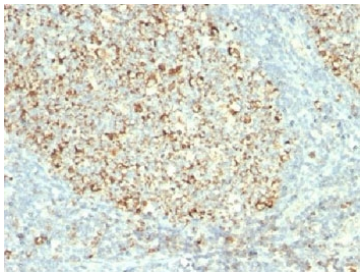
Mitochondria Antibody [clone MTC02] (V2353)

Catalog No.	Formulation	Size
V2353-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2353-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V2353SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V2353IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

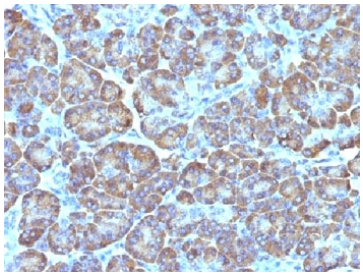
Citations (10)

Bulk quote request

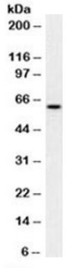
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	MTC02
Purity	Protein G affinity chromatography
Buffer	1X PBS, pH 7.4
Gene ID	Unknown
Localization	Mitochondria in cytoplasm
Applications	Immunofluorescence : 0.5-1ug/ml Immunohistochemistry (FFPE) : 0.5-1ug/ml for 30 min at RT
Limitations	This **Mitochondria antibody** is available for research use only.



IHC testing of FFPE human tonsil with Mitochondria antibody



IHC testing of FFPE human pancreas with Mitochondria antibody



Western blot testing of human HeLa cell lysate with Mitochondria antibody (clone MTC02).

Description

Mitochondria antibody (clone MTC02) detects a conserved mitochondrial signal that highlights the organelles responsible for oxidative ATP production and metabolic integration. Mitochondria coordinate electron transport, ATP synthesis, and cofactor regeneration while interfacing with pathways that govern lipid handling, nucleotide balance, and one-carbon metabolism. They also contribute to cell fate through factors that influence membrane permeabilization and downstream proteolytic cascades. Because these functions are tightly coupled to organelle architecture, a dependable mitochondrial marker is a practical starting point for mapping structure-function relationships in cell models and tissues.

Mitochondrial form and placement are dynamic. Networks can fragment into shorter units during stress or apoptosis, or elongate when cells favor efficient energy transfer and protection from degradation. These shape transitions accompany changes in respiratory capacity, calcium buffering, and redox status. Clone MTC02 provides a mitochondrial label that can be integrated into multiparameter experiments, allowing researchers to relate organelle distribution to indicators of metabolism, cytoskeletal alignment, or signaling hotspots.

In addition to respiration, mitochondria perform critical biosynthetic roles. They supply intermediates for amino acid synthesis, generate heme precursors, and house enzymes that initiate steroidogenesis in specialized cell types. Mitochondrial membranes also host contact sites with other organelles that support lipid exchange and calcium transfer. Visual readouts of mitochondrial layout help frame hypotheses about how these interactions change during adaptation to nutrient shifts, hypoxic exposure, or chemical challenge.

Because mitochondrial quality control maintains overall cellular fitness, there is strong interest in tracking how organelle content and integrity evolve in models of aging, metabolic imbalance, and neurobiology. A consistent labeling approach enables comparison across experiments that vary by time, treatment, or differentiation state. When paired with functional assays of respiration or membrane potential, structural information can suggest mechanisms that link morphology to performance.

Mitochondria antibody (clone MTC02) provides a clear signal for identifying mitochondrial structures in research settings focused on bioenergetics, organelle turnover, and intracellular organization. NSJ Bioreagents supplies Mitochondria antibody (clone MTC02) validated for use in relevant research applications that examine mitochondrial distribution, remodeling, and coordination with cellular metabolism.

Application Notes

The concentration stated for each application is a general starting point. Variations in protocols, secondaries and

substrates may require the Mitochondria antibody to be titered up or down for optimal performance.

1. Staining of formalin-fixed tissues 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 mitochondria preparation was used as the immunogen for the Mitochondria antibody.

Storage

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