Background: Despite their relatively small size (8-12 kDa) and uncomplicated architecture, S100 proteins appear to regulate a variety of cellular processes such as cell growth and motility, cell cycle progression, transcription, and differentiation. To date, twenty-five members have been identified, including S100A1-S100A18, trichohylin, filaggrin, retelin, S100P, and S100Z, and embody the largest group in the EF-hand calcium-binding protein family. Interestingly, fourteen S100 genes are clustered on human chromosome 1q21 — a region of genomic instability. Significant correlation exists between aberrant S100 protein expression and cancer progression, suggesting that these proteins may be effective tumor markers in many types of neoplasia. S100 proteins have been primarily implicated in mediating immune responses in various tissue types but also appear to be 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 serve to coordinate the proximity of their binding partners in a calcium-dependent (and sometimes calcium-independent) manner. Although structurally and functionally similar, individual members show restricted tissue distribution and may act as receptors for extracellular ligands or are secreted and 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 heterotrimer 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).

**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 (4E7E10) Mouse mAb.

**Applications:** Western blotting 1:1000

**Recommended Antibody Dilutions:**
- Western blotting 1:1000
- Immunohistochemistry (Paraffin) 1:100†
- Unmasking buffer: Citrate
- Antibody diluent: SignalStain® Antibody Diluent #8112
- Unmasking buffer: Citrate
- Detection reagent: SignalStain® Boost IHC Detection Reagent
- Immunofluorescence (IF-IC) 1:400
- Flow Cytometry 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.

**Species Cross-reactivity**
- Species enclosed in parentheses are predicted to react based on 100% homology.

**Recommended Applications:**
- Western Blot
- IHC-P
- IF-IC
- F
- ELISA-Peptide

**IMPORTANT:** For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.
Confocal immunofluorescent analysis of HEK001 cells using S100A10 (4E7E10) Mouse mAb (green). Actin filament were labeled with DyLight™ 554 Phalloidin #13054 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

Flow cytometric analysis of Jurkat cells (blue) and HEK001 cells (green) using S100A10 (4E7E10) Mouse mAb.