

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human NMNAT-1 in direct ELISAs and Western blots.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf21-derived recombinant human NMNAT-1 Ser4-Thr279 Accession # Q9HAN9
Conjugate	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunoprecipitation	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

NMNAT-1 is expressed in the nuclei of all human tissues, with highest expression in skeletal muscle, heart, kidney, pancreas, and brain (1). The enzyme transfers adenylate from ATP to nicotinamide ribonucleotide or nicotinate ribonucleotide to generate NAD⁺ or deamido-NAD⁺, and is an essential enzyme for the production of nuclear NAD⁺ (2). Nuclear NAD⁺ is required by poly(ADP-ribose) polymerase 1 (PARP-1), which poly-ADP-ribosylates chromatin in response to DNA strand breaks. NMNAT-1 is known to interact with PARP-1, resulting in its activation, but this interaction with PARP-1 is prevented when NMNAT-1 is phosphorylated at Ser136 (3). Nuclear NAD⁺ levels are also important for the regulation of SIR2 histone deacetylases (4). A naturally occurring Ube4b/NMNAT-1 chimeric protein is directly involved in slowing the degeneration of injured neurons in mice (5). NMNAT activity is required for the activation of tiazofurin, a drug used to treat leukemia (6). Two other NMNAT enzymes are present in humans. NMNAT-2 is localized in the Golgi complex and cytoplasm, and NMNAT-3 is a mitochondrial enzyme (7).

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.