Supplementary Materials

Table S1. Identified proteins with expression significantly altered in the hippocampus of rats exposed to $AlCl_3$ vs. Control group.

Access Number[a]	Protein Name	PLGS Score	Fold Change	Biological Process
P09811	Glycogen phosphorylase_ liver form	16.73	1.68	CM
P38406	Guanine nucleotide-binding protein G(olf) subunit alpha	984.68	1.52	CM
P04897	Guanine nucleotide-binding protein G(i) subunit alpha-2	979.59	1.52	CM
Q63803	Guanine nucleotide-binding protein G(s) subunit alpha isoforms Xlas	979.59	1.52	CM
P10824	Guanine nucleotide-binding protein G(i) subunit alpha-1	979.59	1.51	CM
P08753	Guanine nucleotide-binding protein G(k) subunit alpha	979.59	1.51	CM
P63095	Guanine nucleotide-binding protein G(s) subunit alpha isoforms short	979.59	1.51	CM
P29348	Guanine nucleotide-binding protein G(t) subunit alpha-3	979.59	1.51	CM
Q00729	Histone H2B type 1-A	885.74	1.31	CM
P04797	Glyceraldehyde-3-phosphate dehydrogenase	8442.76	1.39	CM
P0C0S7	Histone H2A.Z	836.06	1.26	CM
P47858	ATP-dependent 6-phosphofructokinase_ muscle type	48.95	1.54	CM
Q5MYU0	2'-5'-oligoadenylate synthase 2	48.89	1.34	CM
P54311	Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1	222.87	1.48	CM
P54313	Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-2	218.32	1.51	CM
Q00715	Histone H2B type 1	1856.85	1.45	CM
O35353	Guanine nucleotide-binding protein subunit beta-4	185.04	1.35	CM
P62804	Histone H4	1422.57	1.26	CM
P59215	Guanine nucleotide-binding protein G(o) subunit alpha	1196.22	1.52	CM
Q9ESV6	Glyceraldehyde-3-phosphate dehydrogenase_ testis-specific	1155.82	1.46	CM
P35289	Ras-related protein Rab-15	1036.14	1.36	CM
P0C169	Histone H2A type 1-C	1024.05	1.27	CM

Q64598	Histone H2A type 1-F	1024.05	1.27	CM
P0CC09	Histone H2A type 2-A	1024.05	1.27	CM
Q00728	Histone H2A type 4	1024.05	1.27	CM
P02262	Histone H2A type 1	1024.05	1.26	CM
P0C170	Histone H2A type 1-E	1024.05	1.26	CM
Q4FZT6	Histone H2A type 3	1024.05	1.26	CM
A9UMV8	Histone H2A.J	1024.05	1.26	CM
Q6Q7Y5	Guanine nucleotide-binding protein subunit alpha-13	1020.03	1.52	CM
Q63210	Guanine nucleotide-binding protein subunit alpha-12	1020.03	1.51	CM
P06685	Sodium/potassium-transporting ATPase subunit alpha-1	478.87	1.40	CM
P06686	Sodium/potassium-transporting ATPase subunit alpha-2	575.36	1.38	CM
P06687	Sodium/potassium-transporting ATPase subunit alpha-3	695.28	1.40	CM
Q64541	Sodium/potassium-transporting ATPase subunit alpha-4	254.19	1.35	CM
P07340	Sodium/potassium-transporting ATPase subunit beta-1	456.82	1.45	CM
P16617	Phosphoglycerate kinase 1	383.39	1.38	CM
P09626	Potassium-transporting ATPase alpha chain 1	50.98	1.39	CM
P54708	Potassium-transporting ATPase alpha chain 2	254.19	1.34	CM
P84092	AP-2 complex subunit mu	68.35	1.28	CM
Q05982	Nucleoside diphosphate kinase A	287.99	1.46	CM
P19804	Nucleoside diphosphate kinase B	287.99	1.48	CM
P10111	Peptidyl-prolyl cis-trans isomerase A	529.83	1.54	CM
P25113	Phosphoglycerate mutase 1	248.18	1.65	CM
P48500	Triosephosphate isomerase	1730.45	1.46	CM
Q9QUL6	Vesicle-fusing ATPase	51.69	1.49	CM
P62815	V-type proton ATPase subunit B_ brain isoform	185.22	1.51	CM
Q1WIM3	Cell adhesion molecule 3	41.12	1.28	CM
P45592	Cofilin-1	1580.13	1.49	CM
P06761	Endoplasmic reticulum chaperone BiP	234.63	1.55	CM
P01946	Hemoglobin subunit alpha-1/2	17560.29	1.12	CM
P02091	Hemoglobin subunit beta-1	6789.73	1.16	CM
P62963	Profilin-1	338.86	1.77	CR
Q62952	Dihydropyrimidinase-related protein 3	37.59	1.58	CR
P05065	Fructose-bisphosphate aldolase A	863.61	1.57	CR
Q5XIF6	Tubulin alpha-4A chain	9823.46	1.40	CR

Q6P9T8	Tubulin beta-4B chain	9552.34	1.42	CR
P19332	Microtubule-associated protein tau	90.16	1.26	CR
Q68FR8	Tubulin alpha-3 chain	8962.88	1.43	CR
Q4QRB4	Tubulin beta-3 chain	8913.07	1.43	CR
P60711	Actin_ cytoplasmic 1	7708.2	1.51	CR
P63259	Actin_ cytoplasmic 2	7698.71	1.52	CR
Q6AY56	Tubulin alpha-8 chain	6725.47	1.42	CR
P15146	Microtubule-associated protein 2	45.31	1.32	CR
Q6P9V9	Tubulin alpha-1B chain	12809.87	1.43	CR
P68370	Tubulin alpha-1A chain	12599.98	1.45	CR
P85108	Tubulin beta-2A chain	12233.2	1.43	CR
Q3KRE8	Tubulin beta-2B chain	12226.68	1.43	CR
P11442	Clathrin heavy chain 1	115.73	1.55	CR
P69897	Tubulin beta-5 chain	10835.71	1.42	CR
Q6AYZ1	Tubulin alpha-1C chain	10386.45	1.42	CR
P09117	Fructose-bisphosphate aldolase C	690.81	1.51	CR
Q62950	Dihydropyrimidinase-related protein 1	209.35	1.54	CR
P47942	Dihydropyrimidinase-related protein 2	1694.23	1.49	CR
P21575	Dynamin-1	128.86	1.42	CR
P39052	Dynamin-2	34.72	1.45	CR
Q08877	Dynamin-3	18.87	1.45	CR
Q5RJQ4	NAD-dependent protein deacetylase sirtuin-2	332.42	1.46	CR
Q5RKI0	WD repeat-containing protein 1	69.93	1.43	CR
P62630	Elongation factor 1-alpha 1	153.66	1.39	CR
P62632	Elongation factor 1-alpha 2	82.84	1.43	CR
P15999	ATP synthase subunit alpha_ mitochondrial	872.7	1.48	MA
O88767	Protein/nucleic acid deglycase DJ-1	746.41	1.22	MA
P00507	Aspartate aminotransferase_ mitochondrial	505.71	1.49	MA
P08461	Dihydrolipoyllysine-residue acetyltransferase component of pyruvate dehydrogenase complex_ mitochondrial	50.58	1.48	MA
P07335	Creatine kinase B-type	1516.55	1.40	MA
Q05962	ADP/ATP translocase 1	652.7	1.40	MA
Q09073	ADP/ATP translocase 2	565.81	1.46	MA
P84079	ADP-ribosylation factor 1	65.42	1.39	MA

P84082	ADP-ribosylation factor 2	65.42	1.32	MA
P61206	ADP-ribosylation factor 3	65.42	1.40	MA
P61751	ADP-ribosylation factor 4	47.49	1.26	MA
P84083	ADP-ribosylation factor 5	47.49	1.25	MA
P10719	ATP synthase subunit beta_ mitochondrial	2896.76	1.48	MA
P31399	ATP synthase subunit d_ mitochondrial	156.04	1.55	MA
Q06647	ATP synthase subunit O_ mitochondrial	278.89	1.51	MA
Q9Z2L0	Voltage-dependent anion-selective channel protein 1	287.96	1.46	MA
P81155	Voltage-dependent anion-selective channel protein 2	228.35	1.39	MA
Q9R1Z0	Voltage-dependent anion-selective channel protein 3	150.42	1.42	MA
P16036	Phosphate carrier protein_ mitochondrial	179.15	1.28	MA
P26284	Pyruvate dehydrogenase E1 component subunit alpha_ somatic form_ mitochondrial	38.87	1.62	MA
P49432	Pyruvate dehydrogenase E1 component subunit beta_ mitochondrial	246.76	1.57	MA
P12928	Pyruvate kinase PKLR	268.94	1.45	MA
P11980	Pyruvate kinase PKM	1534.5	1.40	MA
Q9ER34	Aconitate hydratase_ mitochondrial	187.21	1.54	MA
P05708	Hexokinase-1	32.41	1.43	MA
P04642	L-lactate dehydrogenase A chain	174.5	1.48	MA
P42123	L-lactate dehydrogenase B chain	196.55	1.35	MA
P31000	Vimentin	131.49	1.14	MA
P25809	Creatine kinase U-type_ mitochondrial	161.57	1.39	MA
P37377	Alpha-synuclein	271.99	1.68	NSR
P13596	Neural cell adhesion molecule 1	38.51	1.65	NSR
Q63754	Beta-synuclein	851.66	1.63	NSR
P11730	Calcium/calmodulin-dependent protein kinase type II subunit gamma	136.53	1.63	NSR
P11275	Calcium/calmodulin-dependent protein kinase type II subunit alpha	1107.35	1.62	NSR
Q05175	Brain acid soluble protein 1	94.21	1.62	NSR
P08413	Calcium/calmodulin-dependent protein kinase type II subunit beta	214.74	1.58	NSR
Q63942	GTP-binding protein Rab-3D	75.13	1.45	NSR

P10860	Glutamate dehydrogenase 1_ mitochondrial	56.67	1.49	NSR
P68035	Actin_ alpha cardiac muscle 1	3064.16	1.51	NSR
P68136	Actin_ alpha skeletal muscle	3059.82	1.51	NSR
P62738	Actin_ aortic smooth muscle	3035.28	1.54	NSR
P63269	Actin_ gamma-enteric smooth muscle	3035.28	1.52	NSR
P15791	Calcium/calmodulin-dependent protein kinase type II subunit delta	188.01	1.55	NSR
P35284	Ras-related protein Rab-12	1004.3	1.38	NSR
P35280	Ras-related protein Rab-8A	992	1.40	NSR
P35281	Ras-related protein Rab-10	992	1.39	NSR
Q53B90	Ras-related protein Rab-43	992	1.39	NSR
Q6NYB7	Ras-related protein Rab-1A	992	1.38	NSR
P10536	Ras-related protein Rab-1B	992	1.38	NSR
P51156	Ras-related protein Rab-26	992	1.38	NSR
Q5U316	Ras-related protein Rab-35	992	1.38	NSR
P05714	Ras-related protein Rab-4A	992	1.38	NSR
P51146	Ras-related protein Rab-4B	992	1.38	NSR
P70550	Ras-related protein Rab-8B	992	1.38	NSR
P61107	Ras-related protein Rab-14	992	1.36	NSR
P02688	Myelin basic protein	4721.22	-0.97	NSR
P02688	Myelin basic protein	4721.22	0.97	NSR
P60203	Myelin proteolipid protein	5849.56	1.20	NSR
P07722	Myelin-associated glycoprotein	44.41	1.32	NSR
P16884	Neurofilament heavy polypeptide	131.49	1.12	NSR
P19527	Neurofilament light polypeptide	139.69	1.26	NSR
P12839	Neurofilament medium polypeptide	131.49	1.20	NSR
Q812E9	Neuronal membrane glycoprotein M6-a	70.65	1.39	NSR
P35286	Ras-related protein Rab-13	137.44	1.48	NSR
P63012	Ras-related protein Rab-3A	228.54	1.42	NSR
Q63941	Ras-related protein Rab-3B	55.63	1.45	NSR
P62824	Ras-related protein Rab-3C	55.63	1.46	NSR
Q9WVB1	Ras-related protein Rab-6A	203.47	1.39	NSR
P50398	Rab GDP dissociation inhibitor alpha	191.83	1.51	NSR
P50399	Rab GDP dissociation inhibitor beta	133.66	1.54	NSR

Q5XI73	Rho GDP-dissociation inhibitor 1	322.17	1.52	NSR
P63329	Serine/threonine-protein phosphatase 2B catalytic subunit alpha isoform	54.99	1.57	NSR
P20651	Serine/threonine-protein phosphatase 2B catalytic subunit beta isoform	22.44	1.54	NSR
P31044	Phosphatidylethanolamine-binding protein 1	387.68	1.43	NSR
Q62658	Peptidyl-prolyl cis-trans isomerase FKBP1A	343.04	1.99	NSR
P13233	2'_3'-cyclic-nucleotide 3'-phosphodiesterase	638.75	1.22	NSR
P11030	Acyl-CoA-binding protein	882.98	1.57	NSR
P04764	Alpha-enolase	666.73	1.42	NSR
P23565	Alpha-internexin	212.03	1.34	NSR
P13221	Aspartate aminotransferase_ cytoplasmic	283.02	1.45	NSR
O35095	Neurochondrin	58.5	1.49	NSR
P01830	Thy-1 membrane glycoprotein	216.68	1.19	NSR
Q00981	Ubiquitin carboxyl-terminal hydrolase isozyme L1	551.92	1.48	NSR
P15429	Beta-enolase	209.91	1.38	NSR
Q63198	Contactin-1	48.87	1.27	NSR
O35179	Endophilin-A1	50.93	1.52	NSR
P24942	Excitatory amino acid transporter 1	132.53	1.55	NSR
P31596	Excitatory amino acid transporter 2	82.67	1.54	NSR
P07323	Gamma-enolase	719.63	1.49	NSR
P47819	Glial fibrillary acidic protein	180.63	1.27	NSR
Q6P6V0	Glucose-6-phosphate isomerase	131.54	1.49	NSR
P08010	Glutathione S-transferase Mu 2	24.2	1.84	RR
P63039	60 kDa heat shock protein_ mitochondrial	84.73	1.58	RR
P63018	Heat shock cognate 71 kDa protein	618.98	1.51	RR
P26772	10 kDa heat shock protein_ mitochondrial	488.77	1.48	RR
P04905	Glutathione S-transferase Mu 1	39.83	1.55	RR
P55063	Heat shock 70 kDa protein 1-like	35.76	1.55	RR
P0DMW0	Heat shock 70 kDa protein 1A	32.66	1.54	RR
P0DMW1	Heat shock 70 kDa protein 1B	32.66	1.52	RR
P82995	Heat shock protein HSP 90-alpha	239.47	1.35	RR
P34058	Heat shock protein HSP 90-beta	213.82	1.35	RR
Q5XHZ0	Heat shock protein 75 kDa_ mitochondrial	153.25	1.45	RR

P14659	Heat shock-related 70 kDa protein 2	147.3	1.49	RR
P09606	Glutamine synthetase	124.52	1.25	RR
P04906	Glutathione S-transferase P	118.27	1.23	RR
P08009	Glutathione S-transferase Yb-3	116.01	1.51	RR
P07632	Superoxide dismutase [Cu-Zn]	58.53	1.49	RR
Q68FY0	Cytochrome b-c1 complex subunit 1_ mitochondrial	143.73	1.46	RR
P00406	Cytochrome c oxidase subunit 2	105.65	1.23	RR
P10888	Cytochrome c oxidase subunit 4 isoform 1_ mitochondrial	99.64	1.48	RR
P11240	Cytochrome c oxidase subunit 5A_ mitochondrial	876.52	1.54	RR
P12075	Cytochrome c oxidase subunit 5B_ mitochondrial	292.65	1.51	RR
P62898	Cytochrome c_ somatic	313.89	1.46	RR
Q63716	Peroxiredoxin-1	101.4	1.63	RR
P35704	Peroxiredoxin-2	183.67	1.30	RR
Q9R063	Peroxiredoxin-5_ mitochondrial	559.67	1.32	RR
O35244	Peroxiredoxin-6	208.92	1.58	RR
O88989	Malate dehydrogenase_ cytoplasmic	595.14	1.46	RR
P04636	Malate dehydrogenase_ mitochondrial	1333.71	1.46	RR
P09812	Glycogen phosphorylase_ muscle form	16.73	1.63	RR
P29101	Synaptotagmin-2	35.7	1.79	SS
P61765	Syntaxin-binding protein 1	713.98	1.38	SS
P11505	Plasma membrane calcium-transporting ATPase 1	31.24	1.39	SS
Q63537	Synapsin-2	230.01	1.55	SS
P07825	Synaptophysin	192.41	1.48	SS
P21707	Synaptotagmin-1	183.1	1.43	SS
P63102	14-3-3 protein zeta/delta	1740.65	1.48	SS
P09951	Synapsin-1	160.54	1.49	SS
P62260	14-3-3 protein epsilon	1205.61	1.54	SS
P68511	14-3-3 protein eta	1131.05	1.46	SS
P61983	14-3-3 protein gamma	1131.05	1.46	SS
P68255	14-3-3 protein theta	1131.05	1.46	SS
P35213	14-3-3 protein beta/alpha	1131.05	1.43	SS
P61265	Syntaxin-1B	44.43	1.51	SS

[a] Accession ID According To Uniport.Org Database. Positive and negative values of fold change indicate up- and down-regulated proteins, respectively. Results of the comparison between the al group versus the control group. PLGS - Protein Lynx Global Server. FOLD CHANGE - measure describing the degree of quantity change

between final and original value. Legend: Cytoskeleton Regulation (CR); Cell Metabolism (CM); Mitochondrial Activity (MA); Redox Regulation (RR); Nervous System Regulation (NSR); Synaptic Signaling (SS).

Table S2. Identified proteins with exclusive regulation or absent in the hippocampus of rats exposed to aluminum.

Access Number [a]	Protein Name	PLGS Score	Fold Change	Biological Process
Q9Z0U5	Aldehyde oxidase 1	37.37	-	CC
Q9WTP0	Band 4.1-like protein 1	29.34	-	MF
B2RYG7	Docking protein 3	123.11	-	CC
Q5XI74	Endonuclease/exonuclease/phosphatase family domain-containing protein 1	39.12	-	CC, MF, BP
Q62825	Exocyst complex component 3	42.38	-	BP
Q8K430	Kelch-like protein 17	63.65	-	MF, BP
Q63560	Microtubule-associated protein 6	30.56	-	CC, MF, BP
P21263	Nestin	27.37	-	CC, MF, BP
Q66HD3	Nuclear autoantigenic sperm protein	25.62	-	CC, MF, BP
O35264	Platelet-activating factor acetylhydrolase IB subunit beta	166.46	-	CC, MF, BP
P0CG51	Polyubiquitin-B	368.81	-	CC, MF, BP
Q63429	Polyubiquitin-C	368.81	-	CC, MF, BP
Q5XIH7	Prohibitin-2	184.24	-	CC, MF, BP
Q5BK81	Prostaglandin reductase 2	68.36	-	MF, BP
P04631	Protein S100-B	473.48	-	CC, MF, BP
Q5BJL5	Protein strawberry notch homolog 1	23.29	-	CC, MF, BP
O88664	Serine/threonine-protein kinase TAO1	40.09	-	MF, BP
Q3I408	Solute carrier family 22 member 5	192.97	-	CC
Q6DG50	TANK-binding kinase 1-binding protein 1	34.36	-	BP
P62982	Ubiquitin-40S ribosomal protein S27a	368.81	-	MF
P62986	Ubiquitin-60S ribosomal protein L40	368.81	-	MF
Q71LX6	Xin actin-binding repeat-containing protein 2	25.07	-	MF
Q5XI78	2-oxoglutarate dehydrogenase_ mitochondrial	33.14	+	MF, BP
Q5FVR4	3'-5' exoribonuclease 1	62.59	+	MF, BP
Q4V7C7	Actin-related protein 3	107.54	+	MF, BP
Q9Z286	Adenylate cyclase type 10	63.37	+	MF, BP
P51635	Aldo-keto reductase family 1 member A1	106.48	+	MF, BP

Q63028	Alpha-adducin	98.31	+	CC
P48037	Annexin A6	47.85	+	CC, MF, BP
Q05764	Beta-adducin	74.65	+	MF
P85969	Beta-soluble NSF attachment protein	89.86	+	BP
Q9JHX4	Caspase-8	51.32	+	MF, BP
Q62745	CD81 antigen	54.82	+	CC
Q8K3U6	Coagulation factor VII	152.04	+	MF, BP
Q66H73	Coiled-coil domain-containing protein 82	70.02	+	CC
Q0V8T4	Contactin-associated protein like 5-3	43.15	+	BP
Q8K4F8	Cyclin-F	59.21	+	MF, BP
P20788	Cytochrome b-c1 complex subunit Rieske_ mitochondrial	203.74	+	MF, BP
P11950	Cytochrome c oxidase subunit 6C-1	155.75	+	CC
P11951	Cytochrome c oxidase subunit 6C-2	529.93	+	CC
Q64559	Cytosolic acyl coenzyme A thioester hydrolase	138.32	+	MF, BP
B1H299	DDB1- and CUL4-associated factor 17	87.27	+	BP
Q8CF97	Deubiquitinating protein VCIP135	46	+	MF, BP
Q6TUG0	DnaJ homolog subfamily B member 11	79.78	+	MF
Q68SB1	Double-stranded RNA-binding protein Staufen homolog 2	59.65	+	MF, BP
P63170	Dynein light chain 1_ cytoplasmic	509	+	MF, BP
Q78P75	Dynein light chain 2_ cytoplasmic	405.05	+	MF, BP
O35964	Endophilin-A2	72.86	+	BP
O70513	Galectin-3-binding protein	41.32	+	BP
P08050	Gap junction alpha-1 protein	162.29	+	CC
P13264	Glutaminase kidney isoform_ mitochondrial	89.5	+	MF
O35077	Glycerol-3-phosphate dehydrogenase [NAD(+)]_ cytoplasmic	106.27	+	MF
Q9EQH1	GRB2-associated-binding protein 2	57.32	+	CC, MF, BP
P52287	Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-3	131.54	+	MF
P51840	Guanylyl cyclase GC-E	53.59	+	MF, BP
Q71RP1	Heparanase	99.81	+	MF, BP
P27881	Hexokinase-2	44.34	+	MF, BP
Q9QYW1	Intermediate conductance calcium-activated potassium channel protein 4	93.9	+	MF, BP
Q99NA5	Isocitrate dehydrogenase [NAD] subunit alpha_ mitochondrial	174.11	+	MF, BP

Q68FX0	Isocitrate dehydrogenase [NAD] subunit beta_ mitochondrial	101.15	+	BP
Q6P6Q2	Keratin_ type II cytoskeletal 5	169.1	+	CC, MF, BP
Q2PQA9	Kinesin-1 heavy chain	60.75	+	MF
P70587	Leucine-rich repeat-containing protein 7	43.66	+	CC, MF, BP
P19629	L-lactate dehydrogenase C chain	46.73	+	MF
Q64122	Myosin regulatory light polypeptide 9	172.33	+	MF
P19234	NADH dehydrogenase [ubiquinone] flavoprotein 2_ mitochondrial	166.54	+	MF, BP
P07936	Neuromodulin	126.05	+	MF, BP
P84076	Neuron-specific calcium-binding protein hippocalcin	88.29	+	CC, MF, BP
F1M707	Neutrophil cytosolic factor 1	54.59	+	CC
Q811R2	Peroxisome proliferator-activated receptor gamma coactivator 1-beta	47.89	+	CC
Q6AYQ3	Phenylalanine--tRNA ligase_ mitochondrial	62.69	+	MF, BP
P16290	Phosphoglycerate mutase 2	114.53	+	MF, BP
B4F785	Pikachurin	51.11	+	CC
D4ACE5	Protein inturned	177.77	+	MF, BP
Q8VBU2	Protein NDRG2	117.17	+	MF, BP
P0C5X8	Protein tweety homolog 1	94.22	+	MF, BP
O35331	Pyridoxal kinase	76.2	+	MF
O35550	Rab GTPase-binding effector protein 1	45.2	+	CC, MF, BP
Q62956	Receptor tyrosine-protein kinase erbB-4	91.94	+	MF, BP
Q9JLT7	Retinal homeobox protein Rx	77.9	+	MF, BP
Q63965	Sideroflexin-1	58.58	+	BP
Q9JHY2	Sideroflexin-3	76.45	+	BP
D3ZQL7	Similar to 25 kDa brain-specific protein (P25-alpha) (Predicted)_ isoform CRA_a	278.74	+	MF, BP
P31647	Sodium- and chloride-dependent GABA transporter 3	81.74	+	BP
Q80ZA5	Sodium-driven chloride bicarbonate exchanger	47.64	+	BP
Q9QWN8	Spectrin beta chain_ non-erythrocytic 2	43.43	+	MF
P47861	Synaptotagmin-5	37.67	+	CC, MF, BP
Q5XIM9	T-complex protein 1 subunit beta	38.27	+	MF
Q10836	Thyrotropin-releasing hormone-degrading ectoenzyme	45.36	+	MF
P70566	Tropomodulin-2	72.67	+	MF

A0A0G2K2D6	Tubulin polymerization-promoting protein	278.74	+	MF, BP
Q5RJR2	Twinfilin-1	69.44	+	MF
Q9Z1A6	Vigilin	55.82	+	MF

[a] Accession ID according to Uniport.org database. Sign of – and + indicate exclusive expression in the control (absent in exposed) or exposed group, respectively. Results of the comparison between the Al group versus the control group. PLGS - Protein Lynx Global Server. FOLD CHANGE - Measure describing the degree of quantity change between final and original value. Legend: Cellular Component (CC), Biological Process (BP) and Molecular Function (MF).

Table S3. List of proteins that interacted in the overrepresentation analysis (ORA) in the hippocampus of rats of $AlCl_3$ vs. Control group, based on biological processes of gene ontology.

Accession ID[a]	Protein Description
O35244	Peroxiredoxin-6
O88767	Parkinson disease protein 7 homolog
O88989	Malate dehydrogenase, cytoplasmic
P00507	Aspartate aminotransferase, mitochondrial
P04636	Malate dehydrogenase, mitochondrial
P04642	L-lactate dehydrogenase A chain
P04764	Alpha-enolase
P06761	Endoplasmic reticulum chaperone BiP
P07335	Creatine kinase B-type
P07632	Superoxide dismutase [Cu-Zn]
P08461	Dihydrolipoyllysine-residue acetyltransferase component of pyruvate dehydrogenase complex, mitochondrial
P09117	Fructose-bisphosphate aldolase C
P10719	ATP synthase subunit beta, mitochondrial
P10888	Cytochrome c oxidase subunit 4 isoform 1, mitochondrial
P11240	Cytochrome c oxidase subunit 5A, mitochondrial
P11442	Clathrin heavy chain 1
P15429	Beta-enolase
P15999	ATP synthase subunit alpha, mitochondrial
P19234	NADH dehydrogenase [ubiquinone] flavoprotein 2, mitochondrial
P19804	Nucleoside diphosphate kinase B
P20788	Cytochrome b-c1 complex subunit Rieske, mitochondrial

P34058	Heat shock protein HSP 90-beta
P35213	14-3-3 protein beta/alpha
P35280	Ras-related protein Rab-8A
P35704	Peroxiredoxin-2
P42123	L-lactate dehydrogenase B chain
P48500	Triosephosphate isomerase
P49432	Pyruvate dehydrogenase E1 component subunit beta, mitochondrial
P59215	Guanine nucleotide-binding protein G(o) subunit alpha
P60711	Actin, cytoplasmic 1
P61765	Syntaxin-binding protein 1
P62260	14-3-3 protein epsilon
P62630	Elongation factor 1-alpha 1
P63039	60 kDa heat shock protein, mitochondrial
P63102	14-3-3 protein zeta/delta
P68035	Actin, alpha cardiac muscle 1
P68136	Actin, alpha skeletal muscle
P70550	Ras-related protein Rab-8B
Q05982	Nucleoside diphosphate kinase A
Q06647	ATP synthase subunit O, mitochondrial
Q08877	Dynamin-3
Q09073	ADP/ATP translocase 2
Q5XIM9	T-complex protein 1 subunit beta
Q63716	Peroxiredoxin-1
Q68FX0	Isocitrate dehydrogenase [NAD] subunit beta, mitochondrial
Q68FY0	Cytochrome b-c1 complex subunit 1, mitochondrial
Q6P9T8	Tubulin beta-4B chain
Q99NA5	Isocitrate dehydrogenase [NAD] subunit alpha, mitochondrial
Q9ER34	Aconitate hydratase, mitochondrial
Q9Z2L0	Voltage-dependent anion-selective channel protein 1

[a] Accession ID according to Uniport.org database.