

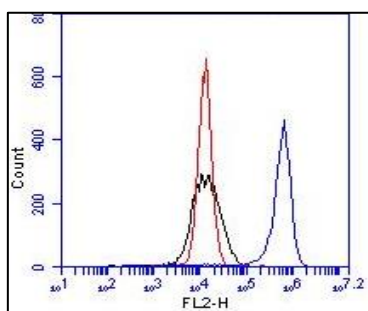
CERTIFICATE OF ANALYSIS – TECHNICAL DATA SHEET

Product name	Beta-1 Integrin, Human, clone BV7		
Catalog number	HM2033-20UG		
Lot number	-	Expiry date	-
Volume	200 µl	Amount	20 µg
Formulation	0.2 µm filtered in PBS+0.1%BSA	Concentration	100 µg/ml
Host Species	Mouse IgG1	Conjugate	None
Endotoxin	<24 EU/mg	Purification	Protein G
Storage	4°C		

Application notes

	IHC-F	IHC-P	IF	FC	FS	IA	IP	W
Reference #				1-3	1,2,4,5		1	
Yes				•	•	•	•	•
No								
N.D.	•	•	•					

N.D. = Not Determined; IHC = Immuno histochemistry; F = Frozen sections; P = Paraffin sections; IF = Immuno Fluorescence; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IP = Immuno Precipitation; W = Western blot



FC: Beta-1 integrin expression on HUVEC cells. Flow cytometric detection of human β 1-integrin on HUVECs (mAb BV7; Cat# HM2033). Controls and anti-human β 1-integrin at 0.4 µg/100000 cells (1 hr 4 °C). Red: isotype control mouse IgG₁, Black: irrelevant mouse IgG₁ control, Blue: HM2033, clone BV7.

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.

- FC: Antibody BV7 stains the extracellular domain of beta-1 integrin. HUVEC cells were fixed in 4% paraformaldehyde before staining. Mouse IgG₁ isotype was used as negative.
- FS: Antibody BV7 functions as an inhibiting antibody. The antibody was functionally tested by adhesion assay (ref 1), chemotaxis (ref 2), patch clamp analysis (ref 3) and neurotoxicity induced apoptosis (ref 4). Positive control: HUVECs grown on coverslips.
- Positive control: HT-29 colon carcinoma, Endothelial cells.

General Information

Description

The monoclonal antibody BV7 recognizes human β 1-integrin. Beta-1 integrin is a ubiquitously expressed ~89 kDa type I transmembrane protein functioning as receptor when heterodimerized with one alpha subunit. It belongs to the integrin beta chain family consisting of four different genes, encoding multiple β -integrins via alternative splicing. Ligand-recognition depends on the composition of the heterodimer: either collagen, fibronectin, VCAM1, laminin, cytotactin, osteopontin, epiligrin, thrombospondin and CSPG4 can bind to the integrin-complex. Beta-1 integrins recognize the sequence R-G-D in a wide array of ligands. Isoform beta-1B interferes with isoform beta-1A resulting in a dominant negative effect on cell adhesion and migration (in vitro). In case of HIV-1 infection, the interaction with extracellular viral Tat protein seems to enhance angiogenesis in Kaposi's sarcoma lesions. When associated with α 7, β 1-integrin regulates cell adhesion and laminin matrix deposition. BV7 is active on HT-29 colon carcinoma cells and on HCCP-

2998 tumor cells. It is involved in promoting endothelial cell motility and angiogenesis. Furthermore, β 1-integrin plays a mechanistic adhesive role during telophase, and is required for the successful completion of cytokinesis. Upon activation integrins in general, including β 1-integrin, are known to exhibit global structural rearrangements and exposure of ligand binding sites. β 1-integrin modulation is of importance in tissue repair and regeneration. In cultured primary hippocampal neurons, astrocytes and tissues, cell surface expression of amyloid beta fibrils (key hallmark of Alzheimer's disease) selectively co-localized with β 1-integrin. Preincubation of cells with antibodies against β 1-integrin, as well as α 1-integrin, greatly enhanced amyloid beta-induced apoptosis, indicating a protective role for integrins in apoptosis. The monoclonal antibody BV7 does not recognize α 5 β 1 complex and not the cytoplasmic part of the β 1-subunit. BV7 binds to several other tumor cells (MG3 osteosarcoma, A375 melanoma, MHCC-1410 and Lovo colon carcinoma) but does not affect adhesion to endothelial cells.

Immunogen	Human umbilical vein EC
Aliases	CD29, fibronectin receptor subunit beta, VLA-4 subunit beta
References	<ol style="list-style-type: none">1. Martin-Padura, I et al; A novel mechanism of colon carcinoma cell adhesion to the endothelium triggered by β1 integrin chain. J Biol Chem 1994, 269: 61242. Palmieri, D et al; Trimer carboxyl propeptide of collagen I produced by mature osteoblasts is chemotactic for endothelial cells. J Biol Chem 2000, 275: 326583. Martel, V et al; Talin controls exit of the integrin α5β1 from an early compartment of the secretory pathway. J Cell Sci 2000, 113: 19514. Hofmann, G et al; HERG K⁺ channels activation during β1 integrin-mediated adhesion to fibronectin induces an up-regulation of αvβ3 integrin in the preosteoclastic leukemia cell line FLG29.1. J Biol Chem 2001, 276: 49235. Bozzo, C et al; Involvement of β1 integrin in βAP-induced apoptosis in human neuroblastoma cells. Mol Cell Neurosci 2004, 25: 1
Storage&stability	Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year.
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.

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Approved by Manager of QC
Brenda Teunissen

Date
16/11/2020

Do you have any questions or comments regarding this product? Please contact us via support@hycultbiotech.com.