

## In Vivo Star Anti-Mouse CD11c (integrin $\alpha$ X) Antibody

<b>Catalog Number:</b>	511801, 511802, 511803
<b>Size:</b>	1 mg, 5 mg, 25 mg
<b>Target Name:</b>	CD11c, integrin $\alpha$ X chain, CR4, ITGAX, p150
<b>Regulatory Status:</b>	RUO

### PRODUCT DETAILS

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<b>Clone:</b>	N418
<b>Application:</b>	ELISA, WB, Flow cytometry, IHC, ICC, animal model study
<b>Reactivity:</b>	Mouse
<b>Format:</b>	Liquid
<b>Product Description:</b>	In vivo Grade Recombinant Anti-mouse CD11c Monoclonal Antibody
<b>Isotype:</b>	Hamster IgG Kappa
<b>Antibody Type:</b>	Recombinant
<b>Purity:</b>	>95% by reducing SDS-PAGE
<b>Endotoxin:</b>	< 1 EU per 1 mg of the protein by the LAL method.
<b>Storage Conditions:</b>	4°C
<b>Grade:</b>	In vivo
<b>Recommended Usage:</b>	This product is suitable for in vivo animal use. Optimal amounts need to be determined empirically for each experiment.
<b>Hidden Synonyms:</b>	InVivoMab, InVivoPlus, GoInVivo, In Vivo Gold
<b>RRID:</b>	AB_3739392

### BACKGROUND INFORMATION

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CD11c, also known as integrin  $\alpha$ X (ITGAX), is a cell surface adhesion and signaling molecule best known as a hallmark marker of dendritic cells in humans and mice. It is also expressed on subsets of monocytes, macrophages, natural killer (NK) cells, and activated T cells. CD11c plays an important role in immune surveillance by regulating cell adhesion, migration, and interactions between antigen-presenting cells and other immune cells.

Structurally, CD11c is a type I transmembrane glycoprotein that heterodimerizes with the integrin  $\beta$ 2 subunit (CD18) to form the  $\alpha$ X $\beta$ 2 integrin, also known as complement receptor 4 (CR4). The extracellular domain of CD11c contains an inserted (I) domain, also referred to as an A domain, which is responsible for ligand binding and requires divalent cations such as  $Mg^{2+}$  or  $Mn^{2+}$  for activity. Like other integrins, CD11c undergoes conformational changes that regulate its affinity for ligands and enable bidirectional signaling. Its short cytoplasmic tail interacts with cytoskeletal and signaling adaptor proteins but lacks intrinsic enzymatic activity.

The primary ligands of CD11c include the complement fragment iC3b, fibrinogen, heparin, and several extracellular matrix proteins.

Through binding to iC3b, CD11c contributes to complement-mediated phagocytosis and clearance of opsonized pathogens and apoptotic cells. CD11c also facilitates cell adhesion and migration across endothelial barriers, supporting the trafficking of dendritic cells and monocytes to sites of infection or inflammation and to secondary lymphoid organs.

CD11c is implicated in a range of diseases involving immune dysregulation. In inflammatory and autoimmune disorders, CD11c<sup>+</sup> myeloid cells contribute to tissue inflammation and antigen presentation, sometimes exacerbating pathology. In cancer, CD11c<sup>+</sup> dendritic cells play dual roles: they can support antitumor immunity by presenting tumor antigens to T cells, but dysfunctional or tolerogenic CD11c<sup>+</sup> populations within the tumor microenvironment may promote immune evasion. Altered CD11c expression is also observed in chronic infections, where it can reflect changes in myeloid cell differentiation and function.

Therapeutically, CD11c is most commonly leveraged as a biomarker and targeting handle rather than a direct drug target. Antibodies against CD11c are widely used for the identification, isolation, and depletion of dendritic cells in research and preclinical models. In immunotherapy, CD11c<sup>+</sup> dendritic cells are central to vaccine strategies, where they are loaded with tumor or pathogen-derived antigens to elicit robust T cell responses. Additionally, targeted delivery of antigens or immunomodulatory agents to CD11c<sup>+</sup> cells is being explored to enhance vaccine efficacy and modulate immune responses in cancer and autoimmune disease.

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