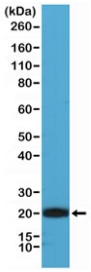
CD3 epsilon Antibody / T Cell Receptor Signaling Marker Antibody [clone RM344] (R20366)

Catalog No.	Formulation	Size
R20366-0.1ML	Antibody in PBS with 50% glycerol, 1% BSA and 0.09% sodium azide	100 ul

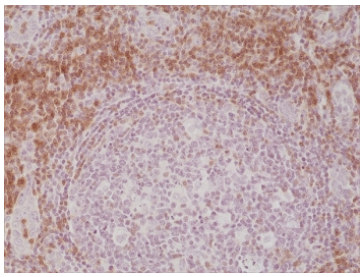
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	RM344
Purity	Protein A purified from animal origin-free supernatant
UniProt	P07766
Localization	Cell surface, cytoplasm
Applications	Immunohistochemistry (FFPE): 1:100-1:200 Western blot: 1:1000-1:2000
Limitations	This recombinant CD3 epsilon antibody is available for research use only.



CD3 epsilon Antibody western blot. Analysis of CD3 Epsilon / CD3E antibody using CD3 epsilon Antibody / T Cell Receptor Signaling Marker Antibody in human Jurkat cell lysate. Lane 1: human Jurkat cell lysate. A band is detected at approximately 23 kDa, consistent with the predicted molecular weight of CD3 epsilon. The strong, well-defined band supports reliable detection of CD3E and aligns with its role as a key component of T cell receptor signaling pathways.



CD3 epsilon Antibody Immunohistochemistry. Analysis of CD3 Epsilon / CD3E staining in FFPE human tonsil tissue using a recombinant antibody targeting this T cell receptor signaling component. Strong HRP-DAB brown membranous and cytoplasmic staining is observed in T lymphocytes within interfollicular and paracortical regions surrounding germinal centers, consistent with T-cell zone localization, while germinal center B-cell areas show reduced staining. The pattern highlights CD3 epsilon as a core component of T cell receptor signaling within lymphoid tissue architecture.

Description

CD3 epsilon (CD3E) is a transmembrane signaling subunit of the T-cell receptor (TCR) complex that is essential for antigen recognition and initiation of intracellular signaling in T lymphocytes. CD3 epsilon Antibody / T Cell Receptor Signaling Marker Antibody enables detection of CD3 epsilon / CD3E and is widely used to interrogate signaling events originating at the TCR complex. CD3 epsilon antibody, also referred to as CD3E antibody or CD3 antigen epsilon chain antibody, is commonly described as a T cell receptor signaling marker antibody because it directly participates in the earliest stages of T-cell signal transduction.

This CD3 epsilon Antibody is uniquely positioned for studying proximal TCR signaling mechanisms with high biological relevance. CD3 epsilon forms part of the CD3 complex together with CD3 gamma, CD3 delta, and CD3 zeta chains, which associate with the TCR alpha-beta or gamma-delta heterodimer at the cell surface. Upon antigen engagement, immunoreceptor tyrosine-based activation motifs within CD3 epsilon are phosphorylated, triggering recruitment of downstream signaling molecules and activation of kinase cascades. Because CD3 epsilon is embedded within this signaling framework, its detection provides a direct molecular readout of TCR signaling competence.

As a T cell receptor signaling marker antibody, CD3 epsilon antibody reagents enable detailed analysis of early activation events, including receptor clustering, signal initiation, and propagation through downstream pathways. Detection of CD3 epsilon supports studies examining how signaling intensity and duration influence T-cell proliferation, differentiation, and effector function. This makes CD3 epsilon antibody particularly valuable for dissecting signaling thresholds and pathway regulation in T cells.

CD3 epsilon-mediated signaling is tightly controlled and represents a critical checkpoint in determining T-cell fate, including activation, anergy, or tolerance. Perturbations in these pathways can significantly alter immune responses. CD3 epsilon Antibody / T Cell Receptor Signaling Marker Antibody supports investigation of these regulatory mechanisms by enabling consistent detection of CD3 epsilon within signaling complexes under varying activation states.

In experimental systems, CD3 epsilon antibody reagents are used to evaluate TCR signaling across cultured T cells, primary lymphocytes, and tissue-derived immune populations. Detection of CD3 epsilon provides a foundational anchor for studying how signaling networks are engaged, modulated, and integrated across different biological contexts.

CD3 epsilon antibody can also be combined with phosphorylation-specific or downstream pathway markers to build a comprehensive view of T-cell signaling architecture. This integrative approach allows researchers to map signaling cascades and understand how upstream receptor events translate into functional outcomes.

CD3 epsilon Antibody / T Cell Receptor Signaling Marker Antibody provides a focused and mechanistically informative tool for studying TCR-mediated signaling, supporting research centered on immune activation, signal transduction, and T-cell functional regulation.

A full range of CD3e antibody reagents for immunohistochemistry, western blot, and flow cytometry is available on our CD3e Antibody collection page.

Application Notes

The stated application concentrations are suggested starting points. Titration of the CD3 epsilon Antibody / T Cell Receptor Signaling Marker Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A peptide corresponding to the C-terminus of human CD3 epsilon chain was used as the immunogen for the CD3 epsilon Antibody / T Cell Receptor Signaling Marker Antibody.

Storage

Store the recombinant CD3 epsilon antibody at -20oC.

Alternate Names

CD3E antibody, CD3 epsilon signaling antibody, CD3 TCR signaling antibody, CD3 immune signaling marker antibody, CD3 antigen receptor antibody

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