

DESCRIPTION

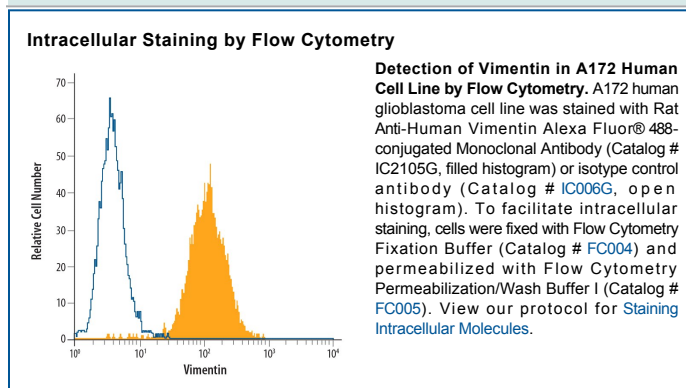
Species Reactivity	Human
Specificity	Detects human Vimentin in Western blots.
Source	Monoclonal Rat IgG _{2A} Clone # 280618
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human Vimentin Ser2-Glu466 Accession # P08670
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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
Intracellular Staining by Flow Cytometry	5 µL/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Vimentin is a 57 kDa class III intermediate filament (IF) protein that belongs to the intermediate filament family. It is the predominant IF in cells of mesenchymal origin such as vascular endothelium and blood cells (1-3). The human Vimentin cDNA encodes a 466 amino acid (aa) protein that contains head and tail regions with multiple regulatory Ser/Thr phosphorylation sites, and a central rod domain with three coiled-coil regions separated by linkers (1, 2). Human Vimentin shares 97-98% aa identity with mouse, rat, ovine, bovine, and canine Vimentin. Sixteen Vimentin coiled-coil dimers self-assemble to form intermediate (10-12 nm wide) filaments (4). These filaments then anneal longitudinally to form non-polarized fibers that support cell structure and withstand stress (4). IF fibers are highly dynamic, and half-life depends on the balance between kinase and phosphatase activity. For example, phosphorylation followed by dephosphorylation drives IF disintegration, followed by reorganization during mitosis (1, 5, 6). Interactions of head and tail domains link IFs with other structures such as actin and microtubule cytoskeletons (7). Vimentin is involved in positioning autophagosomes, lysosomes and the Golgi complex within the cell (8). It facilitates cell migration and motility by recycling internalized trailing edge integrins back to the cell surface at the leading edge (9-11). Vimentin helps maintain the lipid composition of cellular membranes, and caspase cleavage of Vimentin is a key event in apoptosis (8, 12). Phosphorylation promotes secretion of Vimentin by TNF- α -stimulated macrophages (13). Extracellular Vimentin has been shown to associate with several microbes, and appears to promote an antimicrobial oxidative burst (13, 14). Cell-associated Vimentin can also interact with Nkp46 to recruit NK cells to tuberculosis-infected monocytes (15).

References:

1. Omary, M.B. *et al.* (2006) Trends Biochem. Sci. **31**:383.
2. Ivaska, J. *et al.* (2007) Exp. Cell Res. **313**:2050.
3. Ferrari, S. *et al.* (1986) Mol. Cell. Biol. **6**:3614.
4. Sokolova, A.V. *et al.* (2006) Proc. Natl. Acad. Sci. USA **103**:16206.
5. Eriksson, J.E. *et al.* (2004) J. Cell Sci. **117**:919.
6. Li, Q-F. *et al.* (2006) J. Biol. Chem. **281**:34716.
7. Esue, O. *et al.* (2006) J. Biol. Chem. **281**:30393.
8. Styers, M.L. *et al.* (2005) Traffic **6**:359.
9. McInroy, L. and A. Maata (2007) Biochem. Biophys. Res. Commun. **360**:109.
10. Nieminen, M. *et al.* (2006) Nat. Cell Biol. **8**:156.
11. Ivaska, J. *et al.* (2005) EMBO J. **24**:3834.
12. Byun, Y. *et al.* (2001) Cell Death Differ. **8**:443.
13. Mor-Vaknin, N. *et al.* (2003) Nat. Cell Biol. **5**:59.
14. Zou, Y. *et al.* (2006) Biochem. Biophys. Res. Commun. **351**:625.
15. Garg, A. *et al.* (2006) J. Immunol. **177**:6192.

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose, Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.