

#5529 Store at -20°C

S100A10 (4E7E10) Mouse mAb


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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IHC-P, IF-IC, FC-FP	H Mk	Endogenous	11	Mouse IgG1	#P08207	20194

Product Usage Information

Application

Western Blotting
Immunohistochemistry (Paraffin)
Immunofluorescence (Immunocytochemistry)
Flow Cytometry (Fixed/Permeabilized)

Dilution

1:1000
1:100
1:400
1:200

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.

Specificity / Sensitivity

S100A10 (4E7E10) Mouse mAb recognizes endogenous levels of total S100A10 protein. This antibody is not known to react with other S100 family proteins.

Source / Purification

Monoclonal antibody is generated by immunizing animals with a recombinant fragment of human S100A10 protein expressed in *E. coli*. The antibody is affinity purified by Protein G chromatography.

Background

Despite their relatively small size (8-12 kDa) and uncomplicated architecture, S100 proteins regulate a variety of cellular processes, such as cell growth and motility, cell cycle progression, transcription, and differentiation. To date, 25 members have been identified, including S100A1-S100A18, trichohyalin, filaggrin, repetin, S100P, and S100Z, making it the largest group in the EF-hand, calcium-binding protein family. Interestingly, 14 S100 genes are clustered on human chromosome 1q21, a region of genomic instability. Research studies have demonstrated that significant correlation exists between aberrant S100 protein expression and cancer progression. S100 proteins primarily mediate immune responses in various tissue types but are also involved in neuronal development (1-4).

Each S100 monomer bears two EF-hand motifs and can bind up to two molecules of calcium (or other divalent cation in some instances). Structural evidence shows that S100 proteins form antiparallel homo- or heterodimers that coordinate binding partner proximity in a calcium-dependent (and sometimes calcium-independent) manner. Although structurally and functionally similar, individual members show restricted tissue distribution, are localized in specific cellular compartments, and display unique protein binding partners, which suggests that each plays a specific role in various signaling pathways. In addition to an intracellular role, some S100 proteins have been shown to act as receptors for extracellular ligands or are secreted and exhibit cytokine-like activities (1-4).

S100A10 (alternately known as p11 or calpactin 1 light chain) forms a constitutive heterotetramer with annexin A2 (ANXA2) and may act as a bridge between the plasma membrane and actin cytoskeleton via interactions with the plasma membrane (via ANXA2) and various protein partners such as the SNARE complex or actin (5-7). S100A10 has been hypothesized to play a critical role in neuronal signaling due to its interaction and regulation of neurotransmitter receptors and neuron-specific ion channels such as 5-HT1B, TRPV5, ASIC1, TASK1, and Nav1.8 (8-10). More recently, S100A10 has also been shown to modulate macrophage activation and invasion via its ability to bind and transmit receptor-like signals in response to plasminogen (11,12).

Background References

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5. Illien, F. et al. (2010) *Biochim Biophys Acta* 1798, 1790-6.
6. Umbrecht-Jenck, E. et al. (2010) *Traffic* 11, 958-71.
7. Jung, M.J. et al. (2010) *Exp Cell Res* 316, 1234-40.
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12. Swisher, J.F. et al. (2010) *Blood* 115, 549-58.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IHC-P:** Immunohistochemistry (Paraffin)

IF-IC: Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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