

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Mouse                                                                           |
| <b>Specificity</b>                                                                                                                                                                                      | Detects recombinant mouse S100A4 protein in Direct ELISA                        |
| <b>Source</b>                                                                                                                                                                                           | Monoclonal Rat IgG <sub>2B</sub> Clone # 1092141                                |
| <b>Purification</b>                                                                                                                                                                                     | Protein A or G purified from hybridoma culture supernatant                      |
| <b>Immunogen</b>                                                                                                                                                                                        | <i>E. coli</i> -derived mouse S100A4<br>Ala2-Lys101<br>Accession # P07091       |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 594<br>Excitation Wavelength: 590 nm<br>Emission Wavelength: 617 nm |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                    |
| *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.

|                             |                                                                        |
|-----------------------------|------------------------------------------------------------------------|
| <b>Western Blot</b>         | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunohistochemistry</b> | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

S100A4 (also named Metastasin, Mts1 and Calvasculin) is an 11 kDa member of the S100 (soluble in 100% saturated ammonium sulfate) family of proteins (1-5). S100 family members belong to the EF-hand superfamily of Ca<sup>++</sup>-binding proteins. These participate in both calcium-dependent and calcium-independent protein-protein interactions. The hallmark of this superfamily is the EF-hand motif that consists of a Ca<sup>++</sup>-binding site flanked by two α-helices (helix E and helix F) that were originally identified in a right-handed model of carp muscle calcium-binding protein (6). Mouse S100A4 is 101 amino acids (aa) in length (1, 2). It contains two EF hand domains (aa 12-47 and aa 50-85). The first domain has a 14 aa cation-binding motif and binds Ca<sup>++</sup> with low affinity. The second Ca<sup>++</sup>-binding motif is 12 aa in length and binds Ca<sup>++</sup> with high affinity. S100A4 has no classical signal sequence but is secreted from cells (3, 7). Mouse S100A4 shares 93%, 96% and 89% aa identity with human, rat and canine S100A4, respectively. S100A4 exists as dimer (8, 9, 10). Extracellular S100A4 is reported to induce MMP production, activate MMPs, promote neurite outgrowth and stimulate cardiomyocyte proliferation (4, 10, 11, 12, 13). Within the cell, dimers are likely the functional unit. Here, they are constitutive homo- or heterodimers (with S100A1) that interact with Ca<sup>++</sup>, undergo a conformational change, and subsequently bind to cytoplasmic targets. Known targets include p53, Myosin heavy chain II, F-actin and Liprin β1 (4, 14). In general, it can be said that S100A4 blocks target phosphorylation and multimerization (4, 7, 14). S100A4 activity has been associated with cell transformation. It seems likely this is either coincidental, or a consequence, rather than a cause of transformation (3).

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