Semaphorin-4D Antibody / SEMA4D / CD100 [clone 133-1C6] (V2451)

Catalog No.	Formulation	Size
V2451-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2451-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V2451SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgM, kappa
Clone Name	133-1C6
Purity	PEG precipitation
UniProt	Q92854
Localization	Cell surface
Applications	Flow cytometry: 0.5-1ug/10^6 cells Immunofluorescence: 0.5-1ug/ml
Limitations	This Semaphorin-4D antibody is available for research use only.



Description

Semaphorin-4D antibody (clone 133-1C6) detects Semaphorin-4D, a membrane-associated signaling glycoprotein involved in axonal guidance, immune cell activation, and tumor progression. The UniProt recommended name is Semaphorin-4D (SEMA4D). Also known as CD100, this class 4 semaphorin is a multifunctional protein that regulates cellular communication by interacting with receptors such as Plexin-B1 and CD72 to coordinate cytoskeletal remodeling, vascular growth, and immune modulation.

Functionally, Semaphorin-4D antibody identifies an ~863-amino-acid type I transmembrane protein containing an N-terminal sema domain, an Ig-like region, and a short cytoplasmic tail. In the nervous system, SEMA4D directs axon pathfinding and synaptic remodeling, while in the immune system it promotes T-cell activation and B-cell aggregation. Proteolytic cleavage of membrane-bound SEMA4D generates a soluble form that stimulates endothelial cell migration and angiogenesis, establishing a link between immune activation and vascular remodeling.

The SEMA4D gene is located on chromosome 9q22.2 and is expressed in neurons, endothelial cells, and activated lymphocytes. Its expression is dynamically regulated by developmental and inflammatory cues. Under physiological conditions, SEMA4D contributes to neurodevelopment and immune system coordination; under pathological conditions, overexpression promotes cancer cell invasion, neovascularization, and immune evasion.

Pathologically, dysregulation of SEMA4D has been observed in various cancers including breast, lung, and prostate carcinoma, where elevated expression correlates with increased angiogenesis and poor prognosis. In autoimmune and neurodegenerative conditions, altered SEMA4D signaling influences immune cell trafficking and neuronal repair mechanisms. Research using Semaphorin-4D antibody (clone 133-1C6) supports studies in tumor biology, immune regulation, and neural development.

Clone 133-1C6 is a mouse monoclonal antibody directed against an extracellular epitope of human Semaphorin-4D (CD100). It has been cited in multiple peer-reviewed publications for use in flow cytometry, immunoprecipitation, and immunofluorescence to characterize SEMA4D expression in immune and tumor cell populations. Studies employing this clone have demonstrated its reliability in detecting both membrane-bound and soluble forms of SEMA4D in activated lymphocytes and endothelial cells, contributing to the understanding of its signaling functions in the immune system and cancer microenvironment.

Semaphorin-4D antibody (clone 133-1C6) is validated for use in relevant research applications to examine receptor-mediated signaling, immune modulation, and axon guidance. NSJ Bioreagents provides this monoclonal antibody optimized for research in neuroimmunology, angiogenesis, and oncology.

Application Notes

Optimal dilution of the Semaphorin-4D antibody to be determined by the researcher.

Immunogen

PHA stimulated human peripheral blood lymphocytes were used as the immunogen for the Semaphorin-4D antibody.

Storage

Store the Semaphorin-4D antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

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