

Mouse Anti-Semaphorin 3A [Sema-3A]: MC0186

Intended Use: For Research Use Only

Description: Semaphorin 3A (Sema3A), originally identified as a potent growth cone collapsing factor in developing sensory neurons, is now recognized as a key player in immune, cardiovascular, bone metabolism and neurological systems. Semaphorin-3A is a secreted protein that is synthesized with a 22 amino acid signal peptide. It is a member of a family of proteins that are involved in cell migration and axonal growth cone guidance. Semaphorin-3A has an Ig-like C2-type (immunoglobulin-like) domain, a PSI domain, and a Sema domain of 500 amino acids. It strongly binds to neuropilin via its carboxy third sequence and competes with semaphorin dimerization. It is expressed at relatively high levels in brain and muscle and at moderate levels in lung, bursa, and heart. It is not found in the liver. Semaphorin-3A can function as either a chemorepulsive agent, inhibiting axonal outgrowth, or as a chemoattractive agent, stimulating the growth of apical dendrites. It induces the collapse and paralysis of neuronal growth cones and could serve as a ligand that guides specific growth cones by a motility-inhibiting mechanism. Increased expression of Semaphorin-3A is associated with schizophrenia and it is seen in a variety of human tumor cell lines. Additionally, aberrant release of this protein is associated with the progression of Alzheimer's disease. Semaphorin-3A is also reported to exert an osteoprotective effect by both suppressing osteoclastic bone resorption and increasing osteoblastic bone formation.

Specifications

Clone:	Sema-3A
Source:	Mouse
Isotype:	IgG1k
Reactivity:	Human, mouse, rat, rabbit, chicken, fish
Localization:	Secreted
Formulation:	Purified antibody in PBS pH7.4, containing BSA and $\leq 0.09\%$ sodium azide (NaN ₃)
Storage:	Store at 2°- 8°C
Applications:	IHC, IF, WB
Package:	

Description	Catalog No.	Size
Semaphorin 3A Concentrated	MC0186	1 ml

IHC Procedure*

Positive Control Tissue:	Kidney, colon cancer, and vascular smooth muscle of human skin
Concentrated Dilution:	50-200
Pretreatment:	Citrate pH6.0 or EDTA pH8.0, 15 minutes using Pressure Cooker, or 30-60 minutes using water bath at 95°-99°C
Incubation Time and Temp:	30-60 minutes @ RT
Detection:	Refer to the detection system manual

* Result should be confirmed by an established diagnostic procedure.



FFPE human cerebellum tissue stained with anti-Semaphorin 3A using DAB

References:

1. Decorin blocks scarring and cystic cavitation in acute and induces scar dissolution in chronic spinal cord wounds. Ahmed Z, et al. Neurobiol Dis 64:163-76, 2014.
2. Semaphorin 3A inactivation suppresses ischemia-reperfusion-induced inflammation and acute kidney injury. Ranganathan P, et al. Am J Physiol Renal Physiol 307:F183-94, 2014.
3. Semaphorin 3A is a new early diagnostic biomarker of experimental and pediatric acute kidney injury. Jayakumar C, et al. PLoS One 8:e58446, 2013.