Human Drebrin 1 Antibody

Monoclonal Mouse IgG_1 Clone # 838102

Catalog Number: MAB7739

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Drebrin 1 in ELISAs.
Source	Monoclonal Mouse IgG_1 Clone # 838102
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human Drebrin 1 Asn482-Asp649 (Ser553Pro) Accession # Q16643
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 either lyophilized or as a 0.2 μm filtered solution in PBS.

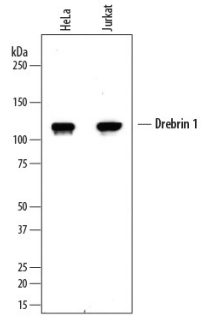
APPLICATIONS

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
Simple Western	10 µg/mL	See Below

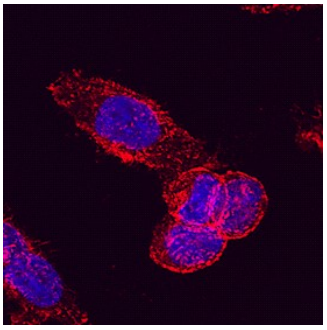
DATA

Western Blot



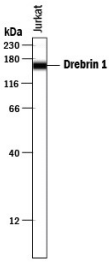
Detection of Human Drebrin 1 by Western Blot. Western blot shows lysates of HeLa human cervical epithelial carcinoma cell line and Jurkat human acute T cell leukemia cell line. PVDF membrane was probed with 1 µg/mL of Mouse Anti-Human Drebrin 1 Monoclonal Antibody (Catalog # MAB7739) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for Drebrin 1 at approximately 120 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry



Drebrin 1 in HeLa Human Cell Line. Drebrin 1 was detected in immersion fixed HeLa human cervical epithelial carcinoma cell line using Mouse Anti-Human Drebrin 1 Monoclonal Antibody (Catalog # MAB7739) at 25 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cell membrane and cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Simple Western



Detection of Human Drebrin 1 by Simple Western™. Simple Western lane view shows lysates of Jurkat human acute T cell leukemia cell line, loaded at 0.5 mg/mL. A specific band was detected for Drebrin 1 at approximately 162 kDa (as indicated) using 10 µg/mL of Mouse Anti-Human Drebrin 1 Monoclonal Antibody (Catalog # MAB7739) . This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
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

Drebrin 1 (DBN-1 [developmentally-regulated brain protein1]; also drebrin-E/E2 [Embryonic]) is an intracellular member of the ADF-H (actin-depolymerizing factor-H) family of actin binding proteins. Although its predicted MW is 72 kDa, it runs anomalously at 115-116 kDa in SDS-PAGE. It is expressed by neurons, gastric Parietal cells, astrocytes, distal convoluted tubule epithelium and proton-secreting intercalated cells of the renal collecting duct. Drebrin 1 interacts with multiple partners near the membrane. It links connexin-43 and F-actin, thereby stabilizing membrane gap junctions. It also binds to EB3 (end-binding protein 3) on microtubules, facilitating actin-microtubule interactions. Human Drebrin 1 is 649 amino acids (aa) in length. It contains one actin depolymerizing homology domain (aa 3-134), an actin-binding region (≈ aa 150-300), and two HOMER binding motifs (aa 539-543 and 617-621). There are at least 10 utilized Ser/Thr phosphorylation sites and one utilized Tyr phosphorylation site. Alternative splicing generates drebrin-A (Adult), a 124-126 kDa isoform that contains a 46 aa insert after Gly319. Drebrin-A is found in neurons and possibly podocytes, and is associated with dendritic spines where it inhibits the interaction of F-actin with α-actinin and tropomyosin. This favors the generation of excitatory impulses in neurons. Three other potential isoform variants are noted. One utilizes an alternative start site at Met64, a second shows a 60 aa substitution for aa 1-110, and a third contains a 28 aa substitution for aa 4-29. Over aa 482-649, human Drebrin 1 shares 84% aa sequence identity with mouse Drebrin 1.

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