

PRODUCT INFORMATION



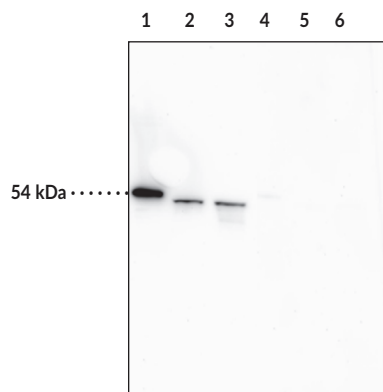
Vimentin Monoclonal Antibody (Clone 12E4)

Item No. 20197

Overview and Properties

Contents:	This vial contains 100 µg of protein G-purified monoclonal antibody.
Synonym:	VIM
Immunogen:	Recombinant human vimentin
Cross Reactivity:	(+) Vimentin, citrullinated vimentin
Species Reactivity:	(+) Human; other species not tested
Uniprot No.:	P08670
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	12E4
Host:	Mouse
Isotype:	IgG2a
Applications:	ELISA, Immunoprecipitation (IP), and Western blot (WB); the recommended starting dilution is 1:1,000 for ELISA and WB, and 5 µg per IP test (20 µl resin). Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Lane 1: Recombinant Vimentin (25 ng)

Lane 2: HEK293 Cell Lysates (10 µg)

Lane 3: HeLa Cell Lysates (10 µg)

Lane 4: Recombinant Vimentin (25 ng) + 10 µg/ml immunizing protein

Lane 5: HEK293 Cell Lysates (10 µg) + 10 µg/ml immunizing protein

Lane 6: HeLa Cell Lysates (10 µg) + 10 µg/ml immunizing protein

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/21/2023

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

Vimentin is a cytoskeleton intermediate filament protein.¹ It is composed of monomers that each contain a central α -helix rod domain, which facilitates formation of a coiled-coil dimer required for vimentin filament assembly, as well as N-terminal head and C-terminal tail domains.^{1,2} It is expressed in mesenchymal stem cells and cells of mesenchymal origin, including leukocytes, endothelial cells, and smooth muscle cells.³ Vimentin is attached to nuclei, endoplasmic reticulum, and mitochondria, and has a role in positioning organelles in the cytosol.² It regulates glial morphology, facilitates motility and directional migration of fibroblasts, and is critical to mechanotransduction of shear stress and maintenance of vascular endothelial integrity.¹ Vimentin controls transport of LDL-derived cholesterol from lysosomes to esterification sites.⁴ It is an aggresome component, forming a cage-like structure around aggregated, undegraded proteins at the microtubule organizing center.⁵ Vimentin is subject to citrullination under high calcium concentrations, which can occur during macrophage apoptosis, and citrullinated vimentin has been shown to have a role in the production of anti-citrullinated protein antibodies (ACPAs).^{6,7} ACPAs against citrullinated proteins, such as vimentin, are considered to be highly specific markers for rheumatoid arthritis and other autoimmune diseases.⁶ Cayman's Vimentin Monoclonal Antibody (Clone 12E4) can be used for ELISA, immunoprecipitation (IP), and Western blot (WB) applications. The antibody recognizes vimentin at approximately 54 kDa from human samples.

References

1. Eriksson, J.E., Dechat, T., Grin, B., *et al.* Introducing intermediate filaments: From discovery to disease. *J. Clin. Invest.* **119**(7), 1763-1771 (2009).
2. Chang, L., Shav-Tal, Y., Trcek, T., *et al.* Assembling an intermediate filament network by dynamic cotranslation. *J. Cell. Biol.* **172**(5), 747-758 (2006).
3. Franke, W.W., Grund, C., Kuhn, C., *et al.* Formation of cytoskeletal elements during mouse embryogenesis. III. Primary mesenchymal cells and the first appearance of vimentin filaments. *Differentiation* **23**(1), 43-59 (1982).
4. Sarria, A.J., Panini, S.R., and Evans, R.M. A functional role for vimentin intermediate filaments in the metabolism of lipoprotein-derived cholesterol in human SW-13 cells. *J. Biol. Chem.* **267**(27), 19455-19463 (1992).
5. Johnston, J.A., Ward, C.L., and Kopito, R.R. Aggresomes: A cellular response to misfolded proteins. *J. Cell Biol.* **143**(7), 1883-1898 (1998).
6. Soós, L., Szekanecz, Z., Szabó, Z., *et al.* Clinical evaluation of anti-mutated citrullinated vimentin by ELISA in rheumatoid arthritis. *J. Rheumatol.* **34**(8), 1658-1663 (2007).
7. Asaga, H., Yamada, M., and Senshu, T. Selective deimination of vimentin in calcium ionophore-induced apoptosis of mouse peritoneal macrophages. *Biochem. Biophys. Res. Commun.* **243**(3), 641-646 (1998).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM