

Supplementary Table S6. DAVID Functional enrichment analysis. The gene sets in each of the identified protein clusters were checked for enrichment of KEGG pathway in order to identify biological processes related to the proteins in each cluster.

Annotation Cluster 1	Enrichment Score: 12.27	Count	p-value	Benjamini
	PI3K-Akt signaling pathway	42	2.80E-17	7.50E-15
	MAPK signaling pathway	36	4.10E-15	4.60E-13
	Pathways in cancer	48	5.10E-15	4.60E-13
	Rap1 signaling pathway	30	2.40E-14	1.60E-12
	Ras signaling pathway	30	5.30E-13	2.80E-11
	Melanoma	16	1.60E-10	3.50E-09
	Focal adhesion	24	6.80E-10	9.60E-09
	Regulation of actin cytoskeleton	24	8.80E-09	1.10E-07
Annotation Cluster 2	Enrichment Score: 7.58	Count	p-value	Benjamini
	Ras signaling pathway	30	5.30E-13	2.80E-11
	Gastric cancer	18	1.40E-07	1.10E-06
	Hepatocellular carcinoma	14	2.60E-04	8.90E-04
Annotation Cluster 3	Enrichment Score: 5.31	Count	p-value	Benjamini
	Th17 cell differentiation	16	5.50E-08	5.20E-07
	PD-L1 expression and PD-1 checkpoint pathway in cancer	14	2.40E-07	1.90E-06
	Th1 and Th2 cell differentiation	12	1.50E-05	7.40E-05
	Leishmaniasis	8	2.80E-03	7.10E-03
Annotation Cluster 4	Enrichment Score: 5	Count	p-value	Benjamini
	Proteoglycans in cancer	27	4.50E-12	2.00E-10
	Fc epsilon RI signaling pathway	17	5.20E-12	2.00E-10
	VEGF signaling pathway	16	7.30E-12	2.40E-10
	HIF-1 signaling pathway	20	1.50E-11	4.30E-10
	EGFR tyrosine kinase inhibitor resistance	17	6.00E-11	1.60E-09
	ErbB signaling pathway	17	1.90E-10	3.90E-09
	Chemokine signaling pathway	24	2.70E-10	5.20E-09
	Chemical carcinogenesis - receptor activation	25	3.50E-10	6.20E-09
	Hepatitis B	22	3.90E-10	6.50E-09
	Focal adhesion	24	6.80E-10	9.60E-09
	Glioma	15	3.10E-09	4.10E-08
	Natural killer cell mediated cytotoxicity	18	1.10E-08	1.30E-07
	Prostate cancer	16	1.20E-08	1.40E-07
	AGE-RAGE signaling pathway in diabetic complications	16	1.90E-08	2.10E-07
	Neurotrophin signaling pathway	17	3.10E-08	3.30E-07
	T cell receptor signaling pathway	16	3.30E-08	3.30E-07
	Growth hormone synthesis, secretion and action	17	3.50E-08	3.50E-07

B cell receptor signaling pathway	14	8.80E-08	8.10E-07
Endocrine resistance	15	1.10E-07	9.60E-07
PD-L1 expression and PD-1 checkpoint pathway in cancer	14	2.40E-07	1.90E-06
Human immunodeficiency virus 1 infection	21	2.40E-07	1.90E-06
Kaposi sarcoma-associated herpesvirus infection	20	2.80E-07	2.10E-06
Pancreatic cancer	13	2.90E-07	2.20E-06
Toxoplasmosis	15	5.90E-07	4.20E-06
Fc gamma R-mediated phagocytosis	14	6.60E-07	4.70E-06
Choline metabolism in cancer	14	7.50E-07	5.10E-06
Renal cell carcinoma	12	8.40E-07	5.60E-06
Prolactin signaling pathway	12	9.80E-07	6.30E-06
Colorectal cancer	13	1.20E-06	7.40E-06
Non-small cell lung cancer	12	1.30E-06	8.10E-06
Osteoclast differentiation	15	3.00E-06	1.80E-05
Breast cancer	16	3.20E-06	1.80E-05
Apoptosis	15	6.10E-06	3.50E-05
Sphingolipid signaling pathway	14	6.90E-06	3.80E-05
Thyroid hormone signaling pathway	14	8.30E-06	4.40E-05
Human cytomegalovirus infection	19	1.10E-05	5.40E-05
Platelet activation	14	1.10E-05	5.50E-05
Chronic myeloid leukemia	11	1.60E-05	7.70E-05
Cholinergic synapse	13	2.10E-05	1.00E-04
Hepatitis C	15	3.20E-05	1.40E-04
Insulin signaling pathway	14	3.20E-05	1.40E-04
Acute myeloid leukemia	10	3.60E-05	1.50E-04
Viral carcinogenesis	17	4.30E-05	1.80E-04
C-type lectin receptor signaling pathway	12	4.80E-05	2.00E-04
Central carbon metabolism in cancer	10	5.10E-05	2.10E-04
Platinum drug resistance	10	7.20E-05	2.90E-04
Phospholipase D signaling pathway	14	7.20E-05	2.90E-04
Relaxin signaling pathway	13	7.90E-05	3.10E-04
Cellular senescence	14	1.20E-04	4.70E-04
Yersinia infection	13	1.40E-04	5.30E-04
Diabetic cardiomyopathy	16	1.50E-04	5.40E-04
Estrogen signaling pathway	13	1.50E-04	5.40E-04
Measles	13	1.60E-04	5.60E-04
Apelin signaling pathway	13	1.60E-04	5.60E-04
Hepatocellular carcinoma	14	2.60E-04	8.90E-04
Gap junction	10	3.10E-04	1.00E-03
Adrenergic signaling in cardiomyocytes	13	3.30E-04	1.10E-03
Shigellosis	17	4.00E-04	1.30E-03

	Epstein-Barr virus infection	15	4.70E-04	1.50E-03
	Endometrial cancer	8	5.30E-04	1.70E-03
	MicroRNAs in cancer	19	6.50E-04	2.00E-03
	Progesterone-mediated oocyte maturation	10	9.10E-04	2.80E-03
	Toll-like receptor signaling pathway	10	1.00E-03	3.10E-03
	Influenza A	13	1.10E-03	3.10E-03
	cAMP signaling pathway	15	1.10E-03	3.30E-03
	Chemical carcinogenesis - reactive oxygen species	15	1.20E-03	3.50E-03
	FoxO signaling pathway	11	1.50E-03	4.00E-03
	TNF signaling pathway	10	1.80E-03	4.70E-03
	Aldosterone-regulated sodium reabsorption	6	2.00E-03	5.30E-03
	Autophagy - animal	11	2.50E-03	6.50E-03
	Neutrophil extracellular trap formation	13	2.60E-03	6.60E-03
	Salmonella infection	15	3.50E-03	8.50E-03
	Chagas disease	9	3.70E-03	8.90E-03
	GnRH secretion	7	4.80E-03	1.20E-02
	mTOR signaling pathway	11	5.30E-03	1.20E-02
	Human papillomavirus infection	17	7.90E-03	1.80E-02
	Signaling pathways regulating pluripotency of stem cells	10	8.90E-03	2.00E-02
	cGMP-PKG signaling pathway	10	2.30E-02	4.90E-02
	Coronavirus disease - COVID-19	12	2.90E-02	6.10E-02
	Human T-cell leukemia virus 1 infection	11	4.90E-02	9.60E-02
	Spinocerebellar ataxia	7	1.40E-01	2.60E-01
	NOD-like receptor signaling pathway	8	1.70E-01	3.00E-01
	Type II diabetes mellitus	3	3.20E-01	5.00E-01
	Herpes simplex virus 1 infection	12	7.30E-01	9.30E-01
Annotation Cluster 5	Enrichment Score: 2.93	Count	p-value	Benjamini
	Carbon metabolism	11	5.40E-04	1.70E-03
	Glycolysis / Gluconeogenesis	8	1.30E-03	3.60E-03
	Biosynthesis of amino acids	8	2.40E-03	6.30E-03
Annotation Cluster 6	Enrichment Score: 2.86	Count	p-value	Benjamini
	HIF-1 signaling pathway	20	1.50E-11	4.30E-10
	ErbB signaling pathway	17	1.90E-10	3.90E-09
	Glioma	15	3.10E-09	4.10E-08
	Neurotrophin signaling pathway	17	3.10E-08	3.30E-07
	GnRH signaling pathway	13	2.70E-06	1.60E-05
	Thyroid hormone signaling pathway	14	8.30E-06	4.40E-05
	Cholinergic synapse	13	2.10E-05	1.00E-04
	Inflammatory mediator regulation of TRP channels	12	2.80E-05	1.30E-04

	Long-term potentiation	10	3.60E-05	1.50E-04
	Oocyte meiosis	13	9.10E-05	3.50E-04
	Wnt signaling pathway	14	2.90E-04	9.80E-04
	Gap junction	10	3.10E-04	1.00E-03
	Adrenergic signaling in cardiomyocytes	13	3.30E-04	1.10E-03
	Endometrial cancer	8	5.30E-04	1.70E-03
	cAMP signaling pathway	15	1.10E-03	3.30E-03
	Glucagon signaling pathway	10	1.30E-03	3.60E-03
	Oxytocin signaling pathway	12	1.50E-03	4.00E-03
	Dopaminergic synapse	11	1.60E-03	4.20E-03
	Aldosterone-regulated sodium reabsorption	6	2.00E-03	5.30E-03
	GnRH secretion	7	4.80E-03	1.20E-02
	Amphetamine addiction	7	7.00E-03	1.60E-02
	Circadian entrainment	8	1.00E-02	2.30E-02
	Melanogenesis	8	1.20E-02	2.80E-02
	Aldosterone synthesis and secretion	7	3.40E-02	7.10E-02
	Gastric acid secretion	6	4.00E-02	8.00E-02
	Long-term depression	5	6.10E-02	1.20E-01
	Insulin secretion	6	6.20E-02	1.20E-01
	Cushing syndrome	8	9.00E-02	1.70E-01
	Amoebiasis	6	1.10E-01	2.00E-01
	Endocrine and other factor-regulated calcium reabsorption	4	1.40E-01	2.60E-01
	Glutamatergic synapse	6	1.50E-01	2.70E-01
	Serotonergic synapse	6	1.60E-01	2.80E-01
	Morphine addiction	5	1.90E-01	3.20E-01
	Vascular smooth muscle contraction	6	2.40E-01	3.90E-01
	Parathyroid hormone synthesis, secretion and action	5	2.70E-01	4.30E-01
	Retrograde endocannabinoid signaling	6	3.00E-01	4.80E-01
	GABAergic synapse	4	3.80E-01	5.80E-01
	Thyroid hormone synthesis	3	5.60E-01	7.90E-01
	Salivary secretion	3	6.70E-01	9.10E-01
	Olfactory transduction	5	1.00E+00	1.00E+00
Annotation Cluster 7	Enrichment Score: 1.98	Count	p-value	Benjamini
	Pathways of neurodegeneration - multiple diseases	26	2.80E-04	9.40E-04
	Prion disease	15	7.70E-03	1.80E-02
	Amyotrophic lateral sclerosis	10	5.50E-01	7.90E-01
Annotation Cluster 8	Enrichment Score: 1.66	Count	p-value	Benjamini
	Insulin resistance	10	1.40E-03	3.80E-03
	FoxO signaling pathway	11	1.50E-03	4.00E-03
	TNF signaling pathway	10	1.80E-03	4.70E-03

	Autophagy - animal	11	2.50E-03	6.50E-03
	GnRH secretion	7	4.80E-03	1.20E-02
	mTOR signaling pathway	11	5.30E-03	1.20E-02
	Longevity regulating pathway - multiple species	6	1.80E-02	4.00E-02
	Adipocytokine signaling pathway	6	2.80E-02	5.90E-02
	Non-alcoholic fatty liver disease	9	3.80E-02	7.80E-02
	Carbohydrate digestion and absorption	4	1.10E-01	2.00E-01
	Regulation of lipolysis in adipocytes	4	1.70E-01	3.00E-01
	Longevity regulating pathway	5	1.80E-01	3.10E-01
	AMPK signaling pathway	6	1.80E-01	3.10E-01
	Small cell lung cancer	5	1.90E-01	3.30E-01
	Alcoholic liver disease	6	2.80E-01	4.40E-01
Annotation Cluster 9	Enrichment Score: 0.58	Count	p-value	Benjamini
	Purine metabolism	7	9.70E-02	1.90E-01
	Drug metabolism - other enzymes	4	3.20E-01	5.00E-01
	Nucleotide metabolism	4	3.50E-01	5.40E-01
	Pyrimidine metabolism	3	4.20E-01	6.30E-01