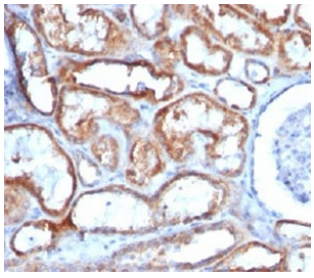
Mitochondrial Marker Antibody [clone 113-1] (V2352)

Catalog No.	Formulation	Size
V2352-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2352-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V2352SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V2352IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

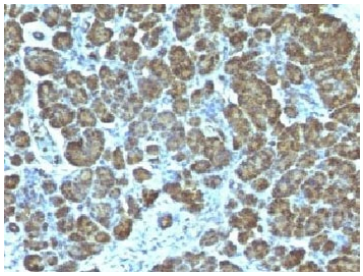
Citations (11)

Bulk quote request

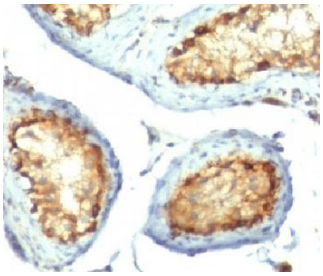
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	113-1
Purity	Protein G affinity chromatography
Buffer	1X PBS, pH 7.4
Gene ID	Unknown
Localization	Mitochondria in cytoplasm
Applications	Immunofluorescence : 1-2ug/ml Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This **Mitochondrial marker antibody** is available for research use only.



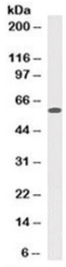
IHC testing of renal cell carcinoma and Mitochondrial Marker antibody (113-1).



IHC testing of FFPE human pancreas with Mitochondrial Marker antibody



IHC testing of FFPE human testicular carcinoma with Mitochondrial Marker antibody



Western blot testing of human HeLa cell lysate with Mitochondrial Marker antibody (clone 113-1).

Description

Mitochondrial Marker antibody (clone 113-1) detects mitochondrial structures that are integral to cellular energy conversion and metabolic control. Mitochondria are double-membrane organelles that coordinate oxidative phosphorylation, tricarboxylic acid cycle flux, and multiple biosynthetic pathways that sustain cell viability. They also participate in calcium handling, redox signaling, and the initiation of programmed cell death. Because mitochondrial organization changes with metabolic demand and stress exposure, reliable identification of these organelles is essential for studies that examine cell state, adaptation, and quality control mechanisms.

Within living systems, mitochondria are not static. They undergo continuous remodeling through fission and fusion, processes that adjust organelle shape, distribution, and function. These dynamics help segregate damaged components, maintain membrane potential, and balance ATP output with cellular workload. Mitochondrial content can increase during biogenesis or decrease through targeted turnover pathways collectively referred to as mitophagy. Tracking these adjustments provides insight into how cells respond to environmental cues such as nutrient availability, oxidative burden, or pharmacologic perturbation.

The signal detected by clone 113-1 marks mitochondrial compartments in a way that is useful for assessing organelle abundance and spatial patterning across diverse biological contexts. When combined with markers for nuclei, cytoskeleton, or endomembrane systems, mitochondrial labeling helps clarify subcellular organization and organelle crosstalk. This is particularly informative in studies that relate mitochondrial proximity to regions of high ATP demand, calcium microdomains, or sites of lipid exchange with the endoplasmic reticulum. Because mitochondrial networks vary widely between cell types, a consistent marker supports comparisons across developmental stages, differentiation states, or experimental conditions that alter metabolism.

Mitochondria also host enzymes that shape intermediary metabolism, including steps in amino acid, heme, and lipid synthesis. The coordination of these pathways with electron transport chain activity underscores the central role of

mitochondria in both energy provision and biosynthetic output. Perturbations that affect electron flow or membrane integrity can shift reactive oxygen species levels and redox balance, with downstream effects on signaling and gene expression. Visualizing mitochondrial distribution alongside readouts of metabolic function provides a framework for connecting structure with activity.

Mitochondrial Marker antibody (clone 113-1) supports research into organelle dynamics, bioenergetic regulation, and cell stress responses by enabling clear identification of mitochondrial structures in relevant models. NSJ Bioreagents provides Mitochondrial Marker antibody (clone 113-1) validated for use in relevant research applications that investigate mitochondrial organization, turnover, and metabolic state.

In peer-reviewed research, such as the Nature article Ljujic, Biljana, et al. Human mesenchymal stem cells creating an immunosuppressive environment and promote breast cancer in mice. Scientific reports 3.1 (2013): 2298, clone 113-1 was used to identify human cells within mouse xenograft tissue based on mitochondrial immunoreactivity. The study demonstrated clear labeling of human-derived mesenchymal and tumor cells in murine environments, supporting its use as a marker for distinguishing human cells in mixed-species models. NSJ Bioreagents has not independently verified this testing or cross-reactivity performance, and the reference is provided for informational context only.

Application Notes

Differences in protocols and secondaries may require the Mitochondrial marker antibody 113-1 to be titered for optimal performance.

1. FFPE staining is enhanced by boiling tissue sections in 1mM EDTA Buffer, pH 8.5-9.5, for 10-20 min followed by cooling at RT for 20 minutes.
2. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

A semi-purified mitochondrial preparation was used as the immunogen for this Mitochondrial marker antibody.

Storage

Store the Mitochondrial Marker antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

References (4)