

# Mouse Immune Cell Phenotyping IHC Antibody Sampler Kit



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1 Kit (8 x 20 microliters)

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

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
CD4 (D7D2Z) Rabbit mAb	25229	20 µl	55 kDa	Rabbit IgG
CD8α (D4W2Z) XP® Rabbit mAb	98941	20 µl	35-42 kDa	Rabbit IgG
FoxP3 (D6O8R) Rabbit mAb	12653	20 µl		Rabbit IgG
F4/80 (D2S9R) XP® Rabbit mAb	70076	20 µl	65-250 kDa	Rabbit IgG
CD19 (Intracellular Domain) (D4V4B) XP® Rabbit mAb	90176	20 µl	95 kDa	Rabbit IgG
CD11c (D1V9Y) Rabbit mAb	97585	20 µl	145 kDa	Rabbit IgG
Granzyme B (E5V2L) Rabbit mAb	44153	20 µl	30 kDa	Rabbit IgG
CD3ε (E4T1B) XP® Rabbit mAb	78588	20 µl	23 kDa	Rabbit IgG

Please visit [cellsignal.com](http://cellsignal.com) for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

## Description

The Mouse Immune Cell Phenotyping IHC Antibody Sampler Kit provides an economical means of detecting the accumulation of immune cell types in formalin-fixed, paraffin-embedded tissue samples.

## 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.

## Background

Cluster of Differentiation 3 (CD3) is a multiunit protein complex expressed on the surface of T-cells that directly associates with the T-cell receptor (TCR). CD3 is composed of four polypeptides: ζ, γ, ε and δ. Engagement of TCR complex with antigens presented in Major Histocompatibility Complexes (MHC) induces tyrosine phosphorylation in the immunoreceptor tyrosine-based activation motif (ITAM) of CD3 proteins. CD3 phosphorylation is required for downstream signaling through ZAP-70 and p85 subunit of PI-3 kinase, leading to T cell activation, proliferation, and effector functions (1). Cluster of Differentiation 8 (CD8) is a transmembrane glycoprotein expressed primarily on cytotoxic T cells, but has also been described on a subset of dendritic cells in mice (2,3). On T cells, CD8 is a co-receptor for the TCR, and these two distinct structures are required to recognize antigen bound to MHC Class I (2). Cluster of Differentiation 4 (CD4) is expressed on the surface of T helper cells, regulatory T cells, monocytes, macrophages, and dendritic cells, and plays an important role in the development and activation of T cells. On T cells, CD4 is the co-receptor for the TCR, and these two distinct structures recognize antigen bound to MHC Class II. CD8 and CD4 co-receptors ensure specificity of the TCR-antigen interaction, prolong the contact between the T cell and the antigen presenting cell, and recruit the tyrosine kinase Lck, which is essential for T cell activation (2). Granzyme B is a serine protease expressed by CD8<sup>+</sup> cytotoxic T lymphocytes and natural killer (NK) cells and is a key component of the immune response to pathogens and transformed cancer cells (4). Forkhead box P3 (FoxP3) is crucial for the development of T cells with immunosuppressive regulatory properties and is a well-established marker for T regulatory cells (Tregs) (5). CD19 is a co-receptor expressed on B cells that amplifies the signaling cascade initiated by the B cell receptor (BCR) to induce activation. It is a biomarker of B lymphocyte development, lymphoma diagnosis, and can be utilized as a target for leukemia immunotherapies (6,7). F4/80 (EMR1) is a heavily glycosylated G-protein-coupled receptor and is a well-established marker for mouse macrophages (8). CD11c (integrin αX, ITGAX) is a transmembrane glycoprotein highly expressed by dendritic cells, and has also been observed on activated NK cells, subsets of B and T cells, monocytes, granulocytes, and some B cell malignancies including hairy cell leukemia (9,10).

## Background References

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7. Scheuermann, R.H. and Racila, E. (1995) *Leuk Lymphoma* 18, 385-97.
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