

A transversal approach to predict gene product networks from ontology-based similarity

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Supplementary information: KEGG comparison

Network	Gene product	Gene Ontology profile	Kegg gene product	Kegg annotation (Level 2)
1	ALG8 - RPL41 - RPL7A - RPL35A - RPL39 - RPS3 - RPS7 - MAN2A1 - RPL13A - EIF4A2 - EIF3S8 - EIF3S2	cellular biosynthesis(66) cellular macromolecule metabolism(66) macromolecule biosynthesis(66) protein metabolism(66) regulation of biosynthesis(3)	RPL41 - RPL7A - RPL35A - RPL39 - RPS3 - RPS7 - RPL13A	Translation
			EIF4A2- EIF3S8- EIF3S2	Transcription
			ALG8 - MAN2A	Glycan Biosynthesis and Metabolism
2	GLS - GATM - ASS - CPS1 - GLUL - ODC1 - SEPHS2 - SMS	amine metabolism(10) amino acid and derivative metabolism(10) organic acid metabolism(8) cellular biosynthesis(6) nitrogen compound biosynthesis(1) sulfur metabolism(1)	GLS - GATM - ASS - CPS1 - GLUL - ODC1 - SEPHS2 - SMS	Amino acid metabolism Metabolism of others amino acids

		arginine metabolism(1)		
3	APOM - APOC3 - APOA1 - APOB - UGT2B17 - AKR1C3 - ACAS2 - HMGCS1 - MBTPS1 - UBE2D1 - MEP1A - RNF128	lipid metabolism(18) cellular lipid metabolism(17) cellular macromolecule metabolism(8) protein metabolism(8) biopolymer catabolism(6) cellular catabolism(6) macromolecule catabolism(6) alcohol metabolism(5)	UGT2B17 - AKR1C3 - HMGCS1 – ACAS2	Lipid metabolism
			UBE2D1	Folding, Sorting and Degradation
4	HMGA2 - H3F3B - H2AFY - NAP1L4 - NAP1L1 - MCM3 - TRIM28 - PIAS4 - G22P1 - HMGB1	nucleobase, nucleoside, nucleotide and nucleic acid metabolism(14) DNA metabolism(12) organelle organization and biogenesis(10) cellular macromolecule metabolism(7) protein metabolism(7) regulation of nucleobase, nucleoside, nucleotide and nucleic acid metabolism(5) response to DNA damage stimulus(1)	MCM3	Cell Growth and Death
			PIAS4	Signal Transduction
5	CS - GAPD - LDHB - ACO1	generation of precursor metabolites and energy(4) carbohydrate metabolism(4) cellular catabolism(4) cellular macromolecule metabolism(4) cofactor metabolism(1) alcohol metabolism (1)	CS - LDHB - ACO1	Carbohydrate Metabolism

		macromolecule catabolism(1)		
6	ATP7B - SLC26A3 - SLC11A2 - TF	ion transport(6)	none	none
7	VAPB - HSPA9B - TRIP12 - NKTR - TRAP1	cellular macromolecule metabolism(10) protein metabolism (10)	HSPA9B	Signal Transduction Immune System
8	HSPD1 - KPNB1 - CALR	protein transport(3) establishment of protein localization(3) intracellular transport(3) cellular macromolecule metabolism(1) protein metabolism(1)	HSPD1	Metabolic Disorders Neurodegenerative Disorders
			CALR	Immune System
9	RNASE4 - IVNS1ABP - SF3B2	RNA metabolism (3) nucleobase, nucleoside, nucleotide and nucleic acid metabolism (3)	none	none
10	KRT8 -TUBA1	organelle organization and biogenesis	KRT8 - TUBA1	Cell Communication
11	NME2 - NME1	nucleobase, nucleoside, nucleotide and nucleic acid metabolism cellular biosynthesis negative regulation of cellular physiological process regulation of cell proliferation regulation of cell cycle	NME1 - NME2	Nucleotide Metabolism
12	ADH4 - GPD1	alcohol metabolism	ADH4 - GPD1	Lipid metabolism
13	FN1 - SERPINA1	defense response response to pest, pathogen or	FN1	Cell Communication Cell Motility

		parasite response to external biotic stimulus		Signaling Molecules and Interaction
			SERPINA1	Immune System
14	ZW10 - MMS19L	M phase mitotic cell cycle sister chromatid segregation	none	none
15	SLC2A5 - SLC2A3	carbohydrate transport	none	none
16	CDC2 - STK6	phosphorus metabolism cellular macromolecule metabolism protein metabolism M phase mitotic cell cycle	CDC2	Cell Growth and Death Cell Communication
17	AKR1C1 - NDRG1	response to abiotic stimulus	AKR1C1	Xenobiotics Biodegradation and Metabolism
18	VTN - AFP	defense response	VTN	Cell Communication Signaling Molecules and Interaction