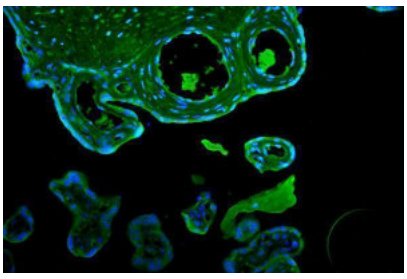
CD55 Polyclonal Antibody / Decay Accelerating Factor Antibody (R31911)

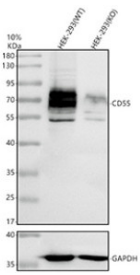
Catalog No.	Formulation	Size
R31911	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

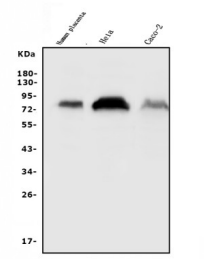
Species Reactivity	Human, Mouse
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide
UniProt	P08174
Applications	Western blot: 0.1-0.5ug/ml IHC (FFPE): 0.5-1ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This CD55 Polyclonal Antibody / Decay Accelerating Factor Antibody is available for research use only.



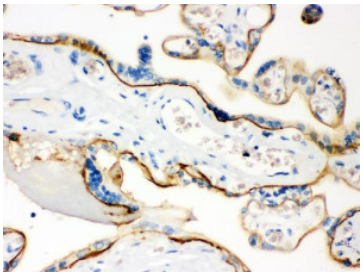
CD55 Polyclonal Antibody IF Analysis of Human Placenta Tissue. Immunofluorescence analysis of human placenta tissue using Decay Accelerating Factor Antibody. Green CD55-associated fluorescence is observed along cellular and tissue boundaries within placental structures, with blue nuclear counterstaining. The staining pattern is consistent with the membrane-associated distribution of CD55, a GPI-anchored complement regulatory protein.



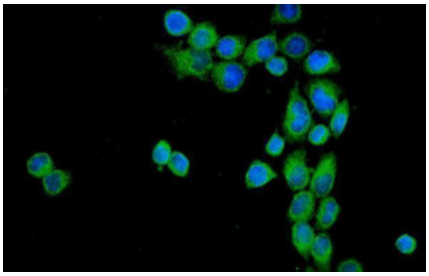
CD55 Polyclonal Antibody WB Analysis of Human HEK293 WT and CD55 KO Cells. Western blot analysis of wild-type (WT) HEK293 cell lysate (lane 1) and CD55 knockout (KO) HEK293 cell lysate (lane 2) using Decay Accelerating Factor Antibody. Prominent immunoreactive bands in the approximately 65-80 kDa region of WT cells are markedly reduced in CD55 KO cells, supporting antibody specificity. The mature glycosylated form of CD55 commonly migrates at approximately 70-90 kDa, above its calculated protein molecular weight of approximately 41 kDa. GAPDH served as the loading control.



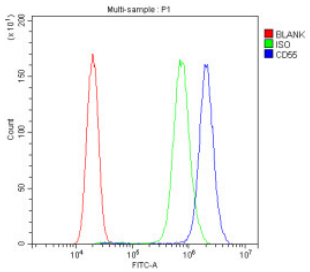
CD55 Polyclonal Antibody WB Analysis of Human Placenta, HeLa and Caco-2 Samples. Western blot analysis of human placenta tissue lysate (lane 1), HeLa cell lysate (lane 2), and Caco-2 cell lysate (lane 3) using Decay Accelerating Factor Antibody. Immunoreactive bands are detected at approximately 75-90 kDa across the tested samples, consistent with the mature glycosylated form of CD55. The calculated protein molecular weight is approximately 41 kDa, but extensive glycosylation increases its apparent molecular weight.



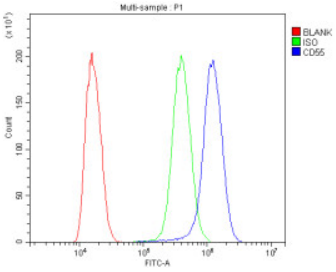
CD55 Polyclonal Antibody IHC Analysis of Human Placenta Tissue. Immunohistochemical analysis of formalin-fixed, paraffin-embedded human placenta tissue using Decay Accelerating Factor Antibody. Brown DAB staining is observed prominently along the surfaces of placental villous structures, consistent with the membrane-associated localization of CD55. Hematoxylin was used for nuclear counterstaining. Heat-induced epitope retrieval was performed using EDTA buffer (pH 8.0).



CD55 Polyclonal Antibody IF Analysis of Human SiHa Cells. Immunofluorescence analysis of human SiHa cells using Decay Accelerating Factor Antibody. Green fluorescence is observed along cellular boundaries and within the cytoplasmic regions of stained cells, with blue nuclear counterstaining. The staining demonstrates CD55-associated immunoreactivity in cultured human cervical carcinoma cells.



CD55 Polyclonal Antibody FACS Staining of Human PC-3 Cells. Flow cytometry analysis of fixed and permeabilized human PC-3 cells using Decay Accelerating Factor Antibody at 1 ug per million cells. Cells were fixed with 4% paraformaldehyde, permeabilized, blocked with normal goat serum, and incubated with primary antibody followed by a DyLight 488-conjugated secondary antibody. The antibody-stained population (blue) is compared with the rabbit IgG isotype control (green) and unlabeled control (red). This experiment demonstrates CD55-associated staining in fixed, permeabilized cells and does not establish suitability for live-cell surface flow cytometry.



CD55 Polyclonal Antibody FACS Staining of Human SiHa Cells. Flow cytometry analysis of fixed and permeabilized human SiHa cells using Decay Accelerating Factor Antibody. The CD55-stained population (blue) shows a rightward fluorescence shift relative to the rabbit IgG isotype control (green) and unlabeled control (red), demonstrating increased antibody-associated staining. The experiment was performed using fixed cells and should not be interpreted as validation for live-cell surface flow cytometry.

Description

CD55 Polyclonal Antibody / Decay Accelerating Factor Antibody targets CD55, a membrane-associated glycoprotein that protects host cells from complement-mediated injury. Also known as decay-accelerating factor (DAF), CD55 is a member of the regulators of complement activation family and is encoded by the CD55 gene. Its principal function is to limit complement amplification at cellular surfaces, helping preserve tissue integrity during immune surveillance and inflammatory responses.

CD55 is typically attached to the plasma membrane through a glycosylphosphatidylinositol (GPI) anchor. Its extracellular

region contains four complement control protein domains, also called short consensus repeats, which participate in interactions with complement components. The protein is extensively glycosylated, contributing to its mature molecular weight and structural properties. Alternative transcript variants may encode soluble forms lacking the conventional membrane anchor.

The complement system is activated through the classical, lectin, and alternative pathways, which converge on the formation of C3 convertases. These enzyme complexes generate C3 activation products that amplify complement responses and promote downstream immune effector functions. CD55 accelerates the dissociation of C3 and C5 convertases, limiting further complement activation. Unlike CD59, which inhibits membrane attack complex formation, CD55 acts primarily at the convertase stage of the cascade.

CD55 is expressed on numerous cell types, including blood cells, epithelial surfaces, and vascular endothelium. Its expression in placental tissue is particularly relevant because complement regulation contributes to the protection of maternal and fetal tissues. By restricting excessive complement activation, CD55 helps maintain the balance between immune defense and protection of healthy cells.

Defects in CD55 regulation are associated with several diseases. Acquired loss of GPI-anchored complement regulators occurs in paroxysmal nocturnal hemoglobinuria, while inherited CD55 deficiency causes CHAPLE disease, a disorder characterized by complement hyperactivation, angiopathic thrombosis, and protein-losing enteropathy. CD55 also carries antigens belonging to the Cromer blood group system.

Altered CD55 expression has been documented in malignancies, where increased complement regulation may contribute to tumor immune evasion. Its expression and activity are also relevant to inflammatory disorders and complement-associated tissue injury. CD55 Polyclonal Antibody is applicable to investigations of complement regulation, cellular protection, immune homeostasis, and disease-associated changes in complement regulatory mechanisms.

For a published monoclonal antibody targeting this complement regulatory protein, see our CD55 Antibody clone 143-30.

Application Notes

Optimal dilution of the CD55 Polyclonal Antibody / Decay Accelerating Factor Antibody should be determined by the researcher.

Immunogen

Amino acids 35-347 of human CD55 were used as the immunogen for the CD55 antibody.

Storage

After reconstitution, the CD55 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

DAF antibody, Decay accelerating factor antibody, Complement decay-accelerating factor antibody, Complement decay accelerating factor antibody, CD55 glycoprotein antibody, Complement regulatory protein CD55 antibody

Copyright © NSJ Bioreagents. All rights reserved.