

Product Information

Anti-Prox1 antibody , Mouse monoclonal clone 4G10

purified from hybridoma cell culture

Catalog Number **P0089**

Product Description

Monoclonal Anti-Prox1 (mouse IgG2b isotype) is derived from the hybridoma 4G10 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a recombinant fusion protein corresponding to amino acids 547-737 of human Prox1 (Gene ID: 5629).¹ The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Prox1 recognizes human, chicken, rat, and lizard Prox1.¹ The antibody may be used in various immunochemical techniques including ELISA, immunoblotting (~84 kDa),¹ and immunocytochemistry.

Multicellular organisms achieve cellular differentiation through precisely regulated gene expression.² The homeodomain proteins, a transcription factor subfamily, are known to play essential roles in the determination and development of cell and body fate by interacting with specific DNA sequences for activating the transcription of reporter genes and for interacting with other homeodomain proteins.³ A member of this family, Prox1, was originally identified in vertebrate due to its homology to the *Drosophila* homeobox protein, *prospero*, a key regulator for neuroblast fate determination and photoreceptor development.⁴ In mammals, Prox1 has been shown to be an important regulator of cell differentiation and organogenesis in liver, pancreas, lens, retina, and lymphatic vessels.⁵ Furthermore, it was found to act as a tumor suppressor gene, because its deficiency or its mutated forms have been implicated in various human cancers. Knockdown of Prox1 by siRNA or by RNA mutations significantly accelerated the *in vitro* and *in vivo* growth of HCC as well as esophageal cancer cells.^{6,7} Prox1 has also been shown to be hypermethylated and transcriptionally silenced in primary and metastatic breast cancer.⁸

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.5 mg/mL

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 at -20 °C 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

Immunofluorescence: a working antibody concentration of 2.5-5 µg/mL is recommended using paraformaldehyde fixed HepG2 cells.

Note: In order to obtain the best results in various techniques and preparations, it is recommended to determine the optimal working dilution by titration.

References

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3. Demidenko, Z. et al., *Development*, **128**, 1359-1367 (2001).
4. Hong, Y.K., and Detmar, M., *Cell Tissue Res.*, **314**, 85-92 (2003).
5. Mäkinen, T. et al., *Cell. Mol. Life Sci.*, **64**, 1915-1929 (2007).
6. Takahashi, M. et al., *Neoplasia*, **8**, 1003-1010 (2006).
7. Shimoda, M. et al., *Clin. Cancer Res.*, **12**, 6005-6011 (2006).
8. Versmold, B. et al., *Int. J. Cancer*, **121**, 547-554 (2007).

DS,DV,GG,TD,KAA,PHC,MAM 12/18-1