

Product Information

Monoclonal Anti-GAPDH-Peroxidase Clone GAPDH-71.1

Produced in Mouse, Purified Immunoglobulin

G9295

Product Description

Monoclonal Anti-GAPDH-Peroxidase is a solution of a Protein A purified monoclonal anti-GAPDH clone GAPDH-71.1, conjugated to horseradish peroxidase. Monoclonal Anti-GAPDH (mouse IgM isotype) is derived from the hybridoma GAPDH-71.1 produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with rabbit GAPDH. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Cat. Number ISO2).

Monoclonal Anti-GAPDH-Peroxidase recognizes human, monkey, bovine, canine, rat, mouse, hamster, mink, rabbit, chicken, and turkey GAPDH. It does not cross-react with non-vertebrate and prokaryote GAPDH. The conjugated antibody may be used in immunoblotting (~ 37 kDa). The non-conjugated antibody can also be used in ELISA and immunocytochemistry.

The enzyme glyceraldehyde-3-phosphate dehydrogenase (EC 1.2.1.12) is a tetramer of identical chains that catalyzes the reversible oxidative phosphorylation of glyceraldehyde-phosphate in the presence of inorganic phosphate and nicotinamide adenine dinucleotide (NAD). This is an important energy-yielding step in carbohydrate metabolism. GAPDH is found in almost all species with a low rate of evolutionary changes.¹ GAPDH was found also to bind to several proteins such as: actin, tubulin, amyloid precursor, polyglutamine peptides, DRPLA, and huntingtin. In human embryonic kidney and mouse neuroblastoma cell lines, it was shown that nuclear translocation and associated neurotoxicity of mutant huntingtin is mediated by a ternary complex of huntingtin, GAPDH, and a ubiquitin E3 ligase named SIAH1. Over-expression of GAPDH or SIAH1 enhances nuclear translocation of mutant huntingtin and cytotoxicity.²

GAPDH was also found to be part of the multicomponent OCT1 coactivator complex, OCA-S. This complex is essential for the S phase-dependent histone H2B transcription. This association links the H2B transcriptional machinery to cell cycle regulation and possibly to the cellular metabolic state (redox status).³

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, and 0.01% thimerosal as a preservative.

Antibody concentration: 2-5 mg/mL

Molar ratio Ab/E: 0.1-0.8

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting

A working dilution of 1:35,000-1:70,000 is recommended using A431 total cell extract.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Burke, J.R., et al., *Nature Med.* **2**: 347-350 (1996).
2. Bae, B.-I., et al., *Proc. Nat. Acad. Sci. USA*, **103**: 3405-3409 (2006).
3. Zheng, L., et al., *Cell*, **114**: 255-266 (2003).

Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

Technical Assistance

Visit the tech service page at SigmaAldrich.com/techservice.

Standard Warranty

The applicable warranty for the products listed in this publication may be found at SigmaAldrich.com/terms.

Contact Information

For the location of the office nearest you, go to SigmaAldrich.com/offices.

The life science business of Merck operates as MilliporeSigma in the U.S. and Canada.

Merck and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources.

© 2021 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.
G9295dat Rev 05/21

The Merck logo, consisting of the word "MERCK" in a bold, red, sans-serif font.