

Product Information

Anti-Endothelial Cells antibody, Mouse monoclonal Clone P1H12, purified from hybridoma cell culture

Product Number **E9653**

Product Description

Monoclonal Anti-Endothelial cells (CD146) (mouse IgG1 isotype) is derived from the P1H12 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from mice immunized with human umbilical cord cells (HUVEC).¹ The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Number ISO2). The antibody is purified from culture supernatant of hybridoma cells, grown in a bioreactor.

Monoclonal Anti-Endothelial cells (CD146) recognizes cultured microvascular and large-vessel endothelial cells (MVEC and HUVEC, respectively) and endothelial cells in tissues and in circulation.¹ The antibody may be used in immunocytochemistry (4% paraformaldehyde/¹⁻³ 0.1–0.5% Triton™ X-100 fixed smears or live cells), immunohistochemistry (frozen sections),^{1,2} flow cytometry,³ immunoprecipitation, and ELISA. It also may be used for enrichment of endothelial cells from circulation¹⁻³ and tissues.²

CD146 (also known as A32, MCAM, Mel-CAM, MUC18, and S-Endo-1) belongs to the immunoglobulin supergene family with five immunoglobulin-like domains (V-V-C2-C2-C2), a transmembrane region, and a 63 residue cytoplasmic tail. The protein is a membrane glycoprotein that functions as a Ca^{2+} -independent cell adhesion molecule involved in heterophilic cell-cell interactions. CD146 has a molecular mass of 130 kDa in its reduced form (118 kDa unreduced), and N-linked glycosylation accounts for fifty percent of the apparent molecular mass. In some cells the molecule carries a sulfate-3-glucuronyl moiety.

Expression of the molecule was shown in a relatively limited spectrum of normal human tissues (endothelium, smooth muscle, and subpopulations of activated T cells) and malignant neoplasm (melanoma and breast carcinoma). The lineage specific expression pattern of CD146 can be useful in the differential diagnosis of certain lesions including melanomas and various types of gestational trophoblastic lesions. CD146 expression can promote tumor progression in human melanoma, through enhanced interaction between melanoma cells and endothelial cells. However, in breast carcinoma, CD146 may act as a tumor suppressor. Overexpression of CD146 in breast carcinoma cells results in a more cohesive cell growth and in the formation of smaller tumors in nude mice. During implantation and placentation, CD146 is expressed by the intermediate trophoblast in the placental site and binds to its putative receptor in uterine smooth muscle cells thus limiting trophoblastic invasion in the myometrium. Monoclonal antibody specific for CD146 is an important tool for the identification and isolation of cells expressing CD146.²

Reagent

Monoclonal Anti-Endothelial cells (CD146) is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: ~2 mg/ml

Precautions and Disclaimer

This product is 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 prolonged storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing is not recommended. Storage in frost-free freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

For immunohistochemistry, a minimum working antibody dilution of 1:100 is recommended using frozen, acetone-fixed sections of human tongue.

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

References

1. Solovey, A. et al., *N. Engl. J. Med.*, **337**, 1584-1590 (1997).
2. St. Croix, B. et al., *Science*, **289**, 1197-1202 (2000).
3. Lin, Y. et al., *J. Clin. Invest.*, **105**, 71-77 (2000).
4. Shih, I.M. *J. Pathol.*, **189**, 4-11 (1999).

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