

**MONOCLONAL ANTIBODY TO
HUMAN ALPHA-V/BETA-3 INTEGRIN**
clone BV3



Catalog no HM2034 (lot number and expiry date are indicated on the label)

Description The monoclonal antibody BV3 recognizes human alpha-V/beta-3 integrin present on human cells. Integrins are a superfamily of $\alpha\beta$ heterodimeric cell-surface adhesion receptors found in many species. They are expressed on a variety of cells and mediate numerous physiological processes, including inflammation, migration, adhesion and proliferation. The $\beta 3$ family consist of 2 members: $\alpha 11\beta 3$ and $\alpha v\beta 3$, which mediate cell-cell and cell-ECM interactions and are important for cellular migration, regulation of gene expression, cell survival, adhesion and differentiation. All processes which are involved in tissue development, angiogenesis and thrombosis. Each subunit consist of an extracellular domain, a single transmembrane segment and a cytoplasmic tail. They connect to the actin cytoskeleton via adaptor proteins that bind their cytoplasmic tails. Cell matrix adhesions also act as signaling units by their capacity to organize the actin cytoskeleton and to accumulate various signaling intermediates. Integrin $\alpha v\beta 3$ was originally identified as the vitronectin receptor. Nevertheless, other ligands include fibrinogen, fibronectin, laminin, thrombospondin, Von Willebrand factor, tenascin, osteopontin and several forms of collagen. The interactions of integrin $\alpha v\beta 3$ to those ligands is mediated by the RGD (Arg-Gly-Asp) sequence motif present in these proteins. Deregulation of $\beta 3$ integrins is involved in e.g. autoimmune diseases, cardiovascular disorders, transplant rejection and tumorigenesis. In contribution to the latter, integrin $\alpha v\beta 3$ contribute by supporting growth of small (tumor) blood vessels thereby potentiating the metastatic potential. Overexpression of integrin $\alpha v\beta 3$ has been demonstrated in various tumors and activated endothelium.

Aliases Vitronectin receptor, integrin $\alpha v\beta 3$, cd51/cd61

Species Mouse IgG₁

Cross reactivity	Cross reactant	Reactivity
	Human	Yes

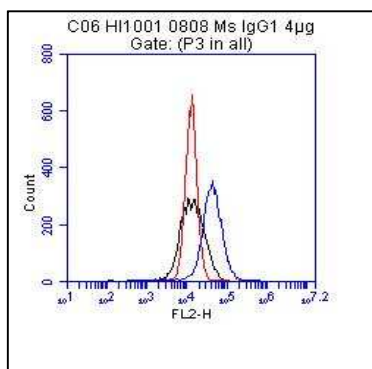
Formulation 1 ml (100 μ g/ml) 0.2 μ m filtered antibody solution in PBS, containing 0.1% bovine serum albumin and 0.02% sodium azide

Application

	F	FC ^{2*}	FS	IA	IF ³	IP	P ¹	W
Yes		•		•	•	•	•	
No								•
N.D.	•		•					

N.D.= Not Determined; F = Frozen sections; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IF = Immuno Fluorescence; IP = Immuno Precipitation; P = Paraffin sections; W = Western blot
*) Application FC has been tested by Hycult Biotech.

Application notes FC: Antibody BV3 stains the extracellular domain of integrin $\alpha v\beta 3$. The cells were fixed in 4% paraformaldehyde before before analysis. Negative control the primary antibody was omitted. (Ref.2)
IHC: Tissue sections fixed in Histochoice and blocked with 5% BSA. (Ref.1).



HUVEC cells
IgG1 isotype control
HM2034

HUVEC cells were incubated with 2 μ g/ml HM2034 for 1h at 4 $^{\circ}$ C

References	<ol style="list-style-type: none"> 1. Newton, S et al.; Electroconvulsive seizure increases adult hippocampal angiogenesis in rats. <i>Eur J neurosc.</i> 2006, <i>24</i>:819-828 2. Merkel, O et al.; Integrin $\alpha\beta3$ targeted gene delivery using RGD peptidomimetic conjugates with copolymers of PRGylated poly(ethyleneimine). <i>Bioconj chem.</i> 2009, <i>20</i>:1270-1280 3. Dare, E et al.; Fibrin sealants from fresh/frozen plasma as scaffolds for in vitro articular cartilage regeneration. <i>Tissue engineering</i>, 2009, <i>15</i>:2285 										
Use	For flow cytometry and immunohistochemistry dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50.										
Positive control	HUVEC cells										
Storage and stability	Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year. The exact expiry date is indicated on the label.										
Precautions	For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.										
Also available	<table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">HM2032</td> <td>Monoclonal antibody against Human VE-cadherin, clone BV9</td> </tr> <tr> <td>HM2033</td> <td>Monoclonal antibody against Human beta1 integrin, clone BV7</td> </tr> <tr> <td>HM2034F</td> <td>FITC conjugated monoclonal antibody against Human alpha-V/beta-3 integrin, clone BV3</td> </tr> <tr> <td>HM2035</td> <td>Monoclonal antibody against Human beta3 integrin, clone BV4</td> </tr> <tr> <td>HM2036</td> <td>Monoclonal antibody against Human Vitronectin, clone BV1</td> </tr> </table>	HM2032	Monoclonal antibody against Human VE-cadherin, clone BV9	HM2033	Monoclonal antibody against Human beta1 integrin, clone BV7	HM2034F	FITC conjugated monoclonal antibody against Human alpha-V/beta-3 integrin, clone BV3	HM2035	Monoclonal antibody against Human beta3 integrin, clone BV4	HM2036	Monoclonal antibody against Human Vitronectin, clone BV1
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