	<i>Cox5a</i>	Cytochrome c oxidase subunit 5A, mitochondrial	1	Mch	4,468	3,292
2	A0A8I6A8X0	<i>Cox6b1</i>	Cytochrome c oxidase subunit VIb polypeptide 1, pseudogene 1	1	Mch	1,818	2,925
3	P63045	<i>Vamp2</i>	Vesicle associated membrane protein 2B	2	S, Ve	5,231	2,499
4	P62775	<i>Mtpn</i>	Myotrophin	3	C, N	2,370	2,477
5	A0A8I5Y1E2	<i>Add1</i>	Alpha-adducin	2	PM, M, C	1,117	2,161
6	Q6AYS2	<i>Sfxn1</i>	Sidoreflexin	2	Mch, M	2,154	2,157
7	A0A8I6AN99	<i>Rps27a</i>	Ubiquitin-ribosomal protein eS31 fusion protein	6	N	3,387	2,083
8	Q7M079	<i>Status unreviewed</i>	Calcium-binding protein 4	3	S, M	1,859	2,073
9	Q8R491	<i>Ehd3</i>	EH domain-containing protein 3	2	M	1,205	1,848
10	B0K023	<i>Rpl7</i>	Large ribosomal subunit protein uL30	6	C	2,047	1,811

11	A0A8I5ZX F4	<i>Hsph1</i>	Heat shock protein 105 kDa	4	C	2,691	1,803
12	Q63754	<i>Sncb</i>	Beta-synuclein	3	C	2,593	1,793
13	A0A0G2K6 57	<i>Opcml</i>	Opioid- binding protein/cell adhesion molecule	4	PM, M	2,854	1,784
14	P70580	<i>Pgrmc1</i>	Membrane- associated progesterone receptor component 1	3	M	2,618	1,775
15	A0A8L2PZ F0	<i>Napa</i>	Alpha-soluble NSF attachment protein	2	M	1,293	1,740
16	F2Z3Q8	<i>Kpnb1</i>	Karyopherin subunit beta 1	3	N, C	1,588	1,723
17	A0A8I6GDI 3	<i>Actn1</i>	Alpha-actinin- 1	2	PM, M, C	1,151	1,722
18	A9UMV9	<i>Ndufa7</i>	NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 7	1	Mch	1,855	1,715
19	Q9QYU4	<i>Crym</i>	Ketimine reductase mu- crystallin	3	C	3,259	1,694
20	A0A1E1ER K2	<i>Stx1a</i>	Syntaxin-1A	3	S, PM, Ve	2,300	1,676
21	B6DYP8	<i>Gsta1</i>	Glutathione S- transferase	4	C, Mch, ER, N	2,116	1,662
22	A0A8I6AG 01	<i>Nedd8</i>	NEDD8	6	N, C	3,772	1,661
23	A0A0G2K8 L7	<i>Cacna2 d1</i>	Voltage-gated calcium channel alpha2/delta-1 subunit	2	M	2,844	1,646
24	B0BNE6	<i>Ndufs8</i>	NADH dehydrogenase [ubiquinone] iron-sulfur protein 8, mitochondrial	1	Mch	1,948	1,628
25	P08081	<i>Clta</i>	Clathrin light chain A	2	M, C, Ve	2,008	1,622

26	P31000	<i>Vim</i>	Vimentin	2	C, PM, M, N	1,778	1,611
27	A0A8I6A3S4	<i>Mog</i>	Myelin-oligodendrocyte glycoprotein	3	M	1,533	1,601
28	O35112	<i>Alcam</i>	CD166 antigen	3	PM, S	1,855	1,589
29	Q64542	<i>Atp2b4</i>	Plasma membrane calcium-transporting ATPase 4	2	PM	1,747	1,583
30	Q7TQ25	<i>Omg</i>	Oligodendrocyte-myelin glycoprotein	3	M, S	1,329	1,576
31	Q02253	<i>Aldh6a1</i>	Methylmalonate-semialdehyde/malonate-semialdehyde dehydrogenase [acylating], mitochondrial	6	Mch	1,947	1,566
32	F7FPP7	<i>Epb41l3</i>	Erythrocyte membrane protein band 4,1-like 3	2	PM, S	1,657	1,562
33	Q5XIT1	<i>Mapre3</i>	Microtubule-associated protein RP/EB family member 3	2	C	2,595	1,538
34	Q6PAH0	<i>ApoE</i>	Apolipoprotein E	7	E, Ve	2,645	1,523
35	Q63768	<i>Crk</i>	Adapter molecule crk	3	C, PM	1,961	1,520
36	Q68FQ0	<i>Cct5</i>	T-complex protein 1 subunit epsilon	4	C	1,699	1,518
37	D4ACZ4	<i>Epb41l1</i>	Erythrocyte membrane protein band 4,1-like 1	2	C	1,757	1,513
38	Q8CFN2	<i>Cdc42</i>	Cell division control protein 42 homolog	5	C, M, PM,	1,836	1,502
39	P0C1X8	<i>Aak1</i>	AP2-associated	3	PM, M, S	1,672	1,487

			protein kinase 1				
40	A0A140TA A1	<i>Igsf8</i>	Immunoglobulin superfamily, member 8	4	M, S	1,483	1,477
41	D4A8H8	<i>Cyfp1</i>	Cytoplasmic FMR1-interacting protein	3	S	1,590	1,473
42	Q9JHU0	<i>Dpysl5</i>	Dihydropyrimidinase-related protein 5	3	C	2,809	1,472
43	D4ABN3	<i>Synj1</i>	phosphoinositide 5-phosphatase	3	C, M	2,678	1,472
44	B7X6I3	<i>Cend1</i>	C38 protein	5	Mch, Ve, M	1,561	1,462
45	P97546	<i>Nptn</i>	Neuroplastin	3	PM, S	2,546	1,460
46	A0A8I6A3 D0	<i>Ivd</i>	Isovaleryl-CoA dehydrogenase, mitochondrial	6	Mch	1,611	1,459
47	A0A292G0 W2	<i>Phf24</i>	Gai-interacting protein	3	M	1,765	1,454
48	A0A8I6GI W5	<i>Capzb</i>	F-actin-capping protein subunit beta	2	C	1,676	1,448
49	P37377	<i>Snca</i>	Alpha-synuclein	3	S, C, M, N	2,419	1,444
50	P60881	<i>Snap25</i>	Synaptosomal-associated protein 25 t-SNARE	3	S, PM, C	1,598	1,443
51	Q5RJQ4	<i>Sirt2</i>	NAD-dependent protein deacetylase sirtuin-2	5	N, C, M	1,557	1,441
52	A0A8I6ANI 2	<i>Stip1</i>	Stress-induced-phosphoprotein 1	4	C	1,876	1,434
53	A0A1W2Q6 M6	<i>Nrcam</i>	Neuronal cell adhesion molecule	2	M	1,957	1,434
54	Q6AY84	<i>Scrn1</i>	Secernin-1	2	C	1,783	1,429
55	Q9EQX9	<i>Ube2n</i>	Ubiquitin-conjugating enzyme E2 N	6	C, N	1,524	1,428

56	A0A8I6AV C9	<i>Akr1a1</i>	Aldo-keto reductase family 1 member A1	4	C, M, PM	2,873	1,419
57	A0A0G2KA G3	<i>Atp6v1 g2</i>	V-type proton ATPase subunit G	2	S, M	1,583	1,412
58	A0A8I5YB U1	<i>Gdi2</i>	Rab GDP dissociation inhibitor beta	3	C, M	2,436	1,397
59	Q9JJ19	<i>Nherfl</i>	Na(+)/H(+) exchange regulatory cofactor NHE- RF1	3	C, PM	1,547	1,387
60	A0A8L2U MI0	<i>Phgdh</i>	D-3- phosphoglycer ate dehydrogenase	6	Mch	1,726	1,387
61	P38983	<i>Rpsa</i>	Small ribosomal subunit protein uS2	6	C	1,541	1,383
62	A0A8L2R8 83	<i>Cap2</i>	Adenylyl cyclase- associated protein	3	PM	2,318	1,370
63	A0A8I6A2 Y8	<i>Nsfl1c</i>	NSFL1 cofactor	2	N	1,614	1,364
64	P01830	<i>Thy1</i>	Thy-1 membrane glycoprotein	2	PM, M	1,720	1,362
65	Q00981	<i>Uchl1</i>	Ubiquitin carboxyl- terminal hydrolase isozyme L1	6	C, ER, N, Mch, PM	1,720	1,362
66	A0A0G2K4 V6	<i>Cyrib</i>	CYFIP related Rac1 interactor B	3	Mch, M	3,384	1,349
67	P05065	<i>Aldoa</i>	Fructose- bisphosphate aldolase A	1	C	1,815	1,344
68	Q5M7T6	<i>Atp6v0 d1</i>	V-type proton ATPase subunit	2	S, Ve, PM	2,930	1,339
69	A0A8I5ZY8 6	<i>Sfxn3</i>	Sidoreflexin	2	Mch, M	1,786	1,334

70	Q68FY0	<i>Uqcrc1</i>	Cytochrome b-c1 complex subunit 1, mitochondrial	1	Mch	1,935	1,317
71	A0A8I6A3S1	<i>Anxa5</i>	Annexin	2	M	1,607	1,315
72	A0A8I5ZWH0	<i>Txnl1</i>	Thioredoxin-like 1	4	C, N	2,563	1,312
73	F8WFM2	<i>Napb</i>	NSF attachment protein beta	2	M	1,958	1,310
74	G3V8G4	<i>Bcan</i>	Brevican	2	S	1,987	1,301
75	F1LPG5	<i>Ndufb4</i>	NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4	1	Mch	1,725	1,300
76	P85834	<i>Tufm</i>	Elongation factor Tu, mitochondrial	3	Mch	1,826	1,276
77	P62815	<i>Atp6v1b2</i>	V-type proton ATPase subunit B, brain isoform	2	M, PM, Ve, S	2,208	1,274
78	Q9Z0W5	<i>Pacsin1</i>	Protein kinase C and casein kinase substratein neurons protein 1	3	S, M, PM, C	2,667	1,273
79	P11598	<i>Pdia3</i>	Protein disulfide-isomerase A3	4	ER	1,968	1,272
80	O35244	<i>Prdx6</i>	Peroxiredoxin-6	4	C, L	2,117	1,245
81	P67779	<i>Phb1</i>	Prohibitin 1	3	Mch, N, PM, C	2,019	1,243
82	A0A0G2JZT5	<i>Septin7</i>	Septin	3	C	2,408	1,223
83	Q5RKI0	<i>Wdr1</i>	WD repeat-containing protein 1	2	C	2,512	1,214
84	A0A8I6GIJ8	<i>Slc25a11</i>	Mitochondrial 2-oxoglutarate/malate carrier protein	2	M	3,473	0,741
85	Q5M7A7	<i>Cnrip1</i>	CB1 cannabinoid	3	C, PM	2,252	0,732

			receptor-interacting protein 1				
86	P25113	<i>Pgam1</i>	Phosphoglycerate mutase 1	1	C	2,939	0,731
87	P60203	<i>Plp1</i>	Myelin proteolipid protein	3	PM, M	3,005	0,719
88	B4F7C2	<i>Tubb4a</i>	Tubulin beta chain	2	C	1,732	0,718
89	A0A8I6AKV4	<i>Rgs7</i>	Regulator of G-protein signaling 7	3	PM, C	2,742	0,713
90	A0A8L2UH84	<i>Pebp1</i>	Phosphatidylethanolamine binding protein 1	3	C, M	2,038	0,709
91	G3V983	<i>Gstm1</i>	Glutathione S-transferase	4	C	3,060	0,699
92	G3V7C6	<i>Tubb4b</i>	Tubulin beta chain	2	C	2,675	0,698
93	Q6PDU7	<i>Atp5mg</i>	ATP synthase subunit g, mitochondrial	1	Mch	2,056	0,693
94	P07323	<i>Eno2</i>	Gamma-enolase	1	C, PM	3,282	0,686
95	P14604	<i>Echs1</i>	Enoyl-CoA hydratase, mitochondrial	7	Mch	1,723	0,685
96	P04797	<i>Gapdh</i>	Glyceraldehyde-3-phosphate dehydrogenase	1	C, N	2,673	0,681
97	P84087	<i>Cplx2</i>	Complexin-2	3	C, N, S	1,923	0,663
98	D3ZC55	<i>Hspa12a</i>	Heat shock protein family A (Hsp70) member 12A	4	C, N	1,446	0,662
99	A0A140TAI8	<i>Ahcy11</i>	S-adenosylhomocysteine hydrolase-like protein 1	3	ER, C, M, Mic, PM, Mch	2,877	0,659
100	F7F3R8	<i>Ctsd</i>	Cathepsin D	6	L	1,313	0,656
101	Q5XI73	<i>Arhgdia</i>	Rho GDP-dissociation inhibitor 1	3	C	2,600	0,629
102	P07335	<i>Ckb</i>	Creatine kinase B-type	1	C, PM, Mch	4,645	0,628
103	P48500	<i>Tpi1</i>	Triosephosphate isomerase	1	C	3,432	0,607

104	A0A8I6G867	<i>Pygm</i>	Alpha-1,4 glucan phosphorylase	1	C	4,220	0,605
105	A0A8I6ALV8	<i>Tuba1b</i>	Tubulin alpha chain	2	C	3,664	0,580
106	P69897	<i>Tubb5</i>	Tubulin beta-5 chain	2	C	1,287	0,566
107	P20760	<i>Igg-2a</i>	Ig gamma-2A chain C region	4	PM	1,824	0,559
108	A0A8I5ZXS2	<i>Dld</i>	Dihydrolipoyl dehydrogenase	1	Mch, N, Ve	2,116	0,536
109	P13221	<i>Got1</i>	Aspartate aminotransferase, cytoplasmic	6	C	3,161	0,533
110	Q09073	<i>Slc25a5</i>	ADP/ATP translocase 2	2	Mch, M	1,630	0,519
111	Q5XIF6	<i>Tuba4a</i>	Tubulin alpha-4A chain	2	C	1,891	0,516
112	A0A8I6ASC7	<i>PsmA7</i>	Proteasome subunit alpha type	6	C, N	1,373	0,504
113	A0A0G2JSU1	<i>Slc1a3</i>	Amino acid transporter	2	PM, M	1,883	0,484
114	Q0QF43	<i>Mdh2</i>	Malate dehydrogenase	1	Mch, C	3,282	0,483
115	P10111	<i>Ppia</i>	Peptidyl-prolyl cis-trans isomerase A	6	C	5,330	0,477
116	Q6LDS4	<i>Status unreviewed</i>	Superoxide dismutase [Cu-Zn]	4	C	3,738	0,469
117	P18418	<i>Calr</i>	Calreticulin	4	ER, C, Ve	1,456	0,454
118	Q5BJ93	<i>Eno1</i>	Alpha-enolase	1	C	5,380	0,438
119	P00507	<i>Got2</i>	Aspartate aminotransferase, mitochondrial	6	Mch, PM	3,892	0,405
120	Q5BJT9	<i>Ckmt1</i>	Creatine kinase	1	Mch	3,420	0,364
121	P27139	<i>Ca2</i>	Carbonic anhydrase 2	1	C, PM	4,249	0,262



Названия белков указаны, как они фигурируют в базе Uniprot.

Цифры в колонке «функции» обозначают следующие функциональные группы белков: 1. Белки/ферменты, участвующие в процессах генерации энергии и углеводного обмена. 2. Белки, участвующие в образовании цитоскелета и экзоцитозе. 3. Белки, участвующие в передаче сигнала и регуляции активности ферментов. 4. Антиоксидантные и защитные белки/ферменты. 5. Белки-регуляторы экспрессии генов, клеточного деления и дифференцировки. 6. Ферменты, участвующие в метаболизме белков, аминокислот и других азотистых соединений. 7. Ферменты, участвующие в метаболизме липидов.

Локализация: С – цитоплазма, N – ядро, М – мембраны, РМ – плазматическая мембрана, ER – эндоплазматический ретикулум, G – комплекс Гольджи, Mch – митохондрии, L – лизосомы, Mic – микросомы, E – эндосомы, Ve – везикулы, S – синапс.