

Mouse anti-Beta 1 Integrin, clone BV7 (Monoclonal)

Clone no. BV7

MONOSAN

Product name	Mouse anti-Beta 1 Integrin, clone BV7 (Monoclonal)
Host	Mouse
Applications	FC, FUNC, ELISA, IP, WB
Species reactivity	human
Conjugate	-
Immunogen	Unknown or proprietary to MONOSAN and/or its suppliers
Isotype	IgG1
Clonality	Monoclonal
Clone number	BV7
Size	1 ml
Concentration	100 ug/ ml
Format	-
Storage buffer	PBS with 0.1% BSA and 0.02% sodium azide
Storage until expiry date	2-8°C

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Additional info

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 1-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. Monoclonal antibody BV7 is active on HT-29 colon carcinoma cells and on HCCP-2998 tumor cells. 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.

References

1. Martin-Padura; I et al. J Biol Chem 1994; 269: 6124
2. Palmieri, D et al J Biol Chem 2000, 275: 32658
3. Martel; V et al. J Cell Sci 2000; 113: 1951
4. Hofmann G et al. J Biol Chem 2001; 276: 4923
5. Bozzo C et al. Mol Cell Neurosci 2004; 25: 1

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