

SPOT	UniProt ID ^u	SCORE/ MATCHES	SEQ. COV.	PROTEIN	PROTEIN CLASS ^p	LOCALIZATION ^u	MOLECULAR FUNCTION ^u	BIOLOGICAL PROCESS ^u
a1	P02111 (HBB_ORNAN)	94/6	60%	Hemoglobin subunit beta	Plasma proteins, Predicted intracellular proteins, Transporters, Disease related genes, FDA approved drug targets	INTRACELLULAR (cytosol, erythrocytes)	Heme binding Metal ion binding Oxygen binding Oxygen carrier activity	Oxygen transport Transport
a3	P0DM93 (APOA2_LEPW E)	56/4	38%	Apolipoprotein A-II	Plasma proteins, Predicted secreted proteins, Predicted intracellular proteins, Cancer-related genes, Candidate cardiovascular disease genes,	EXTRACELLULAR (secreted)	Lipid binding	Lipid transport Lipoprotein metabolism
a9	Q9GK13 (MUTA_BOVIN)	60/6	18%	Methylmalonyl-CoA mutase, mitochondrial	Plasma proteins, Predicted intracellular proteins, Disease related genes, Enzymes, FDA approved drug targets	INTRACELLULAR (mitochondrion matrix)	GTPase activity Cobalamin binding Metal ion binding Catalytic activity	Isomerase Metabolism
a16	Q9GK13 (MUTA_BOVIN)	88/10	21%	Methylmalonyl-CoA mutase, mitochondrial	Plasma proteins, Predicted intracellular proteins, Disease related genes, Enzymes, FDA approved drug targets	INTRACELLULAR (mitochondrion matrix)	GTPase activity Cobalamin binding Metal ion binding Catalytic activity	Isomerase Metabolism

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a42	Q9GK13 (MUTA_BOVIN)	102/8	26%	Methylmalonyl-CoA mutase, mitochondrial	Plasma proteins, Predicted intracellular proteins, Disease related genes, Enzymes, FDA approved drug targets	INTRACELLULAR (mitochondrion matrix)	GTPase activity Cobalamin binding Metal ion binding Catalytic activity	Isomerase Metabolism
a11	Q3ZCI9 (TCPQ_BOVIN)	85/9	20%	T-complex protein 1 subunit theta	Plasma proteins, Predicted intracellular proteins	INTRACELLULAR (cytoskeleton, cytosol)	ATP binding Unfolded protein binding	Protein folding
a13	Q3ZCI9 (TCPQ_BOVIN)	71/9	25%	T-complex protein 1 subunit theta	Plasma proteins, Predicted intracellular proteins	INTRACELLULAR (cytoskeleton, cytosol)	ATP binding Unfolded protein binding	Protein folding
a12	Q0V8H6 (MOV10_BOVIN)	82/11	13%	Putative helicase MOV-10	Plasma proteins, Predicted intracellular proteins, Enzymes,	INTRACELLULAR (cytosol)	ATP binding Helicase activity RNA binding	miRNA-mediated gene silencing mRNA cleavage
a14	M3XYN3 (APOA1_MUSPF)	67/4	19%	Apolipoprotein A-I	Plasma proteins, Predicted secreted proteins, Predicted intracellular proteins, Disease related genes, Cancer-related genes, Candidate cardiovascular disease genes,	EXTRACELLULAR (secreted)	Lipid binding	Cholesterol metabolism & transport Lipid metabolism & transport Lipoprotein metabolic process
a17	A4FUD9 (MCM3_BOVIN)	86/10	19%	Minichromosome maintenance complex component 3	Plasma proteins, Predicted intracellular proteins, Cancer-related genes,	INTRACELLULAR (nucleus)	ATP binding DNA binding Helicase activity	Cell cycle DNA replication initiation

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					Enzymes,			
a19	P11974 (KPYM_RABIT)	90/8	19%	Pyruvate kinase PKM	Plasma proteins, Predicted intracellular proteins, Cancer-related genes, Enzymes,	INTRACELLULAR (cytosol)	Kinase activity ATP binding Magnesium & potassium ion binding	Glycolysis
a20	P08907 (AATM_HORSE)	59/13	27%	Aspartate aminotransferase, mitochondrial	Plasma proteins, Predicted secreted proteins, Enzymes, Transporters, Cancer-related genes, Candidate cardiovascular disease genes,	INTRACELLULAR (mitochondrion matrix)	Transferase activity Pyridoxal phosphate binding	Aspartate metabolic process Biosynthetic process
a22	Q6UR05 (MRP1_CANLF)	99/15	12%	Multidrug resistance- associated protein 1	Plasma proteins, Predicted membrane proteins, Cancer-related genes, Transporters, FDA approved drug targets,	INTRACELLULAR (cell membrane)	ATP binding ATPase activity Transporter activity	Drug/Xenobiotic transmembrane transport Glutathione transmembrane transport
a31	P07318 (CRBB1_BOVI N)	76/7	30%	Beta-crystallin B1	Plasma proteins, Predicted intracellular proteins, Disease related genes,	INTRACELLULAR	Structural constituent of eye lens	Visual perception
a57	E1BPX4 (MCM8_BOVI N)	85/9	16%	DNA helicase MCM8	Plasma proteins, Predicted intracellular proteins, Enzymes,	INTRACELLULAR (nucleus)	ATP binding DNA binding Helicase activity	Cell cycle Initiation of replication DNA repair

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					Disease related genes, Potential drug targets,			Gamete generation
a59	P02769 (ALBU_BOVIN)	83/16	30%	Serum albumin	Plasma proteins, Predicted secreted proteins, Predicted intracellular proteins, Cancer-related genes, Candidate cardiovascular disease genes, Disease related genes,	EXTRACELLULAR (secreted)	Substance binding & transport	Blood transport Oncotic pressure maintance
a60	P02769 (ALBU_BOVIN)	78/17	28%	Serum albumin	Plasma proteins, Predicted secreted proteins, Predicted intracellular proteins, Cancer-related genes, Candidate cardiovascular disease genes, Disease related genes,	EXTRACELLULAR (secreted)	Substance binding & transport	Blood transport Oncotic pressure maintance
a25	P07435 (OBP_BOVIN)	60/6	44%	Odorant-binding protein	Predicted secreted proteins,	EXTRACELLULAR (secreted)	Small molecule binding	Response to stimulus Sensory perception of smell
a33	P07435 (OBP_BOVIN)	69/10	55%	Odorant-binding protein	Predicted secreted proteins,	EXTRACELLULAR (secreted)	Small molecule binding	Response to stimulus Sensory perception of

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								smell
a45	P79124 (SPL2A_BOVIN)	65/10	61%	Short palate, lung and nasal epithelium carcinoma-associated protein 2A	Predicted secreted proteins,	EXTRACELLULAR (secreted)	Lipid binding	Unknown
a47	Q1LZC5 (ANR54_BOVIN)	70/7	15%	Ankyrin repeat domain-containing protein 54	Predicted secreted proteins, Predicted intracellular proteins,	INTRACELLULAR (cytosol, nucleus, secreted)	Protein-containing complex binding Protein kinase regulator activity	Nucleo-cytoplasmic transport Regulation of erythrocyte differentiation Intracellular signal transduction
a56	P80025 (PERL_BOVIN)	83/10	14%	Lactoperoxidase	Predicted secreted proteins, Predicted intracellular proteins, Enzymes,	EXTRACELLULAR (milk, saliva) INTRACELLULAR (cytosol of salivary gland)	Calcium ion binding Heme binding Thiocyanate peoxidase activity	Antibacterial humoral response Response to oxidative stress Sensory perception
a12	Q2HJ63 (CAHM2_BOVIN)	72/7	28%	Calcium homeostasis modulator protein 2	Predicted membrane proteins, Transporters,	INTRACELLULAR (cell membrane)	Cation channel activity	Ion transmembrane transport
a18	Q01888 (GDC_BOVIN)	84/8	26%	Graves disease carrier protein	Predicted membrane proteins, Predicted intracellular proteins, Transporters,	INTRACELLULAR (mitochondrion inner membrane)	Transmembrane transporter activity	Mitochondrial transport
a26	Q29RT8	60/4	17%	Phospholipid	Predicted membrane	INTRACELLULAR	Lipid phosphatase	Phospholipid

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	(PLPR2_BOVIN)			phosphatase-related protein type 2	proteins, Enzymes,	(cell membrane)	activity Phosphatide phosphatase activity	dephosphorylation Phospholipid metabolism Signal transduction
a41	Q95L74 (CY24B_BISBI)	75/8	18%	Cytochrome b-245 heavy chain	Predicted membrane proteins, Transporters, Disease related genes, Potential drug targets,	INTRACELLULAR (plasma membrane in subsets of immune cells)	Metal ion binding Oxidoreductase activity Voltage-gated ion channel activity	Immune response Transmembrane transport (ions and electrons)
a50	Q7YS88 (RAMP3_PIG)	84/7	17%	Receptor activity-modifying protein 3	Predicted membrane proteins, FDA approved drug targets,	INTRACELLULAR (cell membrane)	Protein transporter activity	Receptor Intracellular protein transport
a2	A4IFI1 (CC157_BOVIN)	97/9	19%	Coiled-coil domain-containing protein 157	Predicted intracellular proteins,	INTRACELLULAR	Unknown	Unknown
a8	A4IFI1 (CC157_BOVIN)	133/13	23%	Coiled-coil domain-containing protein 157	Predicted intracellular proteins,	INTRACELLULAR	Unknown	Unknown
a21	A4IFI1 (CC157_BOVIN)	65/8	14%	Coiled-coil domain-containing protein 157	Predicted intracellular proteins,	INTRACELLULAR	Unknown	Unknown
a4	Q29460 (PA1B3_BOVIN)	66/6	23%	Platelet-activating factor acetylhydrolase IB subunit gamma	Predicted intracellular proteins, Enzymes,	INTRACELLULAR (cytoplasmic and membranous expression in several tissues, including subsets	Esterase activity Identical protein binding Platelet-activating factor acetyltransferase	Brain development Lipid catabolic process Spermatogenesis

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						of immune cells)	activity	
a6	Q2TBL4 (RPC3_BOVIN)	84/9	27%	DNA-directed RNA polymerase III subunit RPC3	Predicted intracellular proteins, RNA polymerase related proteins,	INTRACELLULAR (nucleus)	RNA polymerase activity Single-stranded DNA binding	Transcription Immune response
a7	Q29RJ2 (TBC24_BOVIN)	73/6	21%	TBC1 domain family member 24	Predicted intracellular proteins, Disease related genes,	INTRACELLULAR (cytosol)	GTPase activation	Unknown
a10	P79106 (PAFA2_BOVIN)	74/9	22%	Platelet-activating factor acetylhydrolase 2, cytoplasmic	Predicted intracellular proteins, Enzymes,	INTRACELLULAR (ER membrane)	Esterase activity	Lipid catabolic process
a13	P79106 (PAFA2_BOVIN)	78/8	23%	Platelet-activating factor acetylhydrolase 2, cytoplasmic	Predicted intracellular proteins, Enzymes,	INTRACELLULAR (ER membrane)	Esterase activity	Lipid catabolic process
a15	Q0VC16 (TGO1_BOVIN)	60/13	8%	Transport and Golgi organization protein 1 homolog	Predicted intracellular proteins,	INTRACELLULAR (ER membrane)	Lipoprotein transporter activity	ER-Golgi transport (lipoprotein, protein transport) Exocytosis
a23	O97557 (TUFT1_PIG)	58/11	47%	Tuftelin	Predicted intracellular proteins,	INTRACELLULAR (cytosol, secreted)	Unknown	Biom mineralization Biom mineral tissue development
a24	Q32KZ9 (TEKT1_BOVIN)	112/11	35%	Tektin-1	Predicted intracellular proteins,	INTRACELLULAR (cytoskeleton)	Unknown	Cilium assembly Cilium movement involved in cell motility

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								Flagellated sperm motility
a27	Q17R01 (FXL14_BOVIN)	62/6	33%	F-box/LRR-repeat protein 14	Predicted intracellular proteins,	INTRACELLULAR (cytosol)	Ubiquitin-protein transferase activity	Ubiquitin-dependent protein catabolic process
a28	A4FUG8 (RAB2_BOVIN)	78/9	19%	Rab GTPase-binding effector protein 2 (Rabaptin)	Predicted intracellular proteins,	INTRACELLULAR (endosome, cytosol)	Growth factor activity GTPase activator activity	Endocytosis Protein transport
a32	A5D7B1 (RSAD1_BOVIN)	79/9	25%	Radical S-adenosyl methionine domain-containing protein 1, mitochondrial	Predicted intracellular proteins,	INTRACELLULAR (mitochondrion)	Metal ion binding Oxidoreductase activity	Porphyrin-containing compound biosynthesis
a37	Q1JQ97 (BBS4_BOVIN)	70/7	20%	Bardet-Biedl syndrome 4 protein homolog	Predicted intracellular proteins, Disease related genes,	INTRACELLULAR (cytoskeleton, cell membrane, cytosol of lymphoid cells)	Alpha & beta tubulin binding Dynactin binding Microtubule motor activity	Cilium biogenesis/degradation Protein transport
a38	P13214 (ANXA4_BOVIN)	64/14	46%	Annexin A4	Predicted intracellular proteins, Cancer-related genes,	INTRACELLULAR (cell membrane, cytosol, nucleus of epithelial tissues)	Calcium-dependent protein & phospholipid binding Calcium ion binding Carbohydrate, chondroitin sulphate and	Epithelial cell differentiation Notch signaling pathway Regulation of transcription

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							heparin binding	
a40	Q2KJ25 (PSD12_BOVIN)	118/12	35%	26S proteasome non-ATPase regulatory subunit 12	Predicted intracellular proteins,	INTRACELLULAR (cytosol, nucleus)	Unknown	Proteasome-mediated ubiquitin-dependent protein catabolic process
a51	Q2HJG4 (TDRD3_BOVIN)	89/10	17%	Tudor domain-containing protein 3	Predicted intracellular proteins,	INTRACELLULAR (nucleus, cytosol)	Chromatin binding Methylated histone binding Transcription coactivator activity	Chromatin organization (chromatin regulator)

^u – data obtained from <https://www.uniprot.org/>

^p – data obtained from <https://www.proteinatlas.org/>

Matches - the number of peptides in the MS spectrum that match the sequences from the database.

SEQ COV = sequence coverage - what percentage of the protein found in the study is covered by peptides from the MS spectrum.