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#4443

## CD3ε (CD3-12) Rat mAb

**For Research Use Only. Not for Use in Diagnostic Procedures.**

<b>Applications:</b> W, IP	<b>Reactivity:</b> H M	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 21	<b>Source/Isotype:</b> Rat IgG1	<b>UniProt ID:</b> #P07766	<b>Entrez-Gene Id:</b> 916
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### Product Usage Information

#### Application

Western Blotting  
Immunoprecipitation

#### Dilution

1:1000  
1:100

### Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

### Specificity/Sensitivity

CD3ε (CD3-12) Rat mAb detects endogenous levels of CD3ε protein.

### Species predicted to react based on 100% sequence homology

Pig

### Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to a region surrounding Pro184 of human CD3ε.

### Background

When T cells encounter antigens via the T cell receptor (TCR), information about the quantity and quality of antigens is relayed to the intracellular signal transduction machinery (1). This activation process depends mainly on CD3 (Cluster of Differentiation 3), a multiunit protein complex that directly associates with the TCR. CD3 is composed of four polypeptides: ζ, γ, ε, and δ. Each of these polypeptides contains at least one immunoreceptor tyrosine-based activation motif (ITAM) (2). Engagement of the TCR complex with foreign antigens induces tyrosine phosphorylation in the ITAM motifs and phosphorylated ITAMs function as docking sites for signaling molecules such as ZAP-70 and the p85 subunit of PI-3 kinase (3,4). TCR ligation also induces a conformational change in CD3ε, such that a proline region is exposed and then associates with the adaptor protein Nck (5).

### Background References

1. Kuhns, M.S. et al. (2006) *Immunity* 24, 133-139.
2. Pitcher, L.A. and van Oers, N.S. (2003) *Trends Immunol.* 24, 554-560.
3. Osman, N. et al. (1996) *Eur. J. Immunol.* 26, 1063-1068.
4. Hatada, M.H. et al. (1995) *Nature* 377, 32-38.
5. Gil, D. et al. (2002) *Cell* 109, 901-912.

### Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

### Western Blot Buffer

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

### Applications Key

**W:** Western Blotting **IP:** Immunoprecipitation

### Cross-Reactivity Key

**H:** Human **M:** Mouse

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