Human NMNAT-1 Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF5865

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human NMNAT-1 in direct ELISAs and Western blots.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant human NMNAT-1 Ser4-Thr279 Accession # Q9HAN9
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

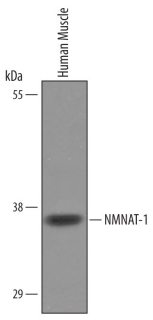
APPLICATIONS

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.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human NMNAT-1 (Catalog # 5865-NT), see our available Western blot detection antibodies

DATA

Western Blot



Detection of Human NMNAT-1 by Western Blot. Western blot shows lysates of human muscle tissue. PVDF Membrane was probed with 1 µg/mL of Sheep Anti-Human NMNAT-1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF5865) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for NMNAT-1 at approximately 35 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 8.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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).

References:

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2. Schweiger, M. *et al.* (2001) FEBS Lett. **492**:95.
3. Berger, F. *et al.* (2007) Proc. Natl. Acad. Sci. USA **104:**3765.
4. Revollo, J.R. *et al.* (2004) J. Biol. Chem. **279**:50754.
5. Mack, T.G. *et al.* (2001) Nature Neurosci. **4**:1199.
6. Boulton, S. *et al.* (1997) Br. J. Cancer **76**:845.
7. Berger, F. *et al.* (2005) J. Biol. Chem. **280**:36334.

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