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# **DATASHEET**

Anti-Vimentin antibody ValidAb™

### **Product overview**

Name Anti-Vimentin antibody ValidAb<sup>TM</sup>

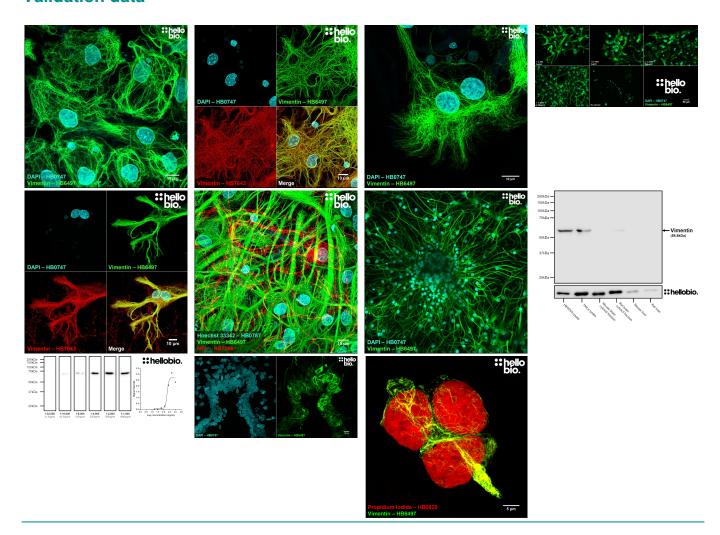
Cat No HB6497
Host Mouse
Clonality Monoclonal
Target Vimentin

**Description**Monoclonal antibody to Vimentin - class III intermediate filament expressed in mesenchymal cells used

as a marker of epithelial-mesenchymal transition. Part of the ValidAb™ range of highly validated, data-

rich antibodies.

# Validation data



# **Product information**

Clone number 2D1 Isotype IgG2a

**Purification** Protein G affinity chromatography

Concentration 1 mg/ml

**Formulation** 50% PBS, 50% glycerol plus 5mM sodium azide

**Predicted species reactivity** Rat, Human

Tested species reactivity Rat, Human, Mouse (no staining)

# **Tested applications**

**Applications** ICC, WB, IHC(IF)

Western blot optimal

concentration

0.2µg/ml (1:5,000) as tested in HEK293T and HeLa cell lysates. We have only been able to succesfully test this antibody in human derived cell lines with animal tissues showing mostly negative results.

IHC(IF) optimal concentration ICC optimal concentration

1μg/ml (1:1000) as tested in 4% PFA fixed rat brain sections 0.25µg/ml (1:4000) as tested in mixed primary rat neuronal cultures.

Positive control

Vimentin is highly expressed in human cell lines such as HEK293 and HeLa while also being

expressed at high levels in glia within the CNS.

**Negative control** Vimentin is not expressed in some human derived cell lines such as HepG2 and RT4 cells while in

tissue samples vimentin is not expressed in hepatocytes but is in other cell types within the liver.

Open data link Please follow this link to the OSF.

# **Target information**

**UniProt ID** P08670 Gene name VIM

NCBI full gene name VIM - Vimentin

**Entrez gene ID** 7431

Amino acids 466 - 53.65kDa

Isoforms

Vimentin has no fully described isoforms. **Expression** 

Vimentin is expressed in tissues with a mesenchymal origin including glia, fibroblasts, endothelial cells lining blood vessels, renal tubular cells and many cells of the immune system amongst others. Vimentin is also expressed in cells undergoing a epithelial-mesenchymal transition therefore used as a marker

for this.

Subcellular expression

**Target function** 

Vimentin is expressed in the intermediate filaments of the cytoskeleton.

As a intermediate filament component, vimentin has important roles in anchoring organelles within a

Subject to phosphorylation on multiple residues alongside posessing sumoylation, N-6 acetylation and

cell, providing resilience to mechanical stress and regulating cytoskeletal interactions.

**Processing** The initiator methionine is removed to form the mature protein.

N-6 succinylation sites.

Post translational

modifications

Homology (compared to

human)

Similar proteins

Mouse and rat show 97.4% identity to human Vimentin in a BLAST search.

The following proteins were identified as being similar to Vimentin in a BLAST search:

• Desmin - 62.9% identity GFAP - 58.1% identity

• Peripherin - 57.1% identity

**Epitope homology (between** species)

In a BLAST search the epitope sequence had the following homology with:

- Rat 94.4% identity
- Human 94.4% identity
- Mouse 88.4%
- Chimpanzee 94.4% identity
- Cow 94.4% identity
- · Chicken 66.7% identity

Epitope homology (other proteins)

A BLAST search identified the following proteins as having similarity with the epitope sequence:

- Desmin 61.1% identity, 53.5kDa
- Peripherin 64.3% identity, 53.6kDa
- Reelin 56.3% identity, 388kDa
- LY6G5B 100% identity (matched across only 7 residues, 22.5kDa)

Storage instructions Important -20°C

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not

for human or veterinary use

#### **References**

#### Vimentin in cancer and its potential as a molecular target for cancer therapy.

Satelli A et al (2011) Cellular and molecular life sciences: CMLS 68

**PubMedID** 21637948

#### Vimentin on the move: new developments in cell migration.

Battaglia RA et al (2018) F1000Research 7 **PubMedID** 30505430

### Vimentin: Regulation and pathogenesis.

Paulin D et al (2022) Biochimie 197

**PubMedID** 35151830

#### The role of GFAP and vimentin in learning and memory.

Wilhelmsson U et al (2019) Biological chemistry 400 **PubMedID** 31063456

#### Vimentin and epithelial-mesenchymal transition in human breast cancer--observations in vitro and in vivo.

Kokkinos MI et al (2007) Cells, tissues, organs 185 **PubMedID** 17587825

#### Roles of vimentin in health and disease.

Ridge KM et al (2022) Genes & development 36 **PubMedID** 35487686