

translation	translational elongation		formation of cytoplasmic translation initiation complex		mitochondrial translational termination		mRNA splicing, via spliceosome		mitochondrial translational elongation	
	lipid biosynthetic process	protein deubiquitination		negative regulation of DNA-templated transcription		positive regulation of transcription by RNA polymerase II		tricarboxylic acid cycle		
		respiratory electron transport	post-translational protein modification		negative regulation of histone H3-K27 methylation		negative regulation of translation		proton motive force-driven ATP synthesis	
translation										

translational initiation

cytoplasmic translation

translational
elongation

formation of
cytoplasmic
translation
initiation
complex

mitochondrial
translational
termination

mRNA
splicing,
via
spliceosome

mitochondrial
translational
elongation

lipid
biosynthetic
process
on
respiratory
electron
transport

protein deubiquitination	
post-translational protein modification	

negative regulation of DNA-templated transcription	negative regulation of histone H3-K27 methylation	negative regulation of transcription
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positive regulation of transcription by RNA polymerase II	proton motive force-driven ATP synthesis
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tricarboxylic acid cycle	
positive regulation of glycolytic process	

transport chain	ATP metabolic process	negative regulation of transcription by RNA polymerase II
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positive regulation of translational elongation	positive regulation of translational elongation
membrane protein ectodomain proteolysis	membrane protein ectodomain proteolysis
purine ribonucleoside salvage	purine ribonucleoside salvage

signal peptide processing	cholesterol sulfatase metabolic process
mitochondrial translation	positive regulation of kinase activity
phospholipid biosynthetic process	amylase precursor proteolysis catabolic process

chondroitin sulfate proteoglycan biosynthetic process	positive regulation of protein deubiquitination	
positive regulation of lipid metabolic process	regulation of lipid metabolic process	peptide hydrolysis

protein N-linked glycosylation via asparagine	regulation of transcription by RNA polymerase II
<p> acyl-proline oxylase to xy-L-proline </p>	<p> RNA splicing </p>

<p>protein insertion into mitochondrial inner membrane</p>	<p>protein targeting to ER</p>
<p>protein processing involved in protein targeting to mitochondria</p>	<p>amino acid transport</p>

protein insertion into mitochondrial outer membrane	positive of established protein to
protein targeting to ER	intra- vesicle- trans
protein targeting involved in protein targeting to mitochondrion	regula- tion late en- trans
amino acid transport	revol- ution trans

Membrane

vacuolar transport	
clathrin-dependent endocytosis	
regulation of neurotransmitter receptor localization to postsynaptic membrane	
vesicle-mediated transport in synapse	
negative regulation of sodium ion transport	

toxin	transport
ribosomal large subunit export from nucleus	positive regulation of telomerase RNA localization to Cajal body
phospholipid efflux	retrograde transport, endosome to Golgi

retrograde
vesicle-mediated
transporting
to the placental
reticulum

<p>protein insertion into mitochondrial inner membrane</p>	<p>protein targeting to ER</p>
<p>protein processing involved in protein targeting to mitochondria</p>	<p>amino acid transport</p>

positive regulation of establishment of protein localization to telomere	
intra-Golgi vesicle-mediated transport	
regulation of late endosome transport	
reverse cholesterol transport	

cholesterol efflux	V
regulation of proton transmembrane transport	clathr ne recepto to
neurotransmitter receptor transport to postsynaptic membrane	vesic f
vesicle docking involved in exocytosis	re s

vacuolar transport	
thrin-dependent endocytosis	la e
reuptake of neurotransmitter for localization postsynaptic membrane	u
particle-mediated transport in synapse	p
negative regulation of sodium ion transport	

toxin transport

ribosomal large subunit export from nucleus

positive regulation of telomerase RNA localization to Cajal body

phospholipid efflux

retrograde transport, endosome to Golgi

SRP-dependent cotranslational protein targeting to membrane	protein import into mitochondrial matrix	protein insertion into mitochondrial inner membrane	positive regulation of establishment of protein localization to telomere	cholesterol efflux	vacuolar transport	toxin transport
		protein targeting to ER	intra-Golgi vesicle-mediated transport	regulation of protein transmembrane transport	clathrin-dependent endocytosis	ribosomal large subunit export from nucleus
			regulation of protein transmembrane transport		regulation of neurotransmitter receptor localization to postsynaptic membrane	positive regulation of telomerase RNA localization to Cajal body
			late endosome transport		neurotransmitter receptor transport to postsynaptic membrane	vesicle-mediated transport in synapse
intracellular protein transport	vesicle-mediated transport	protein processing involved in protein targeting to mitochondrion	reverse cholesterol transport	vesicle docking involved in exocytosis	negative regulation of sodium ion transport	retrograde transport, endosome to Golgi
		retrograde vesicle-mediated transport from Golgi to endoplasmic reticulum	endoplasmic reticulum to Golgi retrograde transport	protein processing involved in protein targeting to ER	regulation of protein transmembrane transport	regulation of neurotransmitter receptor localization to postsynaptic membrane

ribosomal large subunit assembly	mitochondrial respiratory chain complex I assembly	ribosomal small subunit assembly	proteasome assembly
rRNA processing	maturation of LSU-rRNA from tricistronic rRNA transcript (SSU-rRNA, 5S rRNA, LSU-rRNA)	membrane organization	mature ribosome assembly
GO: cellular organization	positive regulation of protein import into nucleus, lipoprotein particle assembly	GO: molecular function	ribosomal large subunit biogenesis
			negative regulation of gene expression, transcription

	transcription assembly		proliferation	progenesis	epigenetic
maturation of SSU-rRNA from tricistronic rRNA transcript (SSU-rRNA, 5.8S rRNA, LSU-rRNA)	high-density lipoprotein particle assembly	cell junction assembly	regulation of protein-containing complex assembly	negative regulation of protein-containing complex assembly	
eye pigment granule organization	negative regulation of focal adhesion assembly	collagen fibril organization	positive regulation of lamellipodium assembly	negative regulation of cell growth	positive regulation of extracellular matrix assembly
regulation of transcription from	endoplasmic reticulum		response to	cellular response	

transcription from RNA polymerase II promoter in response to hypoxia	unfolded protein response	endoplasmic reticulum stress	response to unfolded protein
cellular response to glucose starvation	response to hypoxia	cellular response to BMP stimulus	regulation of transforming growth factor beta receptor signaling
IRE1-mediated unfolded protein response	response to starvation	cellular response to hypoxia	cellular response to hypoxia
cellular response to antibiotic	response to unfolded protein	cellular response to interleukin-7	negative regulation of IRE1-mediated unfolded protein response
		response to nutrient	

nuclear-transcription
mRNA cap
process
nonsense-mediated
decay

nucleosome
ubiquitin-proteasome
protein catabolic
process

proteasome
catabolic

transcribed	1
catabolic	
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regulation of mRNA stability	2010
ribbed mRNA sense-mediated	
late endosomal microautophagy	2010
SCF-dependent proteasomal ubiquitin-dependent protein catabolic process	2010

phagosome maturation	anaphase-complex catabolic
catabolic decay	protein involve prote cata proc
regulation of protein catabolic process	positi regul o autoph
mRNA catabolic process	ubiquitin-o protein o proc

regulate hemostasis differently	
regulation of fat metabolism	
metabolism	

Regulation of hematopoietic stem cell differentiation

decidualization	epithelial b involve more
multicellular organism growing	n e m
gland development	cell differentiation
regulation of cell shape	positive regulation of dendritic spine development

<p>thelial tube branching involved in lung morphogenesis</p>	<p>limb formation</p>
<p>positive regulation of epithelial to mesenchymal transition</p>	<p>bone mineralization</p>
<p>neuron development</p>	<p>epithelial cell development</p>
<p>striated muscle cell differentiation</p>	<p>transcription</p>

NIK/NF-kappaB signaling

positive regulation of canonical Wnt signaling pathway

Rab protein signal transduction

integrin-mediated signaling pathway

positive regulation of signal transduction by p53 class mediator

nodal

positive regulation of integrin-mediated signaling pathway

cell redox	protein stabilization	cellular iron ion homeostasis
homeostasis	cellular response to glucose stimulus	regulation of peroxisome size
fatty acid homeostasis		

antigen processing and presentation of exogenous peptide antigen via MHC class I, TAP-dependent

phosphatidylinositol 3-kinase signaling	negative regulation of MAPK cascade	signaling pathway	Wnt signaling pathway planar cell polarity pathway
regulation of cellular amino acid metabolism		D-xylose metabolic process	glycine biosynthetic process, by transamination of glyoxylate
regulation of cellular amino acid metabolism		regulation of glucose metabolic process	
fatty acid beta-oxidation using acyl-CoA dehydrogenase	citrate metabolic process	glycerol ether metabolic process	carbohydrate metabolic process

protein folding	'de novo' post-translational protein folding
protein refolding	chaperone-mediated protein folding
viral transcription	

Category	Percentage
negative regulation of G2/M transition of mitotic cell cycle	15.5%
positive regulation of epithelial cell migration	10.5%
positive regulation of vesicle transport and microtubule cytoskeleton organization	10.5%
positive regulation of cell population proliferation	10.5%
positive regulation of cell population proliferation	10.5%

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