Human DSCAM Long Isoform Antibody

Monoclonal Mouse IgG_{2B} Clone # 399212

Catalog Number: MAB36661

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human DSCAM Long Isoform in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant human DSCAM-L1 is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 399212
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human DSCAM Long Isoform Glu18-Met1595 Accession # O60469
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μm filtered solution in PBS.

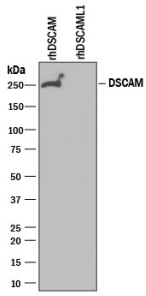
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	See Below
Immunocytochemistry	8-25 µg/mL	See Below

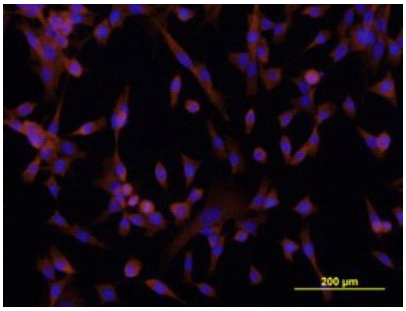
DATA

Western Blot



Detection of Recombinant Human DSCAM by Western Blot. Western blot shows 25 ng of Recombinant Human DSCAM (Catalog # 3666-DS) and Recombinant Human DSCAM-L1 (Catalog # 3315-DL). PVDF Membrane was probed with 1 µg/mL of Mouse Anti-Human DSCAM Long Isoform Monoclonal Antibody (Catalog # MAB36661) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for DSCAM at approximately 250 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 3.

Immunocytochemistry



DSCAM in A172 Human Cell Line. DSCAM was detected in immersion fixed A172 human glioblastoma cell line using Mouse Anti-Human DSCAM Long Isoform Monoclonal Antibody (Catalog # MAB36661) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (orange; Catalog # NL007) and counter-stained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Down syndrome cell adhesion molecule (DSCAM) is a 220 kDa type I transmembrane glycoprotein and member of the immunoglobulin superfamily (1). Human DSCAM, which maps to a Down syndrome region of chromosome 21q22.2-22.3, is synthesized as a 2012 amino acid (aa) precursor that contains a 17 aa signal sequence, a 1578 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 396 aa cytoplasmic tail. The ECD contains ten Ig-like C2-type domains, six fibronectin type III domains, and 16 potential sites for N-linked glycosylation. Splicing variants lead to a second, shorter isoform, which has a ten aa substitution for aa 1562-1571 in the longer isoform, and a deletion of residues corresponding to aa 1572-2012 in the longer isoform. Human mature DSCAM is 98% aa identical to mature mouse and rat DSCAM. Studies on mice have shown that DSCAM is expressed widely in the developing nervous system (1, 2). More recent studies indicate that DSCAM plays an important role in neurite arborization, cell body spacing, and lamina-specific synaptic targeting in vertebrate retina (2-4). DSCAM directly binds to cytoplasmic Pak1 and stimulates Pak1 phosphorylation and activity (5). In addition, DSCAM activates both JNK and p38 MAP kinases, and expression of the cytoplasmic domain of DSCAM induces a morphological change in cultured cells that is JNK-dependent (5). Thus, it appears that DSCAM signals through Pak1 and functions in axon guidance. Furthermore, DSCAM, in collaboration with DCC, interacts with Netrin-1 and is a receptor required for Netrin-dependent commissural axon outgrowth and pathfinding (2, 6).

References:

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