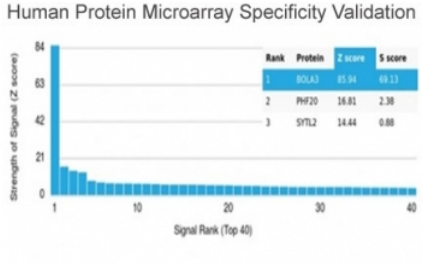
BOLA3 Antibody PCRP-BOLA3-1A5 / BolA-like Protein 3 Monoclonal Antibody [clone PCRP-BOLA3-1A5] (V4033)

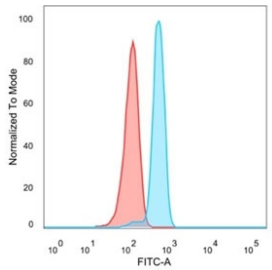
Catalog No.	Formulation	Size
V4033-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4033-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4033SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

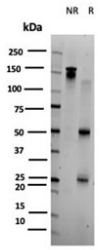
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1
Clone Name	PCRP-BOLA3-1A5
Purity	Protein A/G affinity
UniProt	Q53S33
Localization	Nucleus, cytoplasm
Applications	Flow cytometry: 1-2ug/million cells
Limitations	This BOLA3 Antibody PCRP-BOLA3-1A5 / BolA-like Protein 3 Monoclonal Antibody is available for research use only.



BOLA3 Antibody PCRP-BOLA3-1A5 by HuProt protein microarray. Specificity analysis of BOLA3 Antibody clone PCRP-BOLA3-1A5 against a HuProt microarray containing more than 19,000 full-length human proteins. The graph displays a dominant BOLA3-associated signal relative to the remaining array proteins, supporting preferential recognition of the intended target. Z-scores represent normalized fluorescence signal strength, while S-scores describe separation between ranked protein signals.



BOLA3 Antibody PCRP-BOLA3-1A5 by FACS in human HeLa cells. Flow cytometry analysis of paraformaldehyde-fixed human HeLa cells using BOLA3 Antibody clone PCRP-BOLA3-1A5. The blue histogram represents antibody staining, while the red histogram represents the isotype control. The antibody-stained population exhibits a clear rightward fluorescence shift relative to the control, indicating increased antibody-associated fluorescence.



BOLA3 Antibody PCRP-BOLA3-1A5 purity by SDS-PAGE. SDS-PAGE analysis of purified, BSA-free BOLA3 Antibody clone PCRP-BOLA3-1A5 under nonreducing (NR) and reducing (R) conditions. The nonreducing lane shows the intact immunoglobulin, while the reducing lane displays bands corresponding to the approximately 50 kDa heavy chain and 25 kDa light chain. This analysis provides an assessment of antibody integrity and purity.

Description

BOLA3 Antibody PCRP-BOLA3-1A5 / BolA-like Protein 3 Monoclonal Antibody recognizes BOLA3, a mitochondrial protein involved in the maturation of iron-sulfur (Fe-S) cluster-containing proteins. Encoded by the BOLA3 gene, this protein belongs to the conserved BolA family and contributes to mitochondrial cofactor assembly through interactions with proteins involved in Fe-S cluster trafficking and transfer. These cofactors are essential for numerous metabolic enzymes, including components of the mitochondrial respiratory chain and enzymes participating in intermediary metabolism.

BOLA3 functions in the mitochondrial matrix, where it participates in the late stages of Fe-S protein maturation. Its activity is associated with the transfer and insertion of Fe-S clusters into selected mitochondrial client proteins. BOLA3 interacts functionally with proteins such as NFU1 and glutaredoxin 5 (GLRX5), which contribute to the organization and delivery of Fe-S cofactors. These processes are particularly important for enzymes requiring [4Fe-4S] clusters, including components of respiratory complex I and lipoic acid synthesis pathways.

Disruption of BOLA3 function can impair mitochondrial energy metabolism and the activity of multiple Fe-S-dependent enzymes. Pathogenic variants in BOLA3 are associated with multiple mitochondrial dysfunctions syndrome type 2 (MMDS2), an autosomal recessive disorder characterized by severe metabolic abnormalities and neurological involvement. Affected individuals may exhibit lactic acidosis, impaired oxidative phosphorylation, and deficiencies involving mitochondrial protein lipoylation. These findings demonstrate the importance of BOLA3 in maintaining the activity of essential mitochondrial metabolic pathways.

BOLA3 is also relevant to investigations of mitochondrial protein homeostasis and the molecular coordination of Fe-S cluster biogenesis. Its functional relationship with NFU1, GLRX5, and other mitochondrial assembly factors illustrates how specialized protein networks support the maturation of respiratory and metabolic enzymes. Studying these interactions can help clarify the consequences of defective cofactor transfer and the relationship between mitochondrial dysfunction and cellular energy metabolism.

NSJ Bioreagents offers this BOLA3 Antibody for research examining mitochondrial Fe-S cluster maturation, respiratory chain function, and inherited disorders of mitochondrial metabolism. Understanding BOLA3-associated protein interactions provides insight into the mechanisms connecting cofactor assembly with mitochondrial enzyme activity and cellular metabolic stability.

Explore our Metabolism Antibodies for additional research tools targeting proteins involved in mitochondrial energy production, iron-sulfur cluster assembly, and cellular metabolic regulation.

Application Notes

Optimal dilution of the BOLA3 Antibody PCRP-BOLA3-1A5 / BolA-like Protein 3 Monoclonal Antibody should be determined by the researcher.

Immunogen

A portion of amino acids 1-103 from the human BOLA3 protein was used as the immunogen for the BOLA3 antibody.

Storage

Aliquot the BOLA3 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

BolA-like protein 3 antibody, BolA family member 3 antibody, Mitochondrial BolA-like protein 3 antibody, BOLA3 mitochondrial protein antibody

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