

#### DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Human                                                                                                  |
| <b>Specificity</b>                                                                                                                                                                                      | Detects human Drebrin 1 in direct ELISAs and Western blots.                                            |
| <b>Source</b>                                                                                                                                                                                           | Polyclonal Sheep IgG                                                                                   |
| <b>Purification</b>                                                                                                                                                                                     | Antigen Affinity-purified                                                                              |
| <b>Immunogen</b>                                                                                                                                                                                        | <i>E. coli</i> -derived recombinant human Drebrin 1<br>Asn482-Asp649 (Ser553Pro)<br>Accession # Q16643 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 405<br>Excitation Wavelength: 405 nm<br>Emission Wavelength: 421 nm                        |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                                           |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |                                                                                                        |

#### 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.

|                            |                                                                        |
|----------------------------|------------------------------------------------------------------------|
| <b>Western Blot</b>        | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunocytochemistry</b> | Optimal dilution of this antibody should be experimentally determined. |

#### PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

#### 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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