

## Rabbit DAG1 Polyclonal Antibody | anti-DAG1 antibody

Phospho-DAG1 (Tyr892) Antibody

| CATALOG # | HOST   | REACTIVITY                                                                                                                                                                    | APPLICATIONS                              |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| AAA329765 | Rabbit | Human, Mouse, Rat<br>Predicted Reactivity: Pig (100%), Zebrafish (100%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (100%), Dog (100%), Chicken (100%), Xenopus (100%) | ELISA, Immunohistochemistry, Western Blot |

### PRODUCT SYNONYMS

DAG1; Polyclonal Antibody; Phospho-DAG1 (Tyr892) Antibody; 156DAG; A3a; Agrin receptor; AGRNR; Alpha-DG; alpha-DG-N; Beta-DG; Beta-dystroglycan; DAG; Dag1; DAG1\_HUMAN; Dystroglycan 1 (dystrophin-associated glycoprotein 1); Dystroglycan; alpha; Dystrophin-associated glycoprotein 1; MDDGC7; MDDGC9; OTTHUMP00000210857; OTTHUMP00000210858; anti-DAG1 antibody

### PRODUCT SPECIFICATIONS

|                                                |                                                                                                                                                                                                                                                                                        |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Host                                           | Rabbit                                                                                                                                                                                                                                                                                 |
| Reactivity                                     | Human, Mouse, Rat<br>Predicted Reactivity: Pig (100%), Zebrafish (100%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (100%), Dog (100%), Chicken (100%), Xenopus (100%)                                                                                                          |
| Clonality                                      | Polyclonal                                                                                                                                                                                                                                                                             |
| Isotype                                        | Rabbit IgG                                                                                                                                                                                                                                                                             |
| Specificity                                    | Phospho-DAG1 (Tyr892) Antibody detects endogenous levels of DAG1 only when phosphorylated at Tyr892.<br>Tissue Specificity: Expressed in a variety of fetal and adult tissues. In epidermal tissue, located to the basement membrane. Also expressed in keratinocytes and fibroblasts. |
| Purity/Purification                            | The antibody is from purified rabbit serum by affinity purification via sequential chromatography on phospho-peptide and non-phospho-peptide affinity columns.                                                                                                                         |
| Form/Format                                    | Liquid. Rabbit IgG in phosphate buffered saline, pH7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.                                                                                                                                                                               |
| Concentration                                  | 1mg/ml (varies by lot)                                                                                                                                                                                                                                                                 |
| Applicable Applications for anti-DAG1 antibody | ELISA (Peptide ELISA), IHC (Immunohistochemistry), WB (Western Blot)                                                                                                                                                                                                                   |
| Immunogen                                      | A synthesized peptide derived from human DAG1 around the phosphorylation site of Tyr892.                                                                                                                                                                                               |
| Conjugation                                    | Unconjugated                                                                                                                                                                                                                                                                           |
| Fragment                                       | Fab fragment                                                                                                                                                                                                                                                                           |

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|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Post Translational Modifications | <p>O-glycosylated. POMGNT1 catalyzes the initial addition of N-acetylglucosamine, giving rise to the GlcNAc (beta1-2)Man (alpha1-)O-Ser/Thr moiety and thus providing the necessary basis for the addition of further carbohydrate moieties. Alpha-dystroglycan is heavily O-glycosylated comprising of up to two thirds of its mass and the carbohydrate composition differs depending on tissue type. Mucin-type O-glycosylation is important for ligand binding activity. O-mannosylation of alpha-DAG1 is found in high abundance in both brain and muscle where the most abundant glycan is Sia-alpha-2-3-Gal-beta-1-4-Glc-NAc-beta-1-2-Man. In muscle, glycosylation on Thr-317, Thr-319 and Thr-379 by a phosphorylated O-mannosyl glycan with the structure 2- (N-acetylamido)-2-deoxygalactosyl-beta-1,3-2- (N-acetylamido)-2-deoxyglucosyl-beta-1,4-6-phosphomannose is mediated by like-acetylglucosaminyltransferase (LARGE1) protein and is required for laminin binding. O-mannosylation is also required for binding lymphocytic choriomeningitis virus, Old World Lassa fever virus, and clade C New World arenaviruses. The O-glycosyl hexose on Thr-367, Thr-369, Thr-372, Thr-381 and Thr-388 is probably mannose. O-glycosylated in the N-terminal region with a core 1 or possibly core 8 glycan. The beta subunit is N-glycosylated. Autolytic cleavage produces the alpha and beta subunits. In cutaneous cells, as well as in certain pathological conditions, shedding of beta-dystroglycan can occur releasing a peptide of about 30kDa. SRC-mediated phosphorylation of the PPXY motif of the beta subunit recruits SH2 domain-containing proteins, but inhibits binding to WWW domain-containing proteins, DMD and UTRN. This phosphorylation also inhibits nuclear entry.</p> |
| Subunit Structure                | <p>Monomer. Heterodimer of alpha- and beta-dystroglycan subunits which are the central components of the dystrophin-glycoprotein complex. This complex then can form a dystrophin-associated glycoprotein complex (DGC) which is composed of three subcomplexes: a cytoplasmic complex comprised of DMD (or UTRN), DTNA and a number of syntrophins, such as SNTB1, SNTB2, SNTG1 and SNTG2, the transmembrane dystroglycan complex, and the sarcoglycan-sarcospan complex. Interacts (via the N-terminal of alphaDAG1) with LARGE1; the interaction enhances laminin binding (By similarity). Interacts with SGCD. Interacts with AGR2 and AGR3. Interacts (betaDAG1) with DMD; the interaction is inhibited by phosphorylation on the PPXY motif. Interacts (betaDAG1, via its PPXY motif) with UTRN (via its WWW and ZZ domains); the interaction is inhibited by phosphorylation on the PPXY motif. Interacts (betaDAG1, via its phosphorylated PPXY motif) with the SH2 domain-containing proteins, FYN, CSK, NCK and SHC. Interacts (betaDAG1) with CAV3 (via a central WW-like domain); the interaction disrupts the binding of DMD. BetaDAG1 directly interacts with ANK3, but not with ANK2; this interaction does not interfere with DMD-binding and is required for retention at costameres (By similarity). Identified in a dystroglycan complex that contains at least PRX, DRP2, UTRN, DMD and DAG1 (By similarity). Interacts with POMGNT1. (Microbial infection) Interacts with lassa virus and lymphocytic choriomeningitis virus glycoprotein. (Microbial infection) Interacts with surface molecules of mycobacterium leprae.</p>                                                                                                                                                        |
| Subcellular Location             | <p>Secreted&gt;Extracellular space. Cell membrane&gt;Single-pass type I membrane protein. Cytoplasm&gt;Cytoskeleton. Nucleus&gt;Nucleoplasm. Cell membrane&gt;Sarcolemma. Cell junction&gt;Synapse&gt;Postsynaptic cell membrane. Note: The monomeric form translocates to the nucleus via the action of importins and depends on RAN. Nuclear transport is inhibited by Tyr-892 phosphorylation. In skeletal muscle, this phosphorylated form locates to a vesicular internal membrane compartment. In muscle cells, sarcolemma localization requires the presence of ANK2, while localization to costameres requires the presence of ANK3. Localizes to neuromuscular junctions (NMJs) in the presence of ANK2 (By similarity). In peripheral nerves, localizes to the Schwann cell membrane. Colocalizes with ERM proteins in Schwann-cell microvilli.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Preparation and Storage          | <p>Store at -20 degree C. Stable for 12 months from date of receipt.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

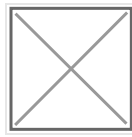
## IMAGES



**IHC (Immunohistochemistry)**  
 At 1/200 staining Human ganstric cancer tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.

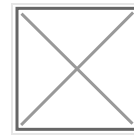


**IHC (Immunohistochemistry)**  
 At 1/200 staining Human pancreas tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



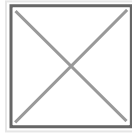
#### IHC (Immunohistochemistry)

At 1/200 staining Mouse brain tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



#### IHC (Immunohistochemistry)

Staining Rat ganstric tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary antibody.



#### WB (Western Blot)

Western blot analysis of DAG1 (Phospho-Tyr892) using UV treated HeLa whole cell lysates. -/+ means absence or presence of N peptide(1/4 non-phospho peptide) and P peptide(phospho peptide).

## ADDITIONAL INFORMATION

### Related Product Information for anti-DAG1 antibody

The dystroglycan complex is involved in a number of processes including laminin and basement membrane assembly, sarcolemmal stability, cell survival, peripheral nerve myelination, nodal structure, cell migration, and epithelial polarization. Alpha-dystroglycan is an extracellular peripheral glycoprotein that acts as a receptor for both extracellular matrix proteins containing laminin-G domains. Receptor for laminin-2 (LAMA2) and agrin in peripheral nerve Schwann cells. Beta-dystroglycan is a transmembrane protein that plays important roles in connecting the extracellular matrix to the cytoskeleton. Acts as a cell adhesion receptor in both muscle and non-muscle tissues. Receptor for both DMD and UTRN and, through these interactions, scaffolds axin to the cytoskeleton. Also functions in cell adhesion-mediated signaling and implicated in cell polarity. (Microbial infection) Alpha-dystroglycan acts as a receptor for lassa virus and lymphocytic choriomeningitis virus glycoprotein and class C new-world arenaviruses. Alpha-dystroglycan acts as a Schwann cell receptor for Mycobacterium leprae, the causative organism of leprosy, but only in the presence of the G-domain of LAMA2.

## NCBI AND UNIPROT INFORMATION

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| NCBI GI #                        | 229462879                                             |
| NCBI GeneID                      | 1605                                                  |
| UniProt Accession #              | Q14118; Q969J9; A8K6M7                                |
| Molecular Weight                 | 97,441 Da                                             |
| NCBI Official Full Name          | Dystroglycan                                          |
| NCBI Official Synonym Full Names | dystroglycan 1 (dystrophin-associated glycoprotein 1) |
| NCBI Official Symbol             | DAG1                                                  |
| NCBI Official Synonym Symbols    | A3a; DAG; AGRNR; 156DAG; MDDGC7; MDDGC9               |
| NCBI Protein Information         | dystroglycan                                          |
| UniProt Protein Name             | Dystroglycan                                          |
| UniProt Gene Name                | <b>DAG1</b>                                           |
| UniProt Synonym Gene Names       | Alpha-DG; Beta-DG                                     |
| UniProt Entry Name               | DAG1_HUMAN                                            |

**For Research Use Only.** Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

