

MARKERS for the CELLULAR ORGANELLES

PRIMARY ANTIBODIES FOR CELL BIOLOGY

official distributor

SZABO-SCANDIC HandelsgmbH
Quellenstraße 110, A-1100 Wien
T. +43(0)1 489 3961-0
F. +43(0)1 489 3961-7
mail@szabo-scandic.com
www.szabo-scandic.com



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 **ATLAS ANTIBODIES**

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OVERVIEW OF ATLAS ANTIBODIES' PRODUCTS



Precise. Accurate. Targeted.

PrecisA Monoclonals™ are mouse monoclonal primary antibodies developed against a number of carefully selected targets. Clones are selected to recognize only unique non-overlapping epitopes and isotypes. Available in **25 µL** and **100 µL** unit sizes.

The product numbers of PrecisA Monoclonals start with "**AMAbxxxxx**"



Atlas Antibodies Advanced Polyclonals.

Triple A Polyclonals™ are rabbit polyclonal primary antibodies developed within the Human Protein Atlas project. IHC characterization data from 44 normal and 20 cancer tissues is available on the Human Protein Atlas portal. Available in **25 µL** and **100 µL** unit sizes.

The product numbers of TripleA Polyclonals start with "**HPAxxxxx**"

PrEST Antigens

PrEST Antigens™ are the immunogens used for the generation of Triple A Polyclonals and PrecisA Monoclonals, for use as blocking agents and positive assay controls together with the corresponding antibody. The protein-specific PrEST sequences are designed to have a sequence identity as low as possible to other human proteins. The product numbers of PrEST control antigens start with "**APrEST**" and they are specified on the product pages for all antibodies under the tab "related products".

[Discover more](#)

ENHANCED VALIDATION



At Atlas Antibodies, we extensively validate our antibodies in IHC, WB, and ICC-IF. Enhanced Validation is performed as an additional layer of security in an application and context-specific manner.

Enhanced validation offers increased security of antibody specificity in a defined context. This is ensured by using the ideal validation method for each combination of protein, sample, and application.

Enhanced Validation follows the guidelines proposed by the International Working Group for Antibody Validation (IWGAV).

Uhlen, M., Bandrowski, A., Carr, S. et al. A proposal for validation of antibodies. Nat Methods 13, 823–827 (2016).

[Discover more](#)

THE HUMAN PROTEIN ATLAS



Atlas Antibodies and the Human Protein Atlas project.

Atlas Antibodies has a very special story. The company was founded by researchers from the prestigious Human Protein Atlas (HPA) project, who wanted to make the unique antibodies used in the project available to fellow researchers worldwide.

The HPA is a Swedish-based program initiated in 2003 with the aim to map all the human proteins in cells, tissues and organs using an integration of various omics technologies, including antibody-based imaging, mass spectrometry-based proteomics, transcriptomics and systems biology.

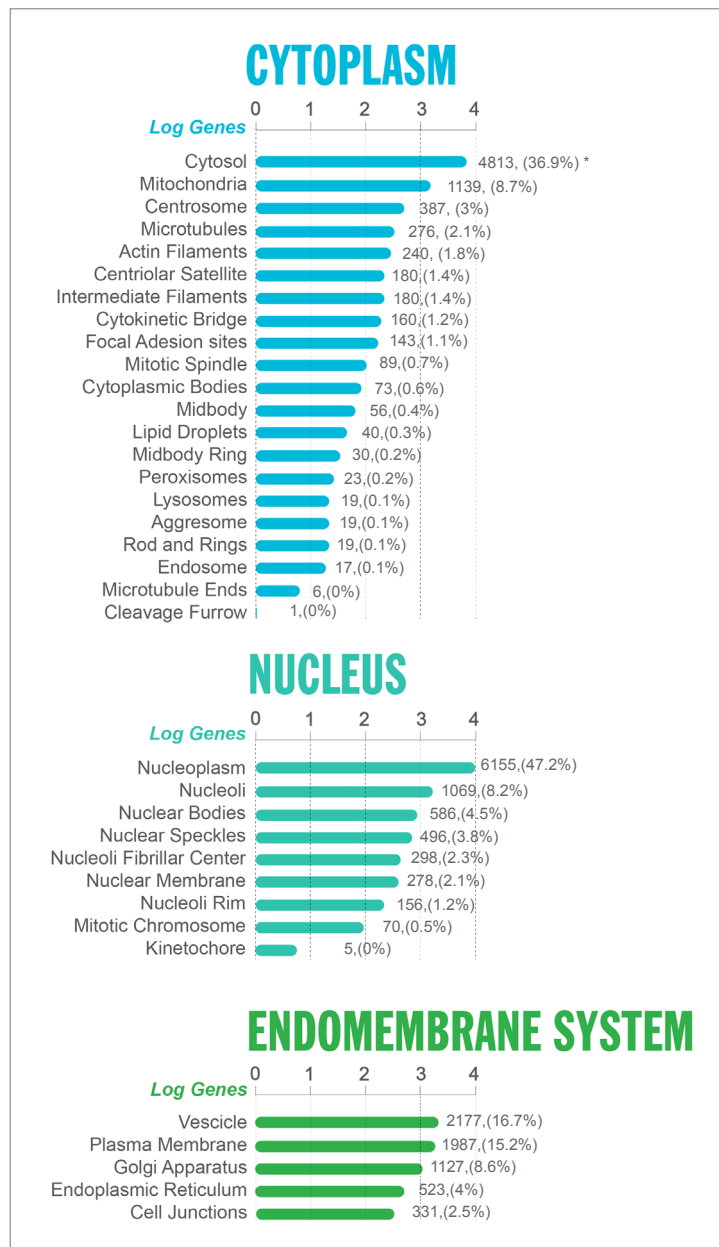
All the data is open access to allow scientists both in academia and industry to freely access the data for exploration of the human proteome.

The HPA consists of 10 separate sections, each focusing on a particular aspect of the genome-wide analysis of the human proteins:

- The **Tissue section**, showing the distribution of the proteins across all major tissues and organs in the human body.
- The **Brain section**, exploring the distribution of proteins in various regions of the mammalian brain.
- The **Single Cell Type section**, showing expression of protein-coding genes in single human cell types based on scRNA-seq.
- The **Tissue Cell Type section**, showing expression of protein-coding genes in human cell types based on bulk RNAseq data.
- The **Pathology section**, showing the impact of protein levels for the survival of patients with cancer.
- The **Immune Cell section**, showing expression of protein-coding genes in immune cell types.
- The **Blood Protein section**, describing proteins detected in blood and proteins secreted by human tissues.
- The **Subcellular section**, showing the subcellular localization of proteins in single cells.
- The **Cell Line section**, showing expression of protein-coding genes in human cell lines.
- The **Metabolic section**, exploring expression of protein-coding genes in the context of the human metabolic network.

[Discover more](#)

DISTRIBUTION AND CLASSIFICATION OF 13,041 GENES ACROSS 35 ORGANELLES AND SUBCELLULAR STRUCTURES



The Subcellular section of the Human Protein Atlas provides high-resolution insights into the expression and spatiotemporal distribution of proteins encoded by 13041 genes (65% of the human protein-coding genes).

Most proteins are found in the nucleus, followed by the cytosol and vesicles, which consist of transport vesicles as well as small membrane-bound organelles like endosomes or peroxisomes. 56% (n=7329) of the proteins were detected in more than one location (multilocalizing proteins), and 24% (n=3193) displayed single-cell variation in expression level or spatial distribution.

*** Proteins, (%)**
Nr of total encoded proteins 13041 (100%)

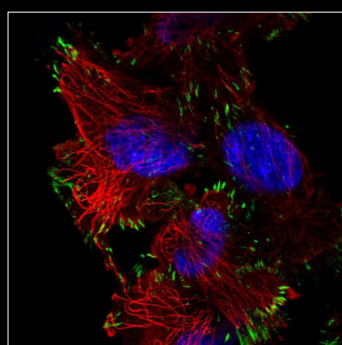
Note that one protein can localize to more than one compartment.

Source:
The Human Protein Atlas (proteinallas.org)

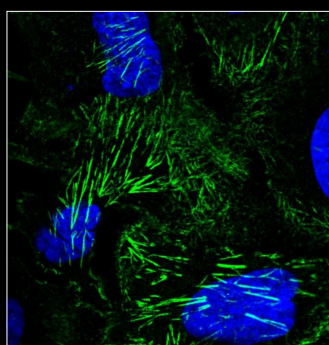
[Discover more](#)

CYTOPLASM: ACTIN FILAMENTS - FOCAL ADHESION SITES

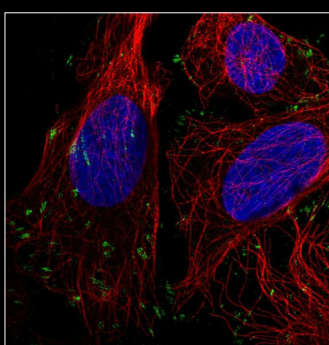
Representative stainings of actin filaments and focal adhesion sites using Atlas Antibodies' products (green).



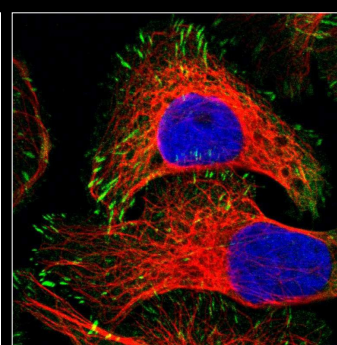
Anti-ASAH2 (HPA061171)
U-251 MG, focal adhesion sites



Anti-SEPT9 (HPA050627)
U-2 OS cells, actin filaments



Anti-VCL (HPA063777)
U-2 OS cells, focal adhesion sites



Anti-ZYX (HPA004835)
U-2 OS cells, focal adhesion sites

Actin filaments and focal adhesions are the main regulators of cellular morphology and motility.

Actin filaments, in the form of microfilaments, are one of three major cytoskeleton components. In addition, actin forms thin filaments, which are part of the contractile apparatus in muscle cells. Focal adhesions are large protein complexes that link the actin cytoskeleton to the extracellular matrix.

Actin filaments and focal adhesion sites provide a necessary structural framework and signal transduction system that plays essential roles in cell morphology and polarity, organization of organelles, motility, mitosis, cytokinesis, and cell signaling.

Dysfunction of proteins in the actin and focal adhesion proteomes have been linked to several severe diseases, including muscular disorders and cancers.

363 genes (2% of all protein-coding human genes) have been shown to encode proteins that localize to actin filaments or focal adhesion sites.

Roughly 83% (n=300) of the proteins that localize to actin filaments also localize to at least one additional cellular compartment.

2% (363 proteins) of all human proteins have been experimentally detected in the actin filaments by the Human Protein Atlas.

300 proteins in the actin filaments have multiple locations.

37 proteins in the actin filaments show a cell-to-cell variation. Of these, 34 show a variation in intensity and 3 a spatial variation.

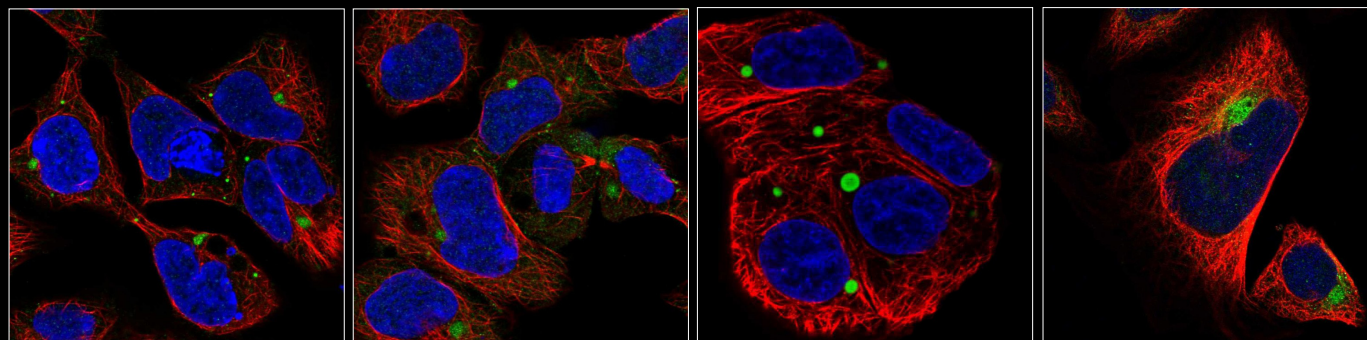
Selection of antibodies suitable as markers for the actin filaments and focal adhesion sites.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	Control Antigen
Anti-ASAH2	N-acylsphingosine amidohydrolase 2	HPA061171	✓	✓	✓	85%	83%	APrEST88313
Anti-CNN3	calponin 3, acidic	HPA051237*	✓	✓	✓	93%	92%	APrEST87577
Anti-FGD4	FYVE, RhoGEF and PH domain containing 4	HPA039235	✓		✓	53%	52%	APrEST81123
Anti-PXN	paxillin	HPA051309		✓	✓	83%	84%	APrEST89636
Anti-SEPTIN9	septin 9	HPA042564*	✓	✓	✓	86%	84%	APrEST83793
		HPA050627			✓	75%	77%	APrEST89624
Anti-TNS1	tensin 1	HPA036089*	✓	✓		74%	74%	APrEST79566
Anti-VCL	vinculin	HPA063777*		✓	✓	98%	98%	APrEST90051
		HPA002131*	✓	✓		99%	99%	APrEST84522
Anti-ZYX	zyxin	AMAb90992	✓		✓	84%	85%	APrEST86861
		HPA004835*	✓		✓	84%	85%	APrEST86861

* Enhanced Validation

CYTOPLASM: AGGRESOME

Representative stainings of the aggresome in different cell lines using Atlas Antibodies' products (green).



Anti-AMH (HPA066973)
HEK 293 cells, aggresome

Anti-CHCHD7 (HPA050783)
HEK 293 cells, aggresome

Anti-ZNF813 (HPA056406)
RT-4 cells, aggresome

Anti-STRADB (HPA026549)
U-2 OS cells, aggresome

Aggresomes are structures that form in response to the accumulation of misfolded proteins in the cytosol. Aggresome formation enables the sequestration of aggregated proteins and facilitates their clearance by a selective form of autophagy, sometimes called aggrephagy, thereby protecting the cell from cytotoxic effects.

Aggresome formation is a regulated process that occurs in response to an overload of the protein folding- and degradation systems due to cellular stress or disease.

Characterizing the molecular mechanisms underlying aggresome formation and its regulation has begun to provide promising therapeutic targets that may be relevant to various diseases, such as neurodegenerative diseases.

In immunofluorescence, an aggresome can be seen as a dense cytoplasmic inclusion, usually found close to the nucleus in a region where the microtubule network is disrupted. Some cell lines are more prone to aggresome formation than others.

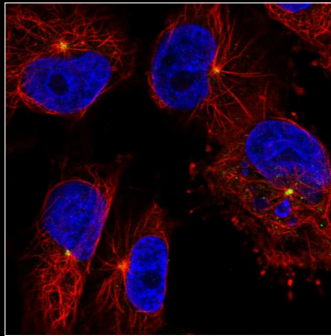
Selection of antibodies suitable as markers for the aggresome.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	Control Antigen
Anti-AMH	anti-Mullerian hormone	HPA066973			✓	66%	67%	APrEST94284
Anti-ARHGAP35	Rho GTPase activating protein 35	HPA055184	✓	✓		96%	96%	APrEST88838
		HPA056470	✓		✓	99%	99%	APrEST88499
Anti-C19orf81	chromosome 19 open reading frame 81	HPA060238*	✓		✓	84%	28%	APrEST84962
Anti-C1orf53	chromosome 1 open reading frame 53	HPA065352			✓	40%	47%	APrEST92560
Anti-CBLC	cbl proto-oncogene C	HPA035266			✓	67%	74%	APrEST90800
Anti-CHCHD7	coiled-coil-helix-coiled-coil-helix domain cont 7	HPA050783	✓		✓	63%	63%	APrEST76371
Anti-EDEM1	ER degradation enhan alpha-mannosidase 1	HPA029565	✓		✓	88%	88%	APrEST71950
Anti-HEY2	Hes related family bHLH transcription factor with YRPW motif 2	HPA074851			✓	88%	90%	APrEST93252
Anti-HYKK	hydroxylysine kinase	HPA040706	✓			66%	73%	APrEST81597
Anti-ITFG1	integrin alpha FG-GAP repeat containing 1	HPA019728	✓	✓	✓	87%	86%	APrEST72869
Anti-KLHL15	Kelch like family member 15	HPA065730	✓		✓	100%	100%	APrEST88158
Anti-PRPF40B	pre-mRNA processing factor 40 homolog B	HPA038426*	✓			83%	83%	APrEST80977
Anti-STRADB	STE20 related adaptor beta	HPA026549	✓	✓	✓	93%	91%	APrEST77822
Anti-ZNF813	zinc finger protein 813	HPA056406	✓	✓	✓	33%	35%	APrEST86124

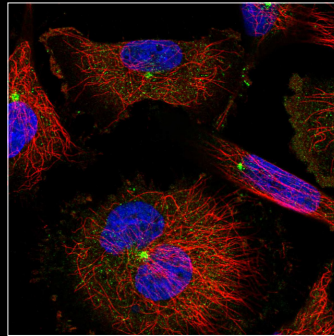
* Enhanced Validation

CYTOPLASM: CENTROSOME - CENTRIOLAR SATELLITE

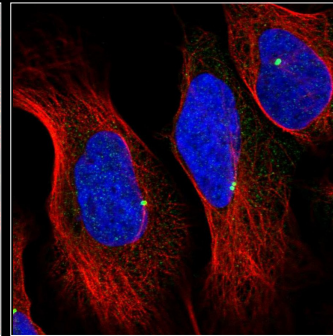
Representative stainings of the centrosome and centriolar satellite in different cell lines using Atlas Antibodies' products (green).



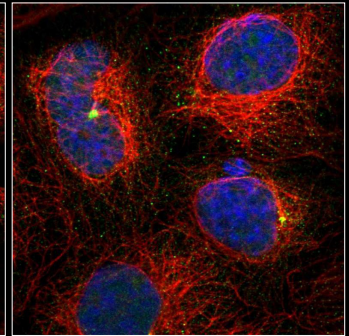
Anti-CEP350 (HPA030845)
U-251 MG, centrosome



Anti-INPP1 (HPA036698)
U-251 MG, centriolar satellite



Anti-MKKS (HPA044233)
U-2 OS, centrosome



Anti-PCM1 (HPA023370)
A-431, centrosome

The centrosome is the primary microtubule organizing center in human cells. Although the centrosome is a small organelle, it is vital for fundamental cellular functions.

Located adjacent to the nucleus, proteins localizing to the centrosome are mainly involved in intracellular organization and transport, microtubule organization, and cell cycle progression.

During cell division, the centrosome is the key organelle responsible for the correct formation and orientation of the mitotic spindle, ensuring proper segregation of sister chromatids to each daughter cell.

3% (564 proteins) of all human proteins have been experimentally detected in the centrosome by the Human Protein Atlas.

143 proteins in the centrosome are supported by experimental evidence and out of these 28 proteins are enhanced by the Human Protein Atlas.

453 proteins in the centrosome have multiple locations.

31 proteins in the centrosome show a cell-to-cell variation (30 show a variation in intensity and 1 a spatial variation).

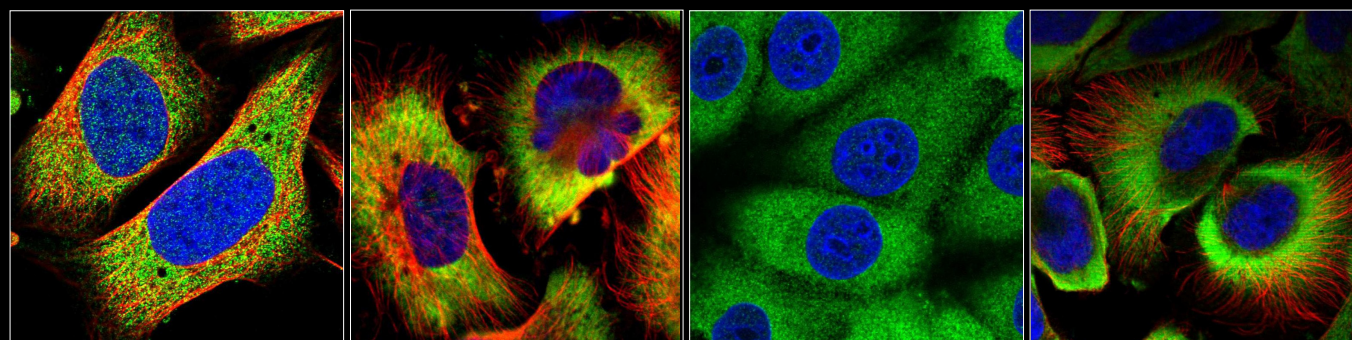
Selection of antibodies suitable as markers for the centrosome and centriolar satellite.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	PrEST Control Antigen
Anti-CEP131	centrosomal protein 131kDa	HPA024019	✓	✓	✓	76%	75%	APrEST74495
Anti-CEP350	centrosomal protein 350kDa	AMAb91164	✓		✓	81%	83%	APrEST90726
		HPA030845			✓	81%	83%	APrEST90726
Anti-INPP1	inositol polyphosphate-1-phosphatase	HPA036698	✓			90%	90%	APrEST79133
Anti-MKKS	McKusick-Kaufman syndrome	HPA044233*	✓	✓	✓	72%	80%	APrEST83099
Anti-PCM1	pericentriolar material 1	HPA023370*	✓		✓	78%	78%	APrEST76187
		AMAb90565*	✓	✓		94%	95%	APrEST76188
Anti-PCNT	pericentrin	HPA016820*	✓		✓	64%	64%	APrEST73892
		HPA032101			✓	60%	63%	APrEST90777
Anti-PIBF1	progest immunomodulatory binding factor 1	HPA052269		✓	✓	91%	91%	APrEST89663
Anti-PRKCQ	protein kinase C, theta	HPA065279			✓	96%	96%	APrEST92552
Anti-OAZ1	ornithine decarboxylase antizyme 1	HPA009291	✓		✓	82%	81%	APrEST71204
Anti-ODF2	outer dense fiber of sperm tails 2	HPA048841			✓	93%	93%	APrEST91164
Anti-ZMYM1	zinc finger, MYM-type 1	HPA064019			✓	67%	64%	APrEST92426

* Enhanced Validation

CYTOPLASM: CYTOSOL

Representative stainings of the cytosol in different cell lines using Atlas Antibodies' products (green).



Anti-AIMP1 (HPA018476)
U-2 OS cells, cytosol

Anti-G3BP1 (HPA004052)
U-251 MG cells, cytosol

Anti-MTHFS (HPA054177)
MCF7 cells, cytosol

Anti-SERBP1 (HPA020559)
U-2 OS cells, cytosol

The cytosol is a semi-fluid matrix that fills the space between the plasma and nuclear membranes, embedding various organelles and cellular substructures.

Rather than being a uniform liquid, the cytosol is a highly complex and crowded solution of water-soluble ions, small molecules, and macromolecules organized into concentration gradients, complexes, and cytoplasmic bodies.

The cytosol provides structural support to the cell and the organelles. It is also the site for many cellular processes, including metabolic pathways, protein biosynthesis, intracellular transport, and signal transduction pathways.

Immunofluorescent staining of the cytosol extends from the plasma membrane to the nuclear membrane. Staining patterns of the cytosol vary from smooth to granular, and the staining is often stronger close to the nucleus.

24% (4889 proteins) of all human proteins have been experimentally detected in the cytosol by the Human Protein Atlas.

3865 proteins in the cytosol have multiple locations.

696 proteins in the cytosol show a cell-to-cell variation (615 in intensity and 101 in spatial variation).

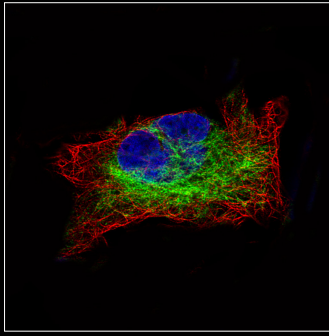
Selection of antibodies suitable as markers for the cytosol

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	Control Antigen
Anti-ADSL	adenylosuccinate lyase	HPA000525*	✓	✓	✓	92%	92%	APrEST73412
Anti-AIMP1	aminoacyl tRNA synthetase complex interacting multifunctional protein 1	HPA018476*	✓	✓	✓	96%	97%	APrEST74085
Anti-AMPD2	adenosine monophosp. deaminase 2	HPA045760*	✓	✓	✓	99%	99%	APrEST76590
Anti-ATXN2	ataxin 2	HPA018295*	✓	✓	✓	97%	96%	APrEST73804
		HPA020339*	✓			93%	95%	APrEST73802
		HPA021146*	✓	✓		90%	91%	APrEST73803
Anti-ATXN2L	ataxin 2 like	HPA041506*	✓	✓	✓	88%	89%	APrEST82311
		HPA071955			✓	98%	99%	APrEST90363
Anti-CCDC43	coiled-coil domain containing 43	HPA023078*	✓			90%	88%	APrEST94564
		HPA023391	✓	✓	✓	87%	92%	APrEST75886
Anti-G3BP1	GTPase activating protein (SH3 domain) binding protein 1	HPA004052*	✓	✓	✓	88%	87%	APrEST86718
Anti-G3BP2	GTPase activating protein (SH3 domain) binding protein 2	HPA018304*	✓		✓	97%	97%	APrEST73969
		HPA018425*	✓			94%	92%	APrEST73970
Anti-MTHFS	5,10-methenyltetrahydrofolate synthetase (5-formyltetrahydrofolate cyclo-ligase)	HPA008067	✓	✓		86%	86%	APrEST71217
		HPA054177	✓	✓	✓	79%	79%	APrEST89717
Anti-RABGAP1	RAB GTPase activating protein 1	HPA064860			✓	97%	97%	APrEST92507
Anti-SERBP1	serpine1 mRNA binding protein 1	HPA020559	✓	✓	✓	97%	99%	APrEST77470

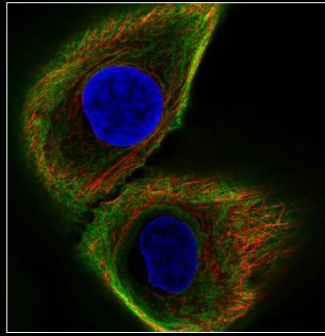
* Enhanced Validation

CYTOPLASM: INTERMEDIATE FILAMENTS

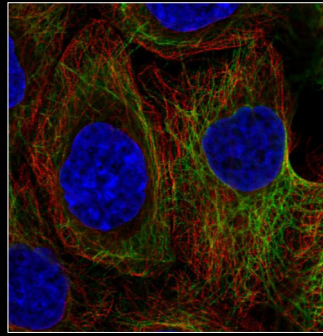
Representative stainings of cytoplasmic and nuclear intermediate filaments in different cell lines using Atlas Antibodies' products (green).



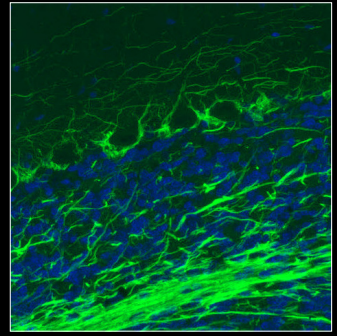
Anti-DES (AMAb91302)
RH-30 cells, interm. filaments



Anti-KRT17 (HPA000452)
hTCEpi cells, interm. filaments



Anti-KRT80 (HPA077836)
A-431, interm. filaments



Anti-NEFM (AMAb91028)
rat cerebellum, interm. filaments

Intermediate filaments (IFs) make up one of three cytoskeletal systems in human cells. This family of proteins includes intermediate cytoplasmic filaments, which form an extensive network through the cytosol, and intermediate nuclear filaments, which form the thin nuclear lamina underlying the nuclear membrane.

In the Subcellular Section of the Human Protein Atlas project, 180 genes (1% of all protein-coding human genes) have been shown to encode proteins that localize to intermediate filaments.

About 69% (n=125) of the proteins localized to intermediate filaments are also detected in additional cellular compartments, the most common ones being the cytosol and the nucleus.

125 proteins in the intermediate filaments have multiple locations.

80 proteins in the intermediate filaments show a cell-to-cell variation (77 in intensity and 3 in spatial variation).

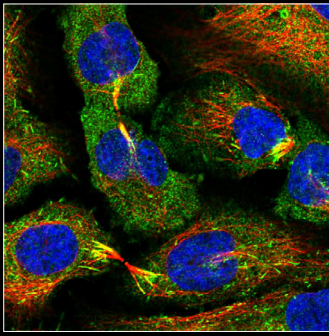
Selection of antibodies suitable as markers for the intermediate filaments.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	Control Antigen
Anti-DES	desmin	AMAb91302		✓	✓	100%	100%	-
		AMAb91303		✓	✓	100%	100%	-
		HPA018803*	✓	✓	✓	98%	98%	APrEST74605
Anti-ITFG1	integrin alpha FG-GAP repeat containing 1	HPA019728	✓	✓	✓	87%	86%	APrEST72869
Anti-KRT4	keratin 4	HPA034881	✓	✓	✓	59%	60%	APrEST77907
Anti-KRT13	keratin 13	HPA030877*	✓	✓	✓	81%	81%	APrEST87028
		HPA069771*		✓	✓	37%	37%	APrEST94323
Anti-KRT17	keratin 17	HPA000452*	✓	✓	✓	94%	94%	APrEST79736
		HPA045062*	✓	✓	✓	92%	92%	APrEST8744
Anti-KRT19	keratin 19	HPA002465*	✓		✓	79%	74%	APrEST86570
Anti-KRT80	keratin 80	HPA077836			✓	70%	71%	APrEST90430
		HPA077918*		✓	✓	75%	81%	APrEST93399
Anti-NEFM	neurofilament medium	AMAb91027	✓	✓		98%	98%	APrEST76207
		AMAb91028	✓	✓		98%	98%	APrEST76207
		HPA022845*	✓	✓	✓	74%	77%	APrEST76206
Anti-NES	nestin	AMAb90556*	✓	✓	✓	47%	42%	APrEST70691
		HPA006286			✓	47%	42%	APrEST7069
		HPA007007*	✓	✓		47%	42%	APrEST70691
Anti-PJA2	praja ring finger ubiquitin ligase 2	HPA040347*	✓		✓	66%	64%	APrEST80143
		HPA057636		✓	✓	73%	72%	APrEST89821
Anti-VIM	vimentin	AMAb90516*	✓	✓		99%	99%	APrEST85020
		HPA001762*	✓	✓	✓	99%	99%	APrEST85020

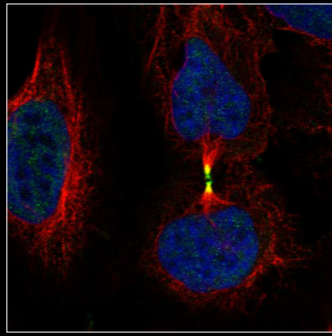
* Enhanced Validation

CYTOPLASM: MICROTUBULES - MITOTIC SPINDLE - MICROTUBULES ENDS - MIDBODY

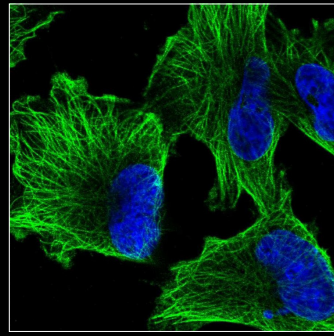
Representative stainings of microtubules and substructures sites in different cell lines using Atlas Antibodies' products (green).



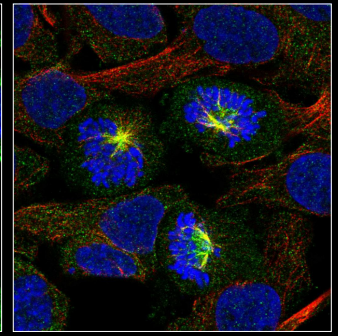
Anti-CAMSAP2 (HPA026511)
U-2 OS, cytosol, microtubule ends



Anti-AURKB (HPA037708)
U-2 OS, midbody



Anti-TUBA1A (HPA039247)
U-251 MG, microtubules



Anti-FAM83D (HPA060854)
A-431, mitotic spindle

Microtubules make up one of three major parts of the cytoskeleton. Similar to other cytoskeletal filaments, they play a significant role in structural organization and cell shape. Still, they are crucial in several cellular processes, such as cell division, cell motility, and intracellular transport.

Proteins localizing to microtubules are mainly involved in the organization of the cytoskeleton, cytoskeletal transport, protein folding, and cell division.

Substructures of the microtubules include microtubule ends, cytokinetic bridge, midbody, midbody ring, and mitotic spindle

2% (479 proteins) of all human proteins have been experimentally detected in the microtubules by the Human Protein Atlas.

97 proteins in the microtubules are supported by experimental evidence, and out of these, 16 proteins are enhanced by the Human Protein Atlas.

375 proteins in the microtubules have multiple locations.

271 proteins in the microtubules show a cell-to-cell variation. All of them show a variation in intensity.

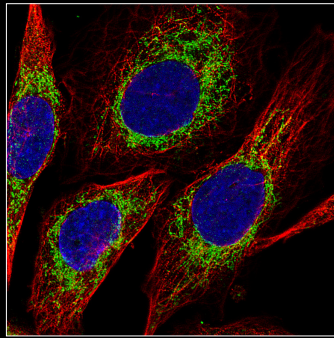
Selection of antibodies suitable as markers for microtubules and substructures.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	Control Antigen
Anti-APC2	adenomatosis polyposis coli 2	HPA078002			✓	67%	77%	APrEST81873
Anti-BIRC5	baculoviral iap repeat containing 5	AMAb91761		✓		95%	91%	-
		HPA002830*	✓	✓		86%	88%	APrEST86238
Anti-CAMSAP2	calmodulin reg spectrin associated protein 2	HPA026304*	✓			81%	77%	APrEST76668
		HPA026511*	✓		✓	92%	93%	APrEST76669
		HPA027302*	✓			95%	98%	APrEST76667
Anti-DCTN1	dynactin subunit 1	HPA034635	✓	✓	✓	100%	100%	APrEST79255
		HPA071875			✓	95%	95%	APrEST95096
Anti-DTNBP1	dystrobrevin binding protein 1	HPA028053	✓	✓	✓	76%	73%	APrEST77271
		HPA029615*	✓	✓	✓	92%	90%	APrEST77270
		HPA029616*	✓	✓		51%	54%	APrEST77272
Anti-FAM83D	family with sequence similarity 83 member D	HPA060854			✓	61%	64%	APrEST94809
Anti-TUBA1A	tubulin alpha 1a	HPA039247*	✓	✓	✓	100%	100%	APrEST88952
		HPA043684*	✓	✓	✓	100%	100%	APrEST89001

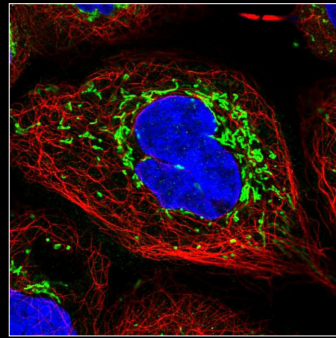
* Enhanced Validation

CYTOPLASM: MITOCHONDRIA

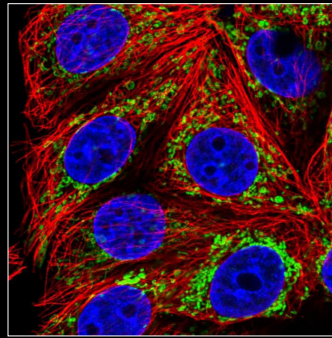
Representative stainings of mitochondria in different cell lines using Atlas Antibodies' products (green).



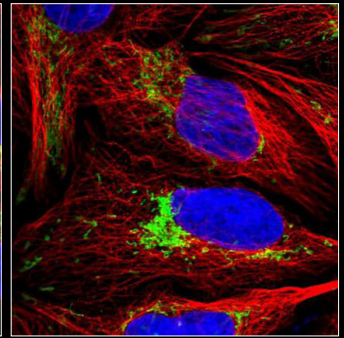
Anti-CS (AMAb91008)
PC3 cells, mitochondria



Anti-TIMM4 (HPA043052)
A-431 cells, mitochondria



Anti-TRAP1 (HPA041082)
MCF7 cells, mitochondria



Anti-LRPPRC (HPA036409)
U-2 OS cells, mitochondria

Mitochondrial proteins are mainly involved in cellular respiration and mitochondrial organization, gene expression, and metabolic processes. The number of mitochondria varies with cell type and according to the energy needs of individual cells.

Mitochondria are continuously undergoing fission and fusion, which allows for regulation of the number of mitochondria as well as communication and exchange of mitochondrial components between individual mitochondria.

6% (1139 proteins) of all human proteins have been experimentally detected in the mitochondria by the Human Protein Atlas.

552 proteins in the mitochondria have multiple locations.

354 proteins in the mitochondria show a cell-to-cell variation (340 show a variation in intensity and 20 a spatial variation).

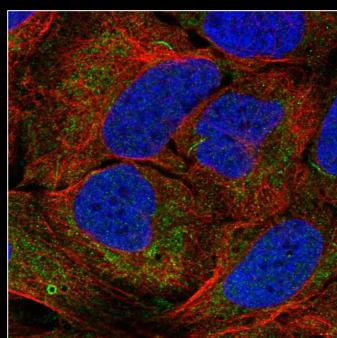
Selection of antibodies suitable as markers for the mitochondria.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	Control Antigen
Anti-CHCHD3	coiled-coil-helix-domain containing 3	HPA042935*	✓	✓	✓	92%	91%	APrEST74935
Anti-CS	citrate synthase	AMAb91005	✓	✓	✓	93%	94%	APrEST80947
		AMAb91008	✓	✓	✓	93%	94%	APrEST80947
		HPA038460*	✓		✓	98%	97%	APrEST80948
Anti-GCDH	glutaryl-CoA dehydrogenase	HPA043252*	✓	✓	✓	87%	88%	APrEST82600
		HPA048492*	✓			94%	95%	APrEST82599
Anti-IMMT	inner membrane protein	HPA036164*	✓	✓	✓	97%	95%	APrEST87160
		HPA036165*	✓	✓	✓	90%	87%	APrEST87161
Anti-LRPPRC	leucine rich pentatricopept repeat cont	HPA036408*	✓	✓	✓	92%	88%	APrEST79080
		HPA036409*	✓	✓	✓	89%	91%	APrEST87178
Anti-PCK2	phosphoenolpyruvate carboxykinase 2	HPA051162*	✓	✓	✓	79%	80%	APrEST85333
Anti-PGAM5	phosphoglycerate mutase family member 5	AMAb90803	✓	✓		94%	92%	APrEST78615
		HPA036978	✓	✓	✓	94%	92%	APrEST78615
Anti-PHB2	prohibitin 2	HPA039874	✓	✓	✓	100%	100%	APrEST81272
Anti-PYCR2	pyrroline-5-carboxylate reductase 2	HPA056873	✓	✓	✓	82%	79%	APrEST86151
Anti-SLC25A24	solute carrier family 25 member 24	HPA028519*		✓	✓	95%	93%	APrEST76553
		HPA063636*	✓	✓	✓	91%	89%	APrEST90029
Anti-TIMM44	translocase inner mitochondrial membrane 44	HPA043052*	✓	✓	✓	87%	87%	APrEST82566
		HPA073108		✓	✓	93%	94%	APrEST95146
Anti-TRAP1	TNF receptor associated protein 1	HPA041082*	✓	✓	✓	90%	91%	APrEST82179
		HPA044227*	✓	✓	✓	74%	71%	APrEST82180
Anti-ZNF211	zinc finger protein 211	HPA049967			✓	33%	36%	APrEST91220

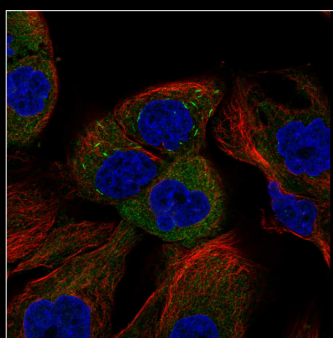
* Enhanced Validation

CYTOPLASM: RODS & RINGS

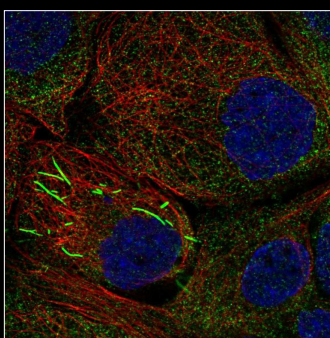
Representative stainings of rods and rings in different cell lines using Atlas Antibodies' products (green).



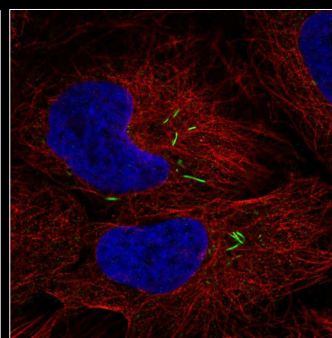
Anti-AGPAT1 (HPA048478)
U-2 OS cells, rods & rings



Anti-ITGB2 (HPA016894)
EFO-21 cells, rods & rings



Anti-IMPDH2 (HPA001400)
A-431 cells, rods & rings



Anti-ISL2 (HPA075192)
U-2 OS cells, rods & rings

Rods and rings (RRs) are poorly characterized fibrous cytoplasmic structures, shaped as a mixture of circular rings and linear rods, that have been observed in cultured human cell lines. Rods and rings were named after their rod and ring-like shapes. They can be seen in the cytosol but vary in size and number.

Rods and rings are commonly shown to contain inosine monophosphate dehydrogenase (IMPDH) and/or cytidine triphosphate synthetase (CTPS), suggesting a role related to synthesizing nucleotides.

Several other proteins have also been found to localize to rods and rings, suggesting a more complex structure and perhaps also the regulation of rods and rings.

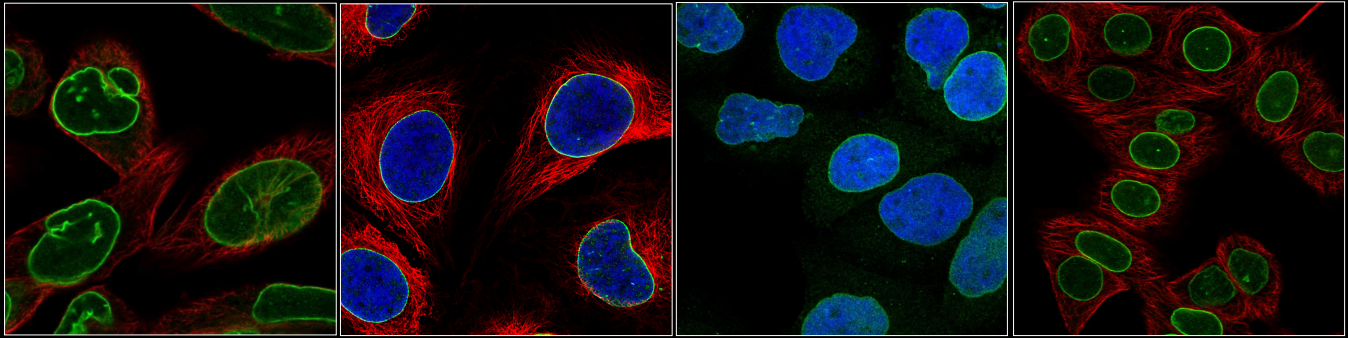
Selection of antibodies suitable as markers for rods & rings.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	PrEST Control Antigen
Anti-AGPAT1	1-acylglycerol 3-phosphate O-acyltransferase-1	HPA048478			✓	89%	93%	APrEST90396
Anti-CTPS1	CTP synthase 1	HPA051322*	✓		✓	94%	94%	APrEST89638
Anti-CTPS2	CTP synthase 2	HPA075930			✓	80%	78%	APrEST95348
Anti-GLYCTK	glycerate kinase	HPA006913	✓	✓		94%	94%	APrEST71033
Anti-IMPDH2	inosine monophosphate dehydrogenase 2	HPA001400*	✓	✓	✓	98%	98%	APrEST83044
Anti-ISL2	ISL LIM homeobox 2	HPA075192			✓	100%	100%	APrEST93272
Anti-ITGB2	integrin subunit beta 2	HPA016894*	✓	✓	✓	89%	86%	APrEST70101
Anti-SARAF	store-operated calcium entry assoc reg factor	HPA040400			✓	75%	70%	APrEST90912
Anti-SCARB1	scavenger receptor class B member 1	HPA066285			✓	78%	76%	APrEST88719
Anti-STK3	serine/threonine kinase 3	HPA007120	✓	✓	✓	89%	95%	APrEST70211
Anti-UBE3D	ubiquitin protein ligase E3D	HPA027231	✓		✓	74%	73%	APrEST77393
Anti-ZNF266	zinc finger protein 266	HPA026836	✓		✓	55%	52%	APrEST73750

* Enhanced Validation

NUCLEUS: NUCLEAR MEMBRANE

Representative stainings of the nuclear membrane in different cell lines using Atlas Antibodies' products (green).



Anti-LBR (HPA062236)
RH-30 cells, nuclear membrane

Anti-LMNB1 (AMAb91251)
MCF7 cells, nuclear membrane

Anti-SUN1 (HPA008346)
A-431 cells, nuclear membrane

Anti-TOR1AIP1 (HPA050546)
MCF7 cells, nuclear membrane

The nuclear membrane is a lipid bilayer enclosing the nucleus and physically isolating it from the rest of the cell. This enables essential molecular processes to occur in the nucleus without interference from the cytoplasm. Nuclear membrane proteins are mainly involved in the organization of the nucleus and nucleocytoplasmic transport.

278 genes (1% of all protein-coding human genes) have been shown to encode proteins that localize to the nuclear membrane.

About 86% (n=238) of the nuclear membrane proteins localize to other cellular compartments in addition to the nuclear membrane, with 28% (n=79) also localizing to other substructures within the nuclear meta compartment.

The most common additional localization apart from the nucleoplasm is vesicles.

70 proteins in the nuclear membrane are supported by experimental evidence, and out of these 17 proteins are enhanced by the Human Protein Atlas.

238 proteins in the nuclear membrane have multiple locations.

41 proteins in the nuclear membrane show a cell-to-cell variation. Of these 38 show a variation in intensity and 4 a spatial variation.

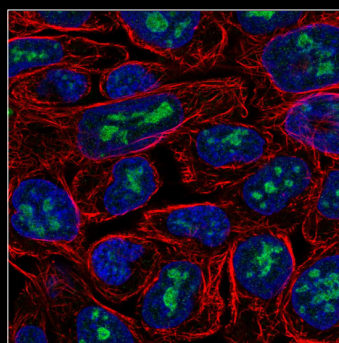
Selection of antibodies suitable as markers for the nuclear membrane.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	PrEST Control Antigen
Anti-LBR	lamin B receptor	HPA062236*		✓	✓	62%	38%	APrEST89987
		HPA049840*	✓			87%	89%	APrEST83587
Anti-LEMD2	LEM domain nuclear envelope protein 2	HPA017340	✓	✓	✓	92%	90%	APrEST71105
Anti-LMNB1	lamin B1	HPA050524*	✓	✓	✓	100%	100%	APrEST88562
		AMAb91251	✓	✓	✓	100%	100%	-
Anti-LMNB2	lamin B2	HPA062477			✓	71%	71%	APrEST88264
Anti-SUN1	sad1 and UNC84 domain containing 1	HPA008346*	✓		✓	59%	58%	APrEST71108
Anti-SUN2	sad1 and UNC84 domain containing 2	HPA001209*	✓	✓	✓	80%	78%	APrEST73388
Anti-TMPO	thymopoietin	HPA008150*	✓	✓	✓	96%	93%	APrEST71860
Anti-TOR1AIP1	torsin 1A interacting protein 1	HPA050546*	✓	✓	✓	46%	47%	APrEST83561
Anti-TPR	translocated promoter region	HPA019661*	✓	✓	✓	88%	90%	APrEST73940

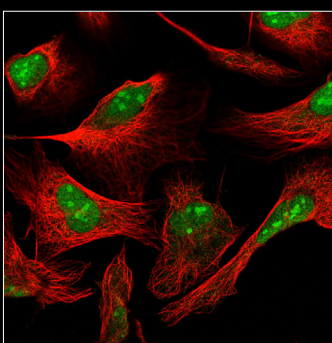
* Enhanced Validation

NUCLEUS: NUCLEOLI - NUCLEOLI FIBRILLAR CENTER - NUCLEOLI RIM

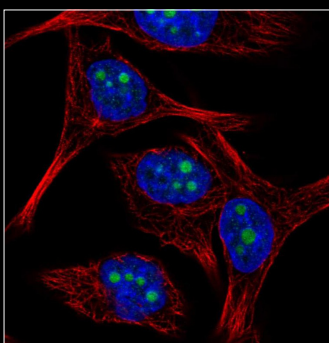
Representative stainings of the nucleoli and substructures in different cell lines using Atlas Antibodies' products (green).



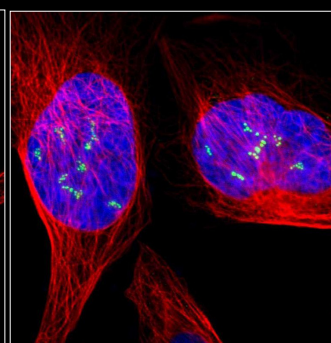
Anti-ACSL3 (HPA071021)
RT4 cells, nucleoli



Anti-GON7 (HPA051832)
U-2 OS, nucleoplasm, nucleoli rim



Anti-RPF1 (HPA024642)
SK-MEL-30 cells, nucleoli



Anti-UBTF (HPA006385)
U-2 OS cells, nucl fibrillar center

The nucleolus is a nuclear sub-compartment that varies in size and number depending on cell type. Nucleolar proteins are mainly involved in rRNA processing. The primary function of the nucleolus is to synthesize and assemble ribosomes for later transport to the cytoplasm, where translation takes place. The nucleolus is also involved in cell cycle regulation and cellular stress responses.

The nucleolar fibrillar center (FC) is a subcompartment of the nucleolus with a clear fibrillar structure assembled around active nucleolar organizing regions at specific chromosomal loci.

The nucleoli rim is a potential subcompartment of the nucleoli, but its function is still unknown. The proteins localizing here might be associated with the perinucleolar heterochromatin, where they could aid the tethering of the

chromatin to the nucleoli. A large fraction of the proteins that localize to the rim of nucleoli also localizes to the perichromosomal layer of mitotic chromosomes.

7% (1410 proteins) of all human proteins have been experimentally detected in the nucleoli by the Human Protein Atlas.

436 proteins in the nucleoli are supported by experimental evidence, and out of these, 120 proteins are enhanced by the Human Protein Atlas.

1245 proteins in the nucleoli have multiple locations.

358 proteins in the nucleoli show a cell-to-cell variation. Of these, 316 show a variation in intensity and 56 a spatial variation.

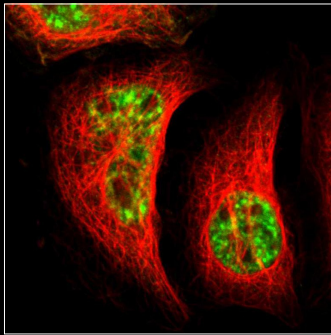
Selection of antibodies suitable as markers for the nucleoli and its substructures.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	PrEST Control Antigen
Anti-ACSL3	acyl-CoA synthetase long-chain member 3	HPA071021			✓	89%	89%	APrEST92972
Anti-DDX47	DEAD (Asp-Glu-Ala-Asp) box polypeptide 47	HPA014855	✓	✓	✓	94%	94%	APrEST73083
Anti-FTSJ3	ftsJ RNA 2'-O-methyltransferase 3	HPA055544	✓		✓	97%	95%	APrEST75559
		HPA062628			✓	69%	67%	APrEST92279
Anti-GON7	KEOPS complex subunit homolog, C14orf142	HPA051832	✓		✓	64%	62%	APrEST84122
Anti-LYAR	ly1 antibody reactive	HPA035881*	✓		✓	70%	67%	APrEST79771
Anti-NIN	ninein (GSK3B interacting protein)	HPA070691			✓	59%	56%	APrEST92944
Anti-NOL10	nucleolar protein 10	HPA035286		✓	✓	99%	100%	APrEST89338
Anti-RPF1	ribosome production factor 1 homolog	HPA024642	✓	✓	✓	90%	85%	APrEST76632
Anti-UBTF	upstream binding transcription factor	HPA006385*	✓	✓	✓	98%	90%	APrEST70888
Anti-UTP6	UTP6 small subunit processome component	HPA025936*	✓	✓	✓	88%	86%	APrEST75561
		HPA055806		✓	✓	87%	84%	APrEST89757

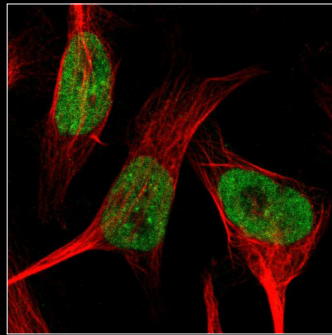
* Enhanced Validation

NUCLEUS: NUCLEOPLASM - NUCLEAR BODIES - NUCLEAR SPECKLES

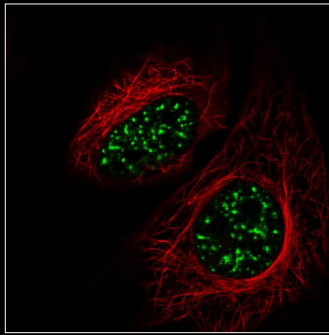
Representative stainings of the nucleoli and substructures in different cell lines using Atlas Antibodies' products (green).



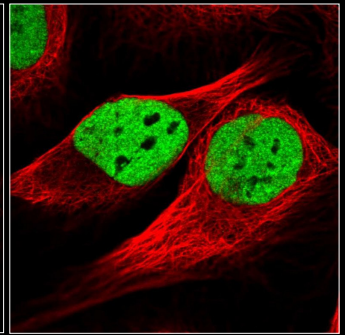
Anti-RBM25 (HPA003025)
A-431 cells, nuclear speckles



Anti-SMARCAD1 (HPA016737)
U-251 MG cells, nucleoplasm



Anti-SRRM2 (HPA066181)
HeLa cells, nuclear speckles



Anti-TAF15 (HPA052059)
HeLa cells, nucleoplasm

The nucleoplasm contains several non-membrane-bound substructures, such as nuclear bodies and nuclear speckles.

Proteins localizing to the nucleoplasm are mainly involved in RNA processing, transcription, chromatin modification and DNA repair, differentiation and development.

The nucleoplasm can be visualized by staining with the fluorescent stain 4',6-diamidino-2-phenylindole (DAPI), which binds strongly to AT-rich regions of DNA. However, nucleoli usually display much weaker staining with DAPI, because of the lower amount of DNA in these regions.

34% (6784 proteins) of all human proteins have been experimentally detected in the nucleoplasm by the Human Protein Atlas.

2796 proteins in the nucleoplasm are supported by experimental evidence and out of these 838 proteins are enhanced by the Human Protein Atlas.

4538 proteins in the nucleoplasm have multiple locations.

1338 proteins in the nucleoplasm show a cell-to-cell variation. Of these 1238 show a variation in intensity and 149 a spatial variation.

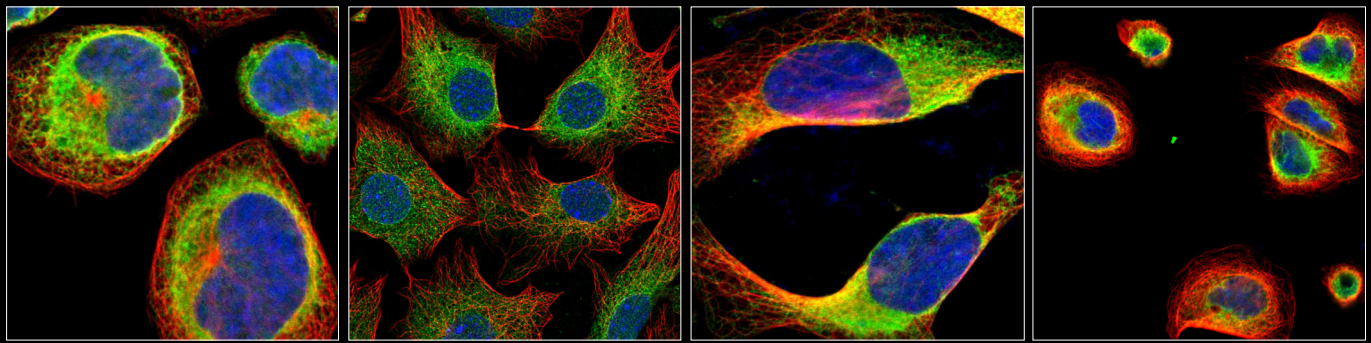
Selection of antibodies suitable as markers for the nucleus or its substructures.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	PrEST Control Antigen
Anti-MKI67	marker of proliferation Ki-67	AMAb90870	✓		✓	68%	68%	APrEST79721
		HPA000451*	✓		✓	66%	67%	APrEST79727
		HPA001164*	✓		✓	68%	68%	APrEST79721
Anti-PDS5A	regulator of cohesion maintenance, homolog A	HPA036661*	✓	✓	✓	90%	89%	APrEST87191
		HPA036662*	✓	✓	✓	86%	85%	APrEST79732
Anti-RBM25	RNA binding motif protein 25	HPA003025	✓	✓	✓	100%	99%	APrEST70612
		HPA070713			✓	99%	99%	APrEST92949
Anti-RSL1D1	ribosomal L1 domain containing 1	HPA043483	✓		✓	35%	38%	APrEST84670
Anti-SMARCAD1	SWI/SNF-related, matrix-associated actin-dependent reg of chromatin, subfamily a, containing DEAD/H box 1	HPA016737*	✓	✓	✓	86%	85%	APrEST73768
Anti-SRRM2	serine/arginine repetitive matrix 2	HPA041411	✓		✓	60%	60%	APrEST82293
		HPA066181			✓	96%	97%	APrEST90166
Anti-TAF15	TATA-box binding protein associated factor 15	HPA052059*	✓		✓	97%	94%	APrEST85748
		HPA063647*		✓	✓	84%	84%	APrEST92386
Anti-TP53BP1	tumor protein p53 binding protein 1	HPA008788		✓	✓	100%	100%	APrEST70850
		HPA022133*	✓	✓	✓	85%	86%	APrEST70849

* Enhanced Validation

ENDOMEMBRANE SYSTEM: ENDOPLASMIC RETICULUM

Representative stainings of the endoplasmic system in different cell lines using Atlas Antibodies' products (green).



Anti-CANX (HPA009696)
A-431, endoplasmic reticulum

Anti-CYP51A1 (HPA043508)
NIH 3T3, endoplasmic reticulum

Anti-HSP90B1 (HPA003901)
U-2 OS, endoplasmic reticulum

Anti-PDIA3 (HPA003230)
U-251 MG, endoplasmic reticulum

The endoplasmic reticulum (ER) is a delicate membranous network composed of sheets and tubules that spread throughout the cytoplasm and are contiguous with the nuclear membrane. Proteins localizing to the ER are mainly involved in protein synthesis, folding, modification, mRNA degradation, and metabolic processes.

In immunofluorescent staining, the ER is recognized by a network-like staining in the cytosol, which is usually stronger close to the nucleus and weaker close to the edges of the cell. As the ER is continuous with the outer nuclear membrane, staining is often seen around the nucleus.

3% (523 proteins) of all human proteins have been experimentally detected in the endoplasmic reticulum by the Human Protein Atlas.

246 proteins in the endoplasmic reticulum are supported by experimental evidence; 54 proteins are also enhanced by the Human Protein Atlas.

282 proteins in the endoplasmic reticulum have multiple locations.

72 proteins in the endoplasmic reticulum show a cell-to-cell variation. Of these 70 show a variation in intensity and 2 a spatial variation.

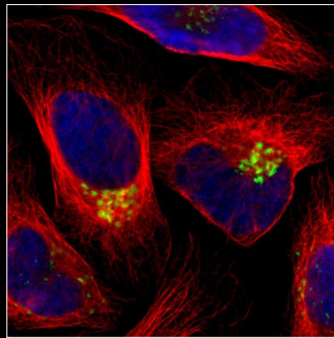
Selection of antibodies suitable as markers for the endoplasmic reticulum.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	PrEST Control Antigen
Anti-CANX	calnexin	HPA009433*	✓		✓	88%	89%	APrEST71909
		HPA009696*	✓		✓	84%	87%	APrEST71910
Anti-CYP51A1	cytochrome P450 family 51 subfamily A1	HPA041325*	✓	✓	✓	88%	92%	APrEST81763
		HPA043508*	✓		✓	93%	95%	APrEST81764
Anti-ELOVL5	ELOVL fatty acid elongase 5	HPA047752*	✓	✓	✓	88%	79%	APrEST84558
Anti-HSP90B1	heat shock protein 90 beta family member 1	AMAb91019*	✓	✓	✓	90%	87%	APrEST86672
		HPA003901*	✓	✓	✓	90%	87%	APrEST86672
		HPA008424*	✓	✓	✓	98%	95%	APrEST86673
Anti-KTN1	kinectin 1 (kinesin receptor)	HPA003178*	✓	✓	✓	80%	75%	APrEST70565
		HPA017876*	✓			62%	57%	APrEST70517
Anti-LRRC59	leucine rich repeat containing 59	HPA030827*	✓	✓	✓	93%	93%	APrEST78469
		HPA030829*	✓	✓	✓	96%	93%	APrEST78468
Anti-PDIA3	protein disulfide isomerase family A member 3	AMAb90988*	✓	✓	✓	91%	91%	APrEST86567
		AMAb90991	✓	✓		91%	91%	APrEST86567
		HPA003230*	✓	✓	✓	91%	91%	APrEST86567
Anti-RCN1	reticulocalbin 1, EF-hand calcium bind domain	HPA038474*	✓	✓	✓	92%	92%	APrEST80493
Anti-RCN2	reticulocalbin 2, EF-hand calcium bind domain	HPA030694*	✓	✓	✓	91%	90%	APrEST78491
Anti-RRBP1	ribosome binding protein 1	HPA009026*	✓	✓	✓	85%	86%	APrEST71890
Anti-SEC61B	sec61 beta subunit	HPA049407	✓		✓	100%	100%	APrEST79615
Anti-SOAT1	sterol O-acyltransferase 1	HPA047171*	✓		✓	59%	67%	APrEST83563
Anti-VAPA	VAMP-associated protein A	HPA009174	✓	✓	✓	60%	84%	APrEST71717

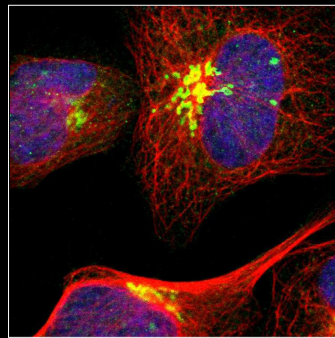
* Enhanced Validation

ENDOMEMBRANE SYSTEM: GOLGI APPARATUS

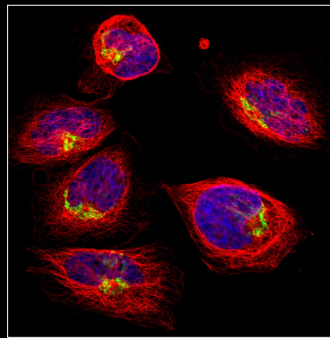
Representative stainings of the Golgi apparatus in different cell lines using Atlas Antibodies' products (green).



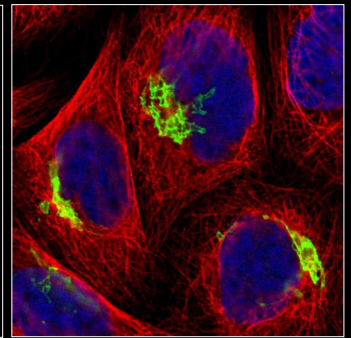
Anti-GALNT2 (HPA011222)
U-2 OS cells, Golgi apparatus



Anti-GOLGA5 (HPA000992)
U-2 OS cells, Golgi apparatus



Anti-GOLGB1 (HPA011008)
A-431 cells, Golgi apparatus



Anti-GOLM1 (HPA010638)
A-431 cells, Golgi apparatus

The Golgi apparatus is the key organelle in the secretory pathway and essential for the intracellular trafficking of proteins and membranes. Most newly synthesized proteins that enter the secretory pathway move from the ER through the Golgi apparatus to their final destination. Proteins localizing to the Golgi apparatus are mainly involved in the transport and modification of proteins.

During transit through the Golgi apparatus, they are heavily modified by post-translational modifications mediated by Golgi-resident proteins. These modifications include but are not limited to, glycosylation, sulfation, phosphorylation, and proteolytic cleavage.

Therefore, it is not surprising that malfunctions of Golgi-associated proteins that affect the morphology of the Golgi apparatus, or the trafficking or post-translational

modifications (especially glycosylation) that occur in the compartment, can lead to human diseases such as Congenital Disorder of Glycosylation (CDG).

6% (1127 proteins) of all human proteins have been experimentally detected in the Golgi apparatus by the Human Protein Atlas.

271 proteins in the Golgi apparatus are supported by experimental evidence and out of these 72 proteins are enhanced by the Human Protein Atlas.

853 proteins in the Golgi apparatus have multiple locations.

156 proteins in the Golgi apparatus show a cell-to-cell variation. Of these 151 show a variation in intensity and 5 a spatial variation.

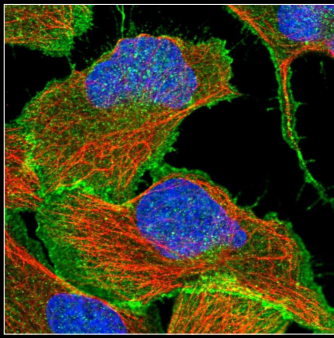
Selection of antibodies suitable as markers for the Golgi apparatus.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	PrEST Control Antigen
Anti-GALNT2	polypeptide N-acetylgalactosaminyltransferase2	HPA011222*	✓	✓	✓	96%	96%	APrEST72034
Anti-GOLGA5	golgin A5	HPA000992*	✓	✓	✓	70%	76%	APrEST70366
Anti-GOLGB1	golgin B1	HPA011008*	✓		✓	60%	63%	APrEST72216
		HPA011555*	✓		✓	69%	67%	APrEST72215
Anti-GOLIM4	Golgi integral membrane protein 4	HPA001677*	✓		✓	71%	70%	APrEST85129
		HPA002315*	✓			81%	82%	APrEST85128
Anti-GOLM1	Golgi membrane protein 1	HPA010638*	✓	✓	✓	46%	45%	APrEST71956
Anti-GORASP2	Golgi reassembly stacking protein 2	AMAb91016*	✓	✓	✓	68%	68%	APrEST87115
		HPA035274*	✓	✓	✓	67%	67%	APrEST87115
Anti-OSBP	oxysterol binding protein	HPA039227*		✓	✓	96%	97%	APrEST80518
Anti-SLC30A6	solute carrier family 30 (zinc transporter) 6	HPA055032			✓	89%	89%	APrEST91608
Anti-USO1	USO1 vesicle transport factor	HPA038282*		✓	✓	98%	96%	APrEST89370
Anti-ZFPL1	zinc finger protein like 1	HPA014909*	✓	✓	✓	83%	83%	APrEST72298
		HPA017347*	✓		✓	97%	97%	APrEST72297
Anti-YIPF3	yip1 domain family, member 3	HPA014859	✓	✓	✓	88%	86%	APrEST73063

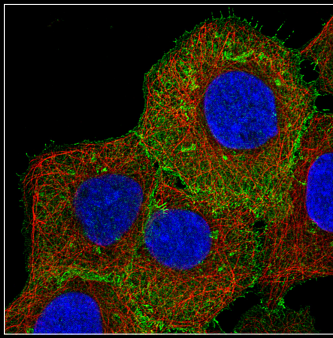
* Enhanced Validation

ENDOMEMBRANE SYSTEM: PLASMA MEMBRANE - CELL JUNCTIONS

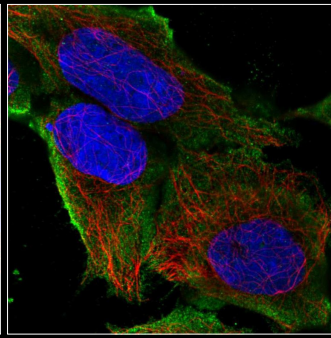
Representative stainings of the plasma membrane in different cell lines using Atlas Antibodies' products (green).



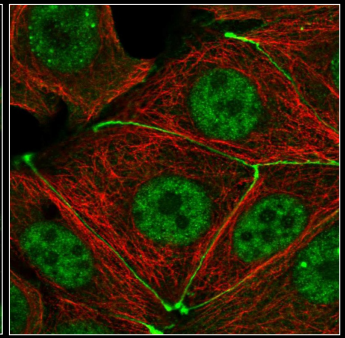
Anti-CTNNB1 (HPA029159)
U-2 OS cells, plasma membrane



Anti-EZR (AMAb90979)
A-431 cells, plasma membrane



Anti-SLC41A3 (HPA045847)
HEK 293 cells, plasma membrane



Anti-TJP3 (HPA046863)
MCF7 cells, plasma membrane

The plasma membrane, also known as the cell membrane or cytoplasmic membrane, is the barrier that encloses the cell and protects the intracellular components from the surroundings. The plasma membrane is a thin, semi-permeable membrane consisting of a lipid bilayer and associated proteins, each constituting about 50% of the total mass of the cell membrane.

Proteins of the plasma membrane are mainly involved in endocytosis and cellular response to extracellular stimuli, cell signaling, transport, cell structure, and cell adhesion.

A rupture in the plasma membrane leads to the impairment of cell integrity and function, resulting in cell lysis and cell death unless rapidly repaired. Moreover, mutations in genes encoding proteins that localize to the plasma membrane have been associated with numerous human diseases. For example, mutations in genes encoding channel- and

transporter proteins have been linked to various diseases, including cystic fibrosis, cardiac arrhythmia, diabetes, skeletal muscle defects, and neurological disorders.

11% (2202 proteins) of all human proteins have been experimentally detected in the plasma membrane by the Human Protein Atlas.

790 proteins in the plasma membrane are supported by experimental evidence, and out of these 126 proteins are enhanced by the Human Protein Atlas.

1776 proteins in the plasma membrane have multiple locations.

259 proteins in the plasma membrane show a cell-to-cell variation. Of these, 252 show a variation in intensity and 9 a spatial variation.

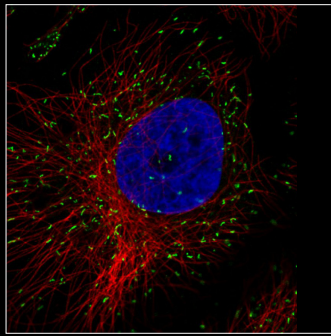
Selection of antibodies suitable as markers for the plasma membrane & cell junctions.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	PrEST Control Antigen
Anti-ANK3	ankyrin 3, node of Ranvier (ankyrin G)	HPA038455		✓	✓	82%	83%	
Anti-CDH17	cadherin 17, LI cadherin (liver-intestine)	HPA023614*	✓	✓		83%	83%	APrEST76190
Anti-CTNNB1	catenin beta 1	AMAb91209	✓	✓	✓	100%	100%	APrEST78098
		HPA029159*	✓	✓	✓	100%	100%	APrEST78098
Anti-EGFR	epidermal growth factor receptor	AMAb90816	✓	✓		90%	91%	APrEST78874
		HPA018530*	✓	✓	✓	84%	82%	APrEST78873
Anti-EPB41L3	erythrocyte membrane protein band 4.1 like 3	HPA028605*	✓	✓	✓	58%	58%	APrEST75465
Anti-EZR	ezrin	AMAb90975	✓	✓	✓	93%	93%	APrEST85223
		AMAb90979	✓	✓	✓	93%	93%	APrEST85223
		HPA021616*	✓	✓	✓	93%	93%	APrEST85223
Anti-GJB6	gap junction protein beta 6	AMAb91305			✓	85%	85%	
Anti-HTRA1	HtrA serine peptidase 1	HPA036655			✓	91%	91%	APrEST79654
Anti-SLC16A1	solute carrier family 16 member 1	HPA003324*	✓	✓	✓	66%	65%	APrEST86072
		HPA071055			✓	62%	52%	APrEST90318
Anti-SLC41A3	solute carrier family 41 member 3	HPA045847	✓	✓	✓	53%	56%	APrEST79330
Anti-STX4	syntaxin 4	HPA001330*	✓	✓	✓	86%	86%	APrEST78890
Anti-TJP3	tight junction protein 3	HPA046863		✓	✓	56%	59%	APrEST89533

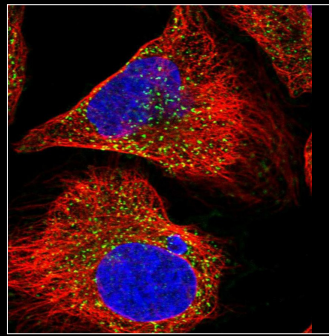
* Enhanced Validation

ENDOMEMBRANE SYSTEM: VESICLES

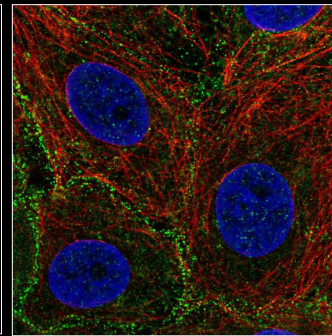
Representative stainings of the vesicle and substructures in different cell lines using Atlas Antibodies' products (green).



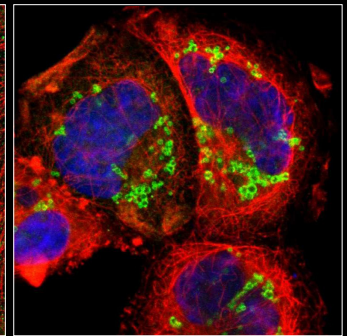
Anti-ABCD3 (AMAb90995)
HeLa cells, peroxisomes



Anti-AGPS (HPA030209)
U-2 OS cells, peroxisomes



Anti-EPS15L1 (HPA055309)
MCF7 cells, vesicles



Anti-PLIN3 (HPA006427)
A-431 cells, lipid droplets

Vesicles is a collective term for cytoplasmic organelles that are often too small to have distinct features when imaged by light microscopy. The general structure of organelles annotated as vesicles is a round membrane-enclosed lumen less than 1 μm in diameter.

The majority of the vesicles are membrane-bound organelles. However, large protein complexes and cytosolic bodies can also fall under this category, as they are difficult to distinguish.

Examples of organelles with a vesicle annotation are the members of the endolysosomal pathway, transport vesicles, peroxisomes, and lipid droplets.

Proteins are mainly involved in lipid metabolism, organization of vesicle organelles such as endosomes,

vacuoles and peroxisomes, protein transport, endocytosis, and exocytosis.

11% (2247 proteins) of all human proteins have been experimentally detected in the vesicles by the Human Protein Atlas.

514 proteins in the vesicles are supported by experimental evidence, and out of these 122 proteins are enhanced by the Human Protein Atlas.

1511 proteins in the vesicles have multiple locations.

330 proteins in the vesicles show a cell-to-cell variation (315 intensity and 18 a spatial variation).

Selection of antibodies suitable as markers for the vesicles.

Product Name	Protein Name	Product ID	IHC	WB	IF	Mouse seq homology	Rat seq homology	PrEST Control Antigen
Anti-ABCD3	ATP-binding cassette, sub-family D, member 3	HPA032026*	✓		✓	86%	88%	APrEST87065
		AMAb90995*	✓		✓	86%	87%	APrEST87065
Anti-AGPS	alkylglycerone phosphate synthase	HPA030209	✓		✓	80%	81%	APrEST78904
Anti-ANKFY1	ankyrin repeat and FYVE domain containing 1	HPA065849			✓	95%	96%	APrEST92600
Anti-EPS15L1	EGF- receptor pathway substrate 15-like 1	HPA055309			✓	88%	86%	APrEST91635
		HPA019237*	✓	✓		94%	94%	APrEST74696
Anti-LAMTOR4	late endosomal/lysosomal adaptor, MAPK and MTOR activator 4	HPA020998*	✓	✓	✓	96%	97%	APrEST75116
Anti-PLIN3	perilipin 3	HPA006427*	✓	✓	✓	71%	71%	APrEST70468
Anti-RAB5C	RAB5C, member RAS oncogene family	HPA003426*		✓		95%	97%	APrEST86406
		HPA004167			✓	95%	97%	APrEST86406
Anti-RAB7A	RAB7A, member RAS oncogene family	HPA006964*	✓	✓	✓	100%	99%	APrEST71095

* Enhanced Validation

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Atlas Antibodies Advanced Polyclonals.

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VALIDATED BY ENHANCED VALIDATION

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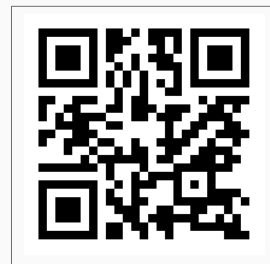
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