

**TECHNICAL DATA SHEET****Nicotinamide nucleotide transhydrogenase (NNT) monoclonal antibody****Catalog # MS701**

Rev.5

LOT #:

<b>COMPONENTS:</b>	100 µg monoclonal antibody
<b>APPLICATIONS:</b>	Western blotting, Immunocytochemistry, Immunohistochemistry, Immunoprecipitation, In-Cell ELISA, Flow Cytometry
<b>CLONE ID OF MONOCLONAL ANTIBODY (mAb):</b>	8B4BB10
<b>SPECIES CROSS-REACTIVITY:</b>	human, rat, mouse, bovine
<b>HOST SPECIES AND ISOTYPE:</b>	Mouse IgG1, κ
<b>IMMUNOGEN:</b>	human heart mitochondria
<b>CONCENTRATION:</b>	1 mg/mL in HEPES-Buffered Saline (HBS) with 0.02% azide as a preservative.
<b>SUGGESTED WORKING CONCENTRATION:</b>	0.5 µg/mL for Western blotting 5 µg/mL for Immunocytochemistry 4 µg/mL for In-Cell ELISA (0.4 µg/well) 1 µg/mL for Flow Cytometry
<b>mAb PURITY:</b>	Near homogeneity as judged by SDS-PAGE. The antibody was produced <i>in vitro</i> using hybridomas grown in serum-free medium, and then purified by biochemical fractionation.
<b>STORAGE CONDITIONS:</b>	Store at 4°C. Do not freeze.
<b>COUNTRY OF ORIGIN:</b>	USA

**BACKGROUND:**

Nicotinamide nucleotide transhydrogenase (NNT) is a mitochondrial inner membrane protein catalyzing the interconversion of NADH and NADPH within the matrix space of the organelle. It couples this reaction to proton translocation across the inner membrane. In the presence of an electrochemical proton gradient the production of NADPH is strongly favored. NADPH is required in the mitochondrial matrix to keep the ratio of GSH:GSSG high via the NADPH-dependent glutathione reductase. Thus NNT has an important role to play in defenses against oxidative stress produced by the organelle.

A novel, unexpected role of NNT is in insulin secretion. The absence of NNT prevents glucose from closing the K<sup>+</sup>ATP channel and from opening the Ca<sup>2+</sup> channel in pancreatic beta cells. These defective beta cells also show a profound increase in ROS.

**Note: This product is for research purposes only. It is not to be used in humans or for diagnostic purposes.**

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