

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Semaphorin 4A in ELISA. Stains HEK293 cells transfected with mouse Semaphorin 4A by Flow Cytometry, but does not stain untransfected cells.
Source	Monoclonal Rat IgG ₁ Clone # 757129
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Semaphorin 4A Thr33-Trp638 Accession # Q62178
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10 ⁶ cells	HEK293 human embryonic kidney cell line transfected with mouse Semaphorin 4A and eGFP

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Semaphorin 4A (Sema4A, previously semB) is type I transmembrane protein that is a Class 4 transmembrane Semaphorin with activity in the immune and nervous systems. It is expressed by dendritic cells, monocytes, T cells, B cells, astrocytes and oligodendrocytes, plus visceral smooth muscle and bronchial epithelial cells. The 760 amino acid (aa) mouse Sema4A contains a 650 aa extracellular domain (ECD, aa 33-682) with Sema, PSI and C2-type immunoglobulin domains. It interacts with B and D1 Plexins and lymphocyte TIM-2, enhancing dendritic cell-mediated T cell priming and Th1 responses. Sema4A interaction with endothelial cell plexin-D1 downregulates the actions of VEGF. Mutations of Sema4A are associated with retinitis pigmentosa and cone rod dystrophy in humans. Mouse Sema4A ECD shares 87% and 94% aa sequence identity with human and rat Sema4A, respectively, and shares approximately 35% aa identity with other Sema4 family members. Using this antibody, Sema4A has been shown to interact with Neuropilin-1 in vitro and in vivo to potentiate Treg cell function and survival.

References:

1. Delgoffe, G.M. *et al* (2013) *Nature* **501**:252.

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