

ДОПОЛНИТЕЛЬНЫЕ МАТЕРИАЛЫ

Бунеева О.А., Катица И.Г., Казиева Л.Ш., Вавилов Н.Э., Згода В.Г., (2023) Количественные изменения изатин-связывающих белков мозга у крыс с индуцированным ротеином экспериментальным паркинсонизмом. Биомедицинская химия, **69**(3), 188-192.

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Таблица 1S. Белки мозга крыс, количество которых меняется при введении животным ротеина (по сравнению с контролем). Жирным шрифтом номера по базе Uniprot выделены у митохондриальных белков.

| № | № по базе Uniprot | Ген по Uniprot | Название белка по Uniprot | Функции | Отличие от контроля при введении ротеина | |
|----|-------------------|----------------|---|---------|--|----------|
| | | | | | -Log(P-значение) | Разность |
| 1 | D3ZQG6 | <i>Trim2</i> | Tripartite motif-containing protein 2 | 6 | 2.7 | 0.9 |
| 2 | O08839 | <i>Bin1</i> | Myc box-dependent-interacting protein 1 | 2 | 3.5 | 0.6 |
| 3 | O88767 | <i>Park7</i> | Parkinson disease protein 7 homolog | 4 | 2.6 | 1.5 |
| 4 | S5RZM8 | <i>COX2</i> | Cytochrome c oxidase subunit 2 | 1 | 1.8 | 1.3 |
| 5 | P04797 | <i>Gapdh</i> | Glyceraldehyde-3-phosphate dehydrogenase | 1 | 2.4 | 0.7 |
| 6 | P07895 | <i>Sod2</i> | Superoxide dismutase [Mn], mitochondrial | 4 | 3.6 | -1.6 |
| 7 | P07943 | <i>Akr1b1</i> | Aldo-keto reductase family 1 member B1 | 7 | 3.4 | 1.0 |
| 8 | P10888 | <i>Cox4i1</i> | Cytochrome c oxidase subunit 4 isoform 1, mitochondrial | 1 | 3.1 | 1.1 |
| 9 | P11951 | <i>Cox6c2</i> | Cytochrome c oxidase subunit 6C-2 | 1 | 2.0 | 0.9 |
| 10 | P12075 | <i>Cox5b</i> | Cytochrome c oxidase subunit 5B, mitochondrial | 1 | 2.6 | 1.9 |
| 11 | P13668 | <i>Stmn1</i> | Stathmin | 2 | 2.7 | 0.7 |
| 12 | P19527 | <i>Nefl</i> | Neurofilament light polypeptide | 2 | 3.1 | -0.8 |
| 13 | P20788 | <i>Uqcrrf1</i> | Cytochrome b-c1 complex subunit Rieske, mitochondrial | 1 | 2.1 | 1.8 |
| 14 | A0A8I6AAG6 | <i>Slc1a3</i> | Amino acid transporter | 2 | 3.6 | 3.2 |

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|----|---------------|-----------------|---|---|-----|------|
| 15 | Q2I6B2 | <i>Atp6v0a1</i> | V-type proton ATPase subunit a | 2 | 4.5 | 4.5 |
| 16 | A0A0A0MY31 | <i>Itp1</i> | Inositol 1,4,5-trisphosphate receptor | 3 | 2.5 | -0.6 |
| 17 | A0A8L2R8Y3 | <i>Mif</i> | Macrophage migration inhibitory factor | 3 | 2.4 | 1.1 |
| 18 | A0A8I5ZMM3 | <i>Dlg4</i> | Discs large MAGUK scaffold protein 4 | 3 | 2.6 | -0.5 |
| 19 | P31596 | <i>Slc1a2</i> | Excitatory amino acid transporter 2 | 2 | 2.7 | 0.8 |
| 20 | F1M2I5 | <i>Opcml</i> | Opioid binding protein/cell adhesion molecule-like | 3 | 6.2 | 2.4 |
| 21 | P37377 | <i>Snca</i> | Alpha-synuclein | 4 | 1.6 | 2.5 |
| 22 | A0A8I6A6P9 | <i>Arl3</i> | ADP ribosylation factor like GTPase 3 | 3 | 2.7 | 0.9 |
| 23 | P38983 | <i>Rpsa</i> | 40S ribosomal protein SA | 5 | 4.0 | 1.5 |
| 24 | P55051 | <i>Fabp7</i> | Fatty acid-binding protein, brain | 7 | 2.8 | 1.5 |
| 25 | P62329 | <i>Tmsb4x</i> | Thymosin beta-4 | 2 | 2.4 | 1.6 |
| 26 | P62744 | <i>Ap2s1</i> | AP-2 complex subunit sigma | 2 | 3.4 | 1.3 |
| 27 | P62815 | <i>Atp6v1b2</i> | V-type proton ATPase subunit B, brain isoform | 2 | 4.4 | 0.8 |
| 28 | P69682 | <i>Necap1</i> | Adaptin ear-binding coat-associated protein 1 | 2 | 2.4 | 0.6 |
| 29 | P81155 | <i>Vdac2</i> | Voltage-dependent anion-selective channel protein 2 | 2 | 5.9 | 2.4 |
| 30 | P84076 | <i>Hpcal</i> | Neuron-specific calcium-binding protein hippocalcin | 3 | 4.2 | 1.4 |
| 31 | P97697 | <i>Imp1</i> | Inositol monophosphatase 1 | 3 | 3.5 | 1.6 |
| 32 | P97846 | <i>Cntnap1</i> | Contactin-associated protein 1 | 3 | 4.9 | 1.6 |
| 33 | F8WFS9 | <i>Add2</i> | Adducin 2 | 2 | 2.7 | -1.3 |
| 34 | Q4FZT2 | <i>Ppme1</i> | Protein phosphatase methylesterase 1 | 3 | 4.2 | -0.8 |
| 35 | Q5BK63 | <i>Ndufa9</i> | NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 9, mitochondrial | 1 | 3.8 | 0.8 |

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|----|--------------------|-------------------------------------|--|---|-----|------|
| 36 | Q5U2N3 | <i>Pitpnm1</i> | Membrane-associated phosphatidylinositol transfer protein 1 | 2 | 2.3 | -0.7 |
| 37 | Q5U318 | <i>Pea15</i> | Astrocytic phosphoprotein PEA-15 | 3 | 2.8 | 1.5 |
| 38 | Q5XI22 | <i>Acat2</i> | Acetyl-CoA acetyltransferase, cytosolic | 7 | 1.9 | 1.3 |
| 39 | Q5XIH7 | <i>Phb2</i> | Prohibitin-2 | 3 | 2.8 | 1.2 |
| 40 | Q5XIN6 | <i>Letm1</i> | Mitochondrial proton/calcium exchanger protein | 2 | 2.1 | 1.1 |
| 41 | Q62813 | <i>Lsmp</i> | Limbic system-associated membrane protein | 3 | 2.7 | 3.9 |
| 42 | Q63198 | <i>Cntn1</i> | Contactin-1 | 3 | 3.0 | 1.9 |
| 43 | Q63560 | <i>Map6</i> | Microtubule-associated protein 6 | 1 | 2.0 | 1.1 |
| 44 | A0A8L2 Q7K1 | <i>Ndufs1</i> | NADH-ubiquinone oxidoreductase 75 kDa subunit, mitochondrial | 1 | 3.8 | 0.5 |
| 45 | A0A8L2 QK81 | <i>Snd1</i> | Staphylococcal nuclease domain-containing protein | 5 | 2.4 | -0.8 |
| 46 | Q6P0K8 | <i>Jup</i> | Junction plakoglobin | 2 | 3.0 | 3.4 |
| 47 | A0A8I6 A243 | <i>Gpi</i> | Glucose-6-phosphate isomerase | 1 | 2.9 | 0.8 |
| 48 | Q812E9 | <i>Gpm6a</i> | Neuronal membrane glycoprotein M6-a | 5 | 2.8 | 1.2 |
| 49 | A0A8I6 AGZ2 | <i>Pex5l</i> | Peroxin 2, isoform CRA_c | 4 | 2.5 | -0.9 |
| 50 | A0A140 TAA4 | <i>Pdcd6ip</i> | Programmed cell death 6-interacting protein | 4 | 2.3 | -0.6 |
| 51 | Q9Z2L0 | <i>Vdac1</i> | Voltage-dependent anion-selective channel protein 1 | 2 | 4.3 | 1.6 |
| 52 | A0A096 MJT3 | <i>Septin4</i> | Septin 4 | 1 | 3.2 | -1.3 |
| 53 | A0A0G2 JSR0 | <i>Vdac3</i> | Voltage-dependent anion channel 3 | 2 | 4.1 | 3.6 |
| 54 | A0A0G2 JVL6 | <i>Ndufa8</i> | NADH dehydrogenase [ubiquinone] 1 alpha subcomplex subunit 8 | 1 | 1.9 | 1.2 |
| 55 | Q6S3A1 | <i>Status UniProt KB unreviewed</i> | Plectin 4 | 2 | 2.4 | -0.6 |

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|----|-------------------|----------------|--|---|-----|------|
| 56 | G3V9N8 | <i>Ap1b1</i> | AP complex subunit beta | 2 | 3.2 | 1.2 |
| 57 | A0A0G2K7Y2 | <i>Oxr1</i> | Oxidation resistance 1 | 3 | 2.7 | 1.4 |
| 58 | A0A8I5Y7K3 | <i>Trappc3</i> | Trafficking protein particle complex subunit | 2 | 2.9 | -0.6 |
| 59 | F1LPG5 | <i>Ndufb4</i> | NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 4 | 1 | 2.1 | 1.0 |
| 60 | A0A8I6A0P2 | <i>Nomo1</i> | Nodal modulator 1 | 3 | 2.9 | -1.9 |
| 61 | A0A8I6A1Y1 | <i>Ogdh</i> | Oxoglutarate dehydrogenase (succinyl-transferring) | 1 | 3.4 | -0.5 |
| 62 | A0A8I6A304 | <i>Basp1</i> | Brain abundant, membrane attached signal protein 1 | 3 | 5.1 | 4.2 |
| 63 | A0A8I6A522 | <i>Rab2a</i> | RAB2A, member RAS oncogene family | 3 | 3.4 | 0.7 |
| 64 | A0A8I6A7U6 | <i>Sfpq</i> | Splicing factor proline and glutamine rich | 5 | 4.9 | -1.5 |
| 65 | A0A8I6ADT5 | <i>Ndufs3</i> | NADH dehydrogenase [ubiquinone] iron-sulfur protein 3, mitochondrial | 1 | 2.4 | 0.7 |
| 66 | A0A8I6GEH9 | <i>Ntm</i> | Neurotrimin | 3 | 4.8 | 2.7 |
| 67 | A0A8I6APA7 | <i>Nefh</i> | Neurofilament heavy | 2 | 3.6 | -2.1 |
| 68 | Q5BJZ3 | <i>Nnt</i> | proton-translocating NAD(P)(+) transhydrogenase | 4 | 2.6 | 0.7 |
| 69 | A0A8I6GH02 | <i>Cntnap2</i> | Contactin associated protein 2 | 3 | 1.9 | -0.9 |
| 70 | A0A8I6GH75 | <i>Ddb1</i> | DNA damage-binding protein 1 | 5 | 3.1 | 0.9 |
| 71 | B2RYS8 | <i>Ndufb8</i> | NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 8, mitochondrial | 1 | 3.4 | 1.3 |
| 72 | B2RYW3 | <i>Ndufb9</i> | NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 9 | 1 | 4.1 | 0.9 |
| 73 | D3ZZK3 | <i>Epha4</i> | Receptor protein-tyrosine kinase | 3 | 3.2 | -0.6 |

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|----|---------------|-----------------|---|---|-----|------|
| 74 | D4A7L4 | <i>Ndufb11</i> | NADH dehydrogenase [ubiquinone] 1 beta subcomplex subunit 11, mitochondrial | 1 | 1.8 | 1.3 |
| 75 | D4ABT8 | <i>Hnrnpul2</i> | Heterogeneous nuclear ribonucleoprotein U-like 2 | 5 | 2.8 | -1.1 |
| 76 | M0RAY1 | <i>Pdcd5</i> | Programmed cell death 5 | 5 | 2.1 | 0.7 |
| 77 | Q9JLT5 | <i>Wfs1</i> | WFS1 (Wolfram Syndrome Protein 1) | 3 | 2.7 | 3.0 |
| 78 | F1LRI7 | <i>Aak1</i> | AP2 associated kinase 1 | 3 | 2.6 | 0.9 |
| 79 | F1M8K0 | <i>Dagl</i> | Dystroglycan 1 | 3 | 1.7 | -1.2 |
| 80 | F7EPH4 | <i>Ppal</i> | Inorganic diphosphatase | 7 | 4.0 | 3.3 |
| 81 | Q6P9V1 | <i>Cd81</i> | Tetraspanin | 4 | 3.1 | 1.7 |
| 82 | G3V7L8 | <i>Atp6v1e1</i> | ATPase H ⁺ -transporting V1 subunit E1 | 2 | 3.7 | 0.8 |
| 83 | G3V9Z3 | <i>Maoa</i> | Amine oxidase | 6 | 2.9 | 1.8 |
| 84 | H1UBM5 | <i>Cpne6</i> | Copine 6 protein | 2 | 5.2 | 1.8 |
| 85 | Q52KS1 | <i>Pfkm</i> | ATP-dependent 6-phosphofructokinase | 1 | 5.5 | 0.7 |
| 86 | Q5M7T6 | <i>Atp6v0d1</i> | V-type proton ATPase subunit | 3 | 6.7 | 4.4 |

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