

11-254-C025

## Monoclonal Antibody to Vimentin Purified Antibody (0.025 mg)

|                             |  |
|-----------------------------|--|
| <b>Clone:</b>               | VI-01  |
| <b>Isotype:</b>             | Mouse IgM  |
| <b>Specificity:</b>         | The antibody VI-01 reacts with vimentin, a 57 kDa intermediate filament expressed in variety of mesenchymal and mesodermal cell types. Cross-reactivity was found with smooth muscle desmin.   |
| <b>Regulatory Status:</b>   | RUO  |
| <b>Immunogen:</b>           | Pellet of porcine brain cold stable proteins after depolymerization of microtubules.   |
| <b>Species Reactivity:</b>  | Mammalian  |
| <b>Application:</b>         | Western Blotting<br>Immunocytochemistry<br>Staining technique:<br>RBL rat basophilic leukemia cell line:(a) Fix cells for 10 min in methanol at -20°C and for 6 min in acetone at -20°C; (b) Fix cells directly in methanol for 10 min at -20°C or in acetone for 10 min at -20°C.<br>Incubation: 45 min RT<br>Positive control:<br>3T3 mouse Swiss albino fibroblast cell line<br>RBL rat basophilic leukemia cell line |
| <b>Purity:</b>              | > 95% (by SDS-PAGE)  |
| <b>Purification:</b>        | Purified by precipitation and chromatography   |
| <b>Concentration:</b>       | 1 mg/ml  |
| <b>Storage Buffer:</b>      | Tris buffered saline (TBS) with 15 mM sodium azide, approx. pH 8.0   |
| <b>Storage / Stability:</b> | Store at 2-8°C. Do not freeze. Do not use after expiration date stamped on vial label.   |
| <b>Expiration:</b>          | See vial label   |
| <b>Lot Number:</b>          | See vial label   |

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**Antibodies****Background:**

Vimentin (57 kDa) is the most ubiquitous intermediate filament protein and the first to be expressed during cell differentiation. All primitive cell types express vimentin but in most non-mesenchymal cells it is replaced by other intermediate filament proteins during differentiation. Vimentin is expressed in a wide variety of mesenchymal cell types - fibroblasts, endothelial cells etc., and in a number of other cell types derived from mesoderm, e.g., mesothelium and ovarian granulosa cells. In non-vascular smooth muscle cells and striated muscle, vimentin is often replaced by desmin, however, during regeneration, vimentin is reexpressed. Cells of the lympho-haemopoietic system (lymphocytes, macrophages etc.) also express vimentin, sometimes in scarce amounts. Vimentin is also found in mesoderm derived epithelia, e.g. kidney (Bowman capsule), endometrium and ovary (surface epithelium), in myoepithelial cells (breast, salivary and sweat glands), and in thyroid gland epithelium. In these cell types, as in mesothelial cells, vimentin is coexpressed with cytokeratin.

Furthermore, vimentin is detected in many cells from the neural crest. Particularly melanocytes express abundant vimentin. In glial cells vimentin is coexpressed with Glial Fibrillary Acidic Protein (GFAP). Vimentin is present in many different neoplasms but is particularly expressed in those originated from mesenchymal cells. Sarcomas e.g., fibrosarcoma, malignant fibrous histiocytoma, angiosarcoma, and leiomyosarcoma, as well as lymphomas, malignant melanoma and schwannoma, are virtually always vimentin positive. Mesoderm derived carcinomas like renal cell carcinoma, adrenal cortical carcinoma and adenocarcinomas from endometrium and ovary usually express vimentin. Also thyroid carcinomas are vimentin positive. Any low differentiated carcinoma may express some vimentin. Vimentin is frequently included in the so-called primary panel (together with CD45, cytokeratin, and S-100 protein). Intense staining reaction for vimentin without coexpression of other intermediate filament proteins is strongly suggestive of a mesenchymal tumour or malignant melanoma.

**References:**

- \*Lukas Z, Draber P, Bucek J, Draberova E, Viklicky V, Staskova Z: Expression of vimentin and glial fibrillary acidic protein in human developing spinal cord. *Histochem J.* 1989 Dec;21(12):693-701.
- \*Lukas Z, Draber P, Bucek J, Draberova E, Viklicky V, Dolezel S: Expression of phosphorylated high molecular weight neurofilament protein (NF-H) and vimentin in human developing dorsal root ganglia and spinal cord. *Histochemistry.* 1993 Dec;100(6):495-502.
- \*Draberova E, Draber P, Havlicek F, Viklicky V: A common antigenic determinant of vimentin and desmin defined by monoclonal antibody. *Folia Biol (Praha).* 1986;32(5):295-303.
- \*Bacáková L, Mares V, Lisá V, Svorčík V: Molecular mechanisms of improved adhesion and growth of an endothelial cell line cultured on polystyrene implanted with fluorine ions. *Biomaterials.* 2000 Jun;21(11):1173-9.
- \*Bacáková L, Mares V, Bottone MG, Pellicciari C, Lisá V, Svorčík V: Fluorine ion-implanted polystyrene improves growth and viability of vascular smooth muscle cells in culture. *J Biomed Mater Res.* 2000 Mar 5;49(3):369-79.

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