# Protein S100-A9 Polyclonal Antibody

Catalog No: #42316



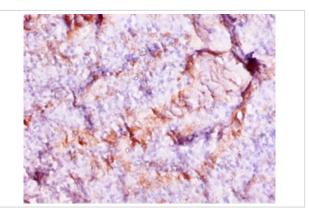
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| Description           | Support: tech@signalwayantibody.com   |
|-----------------------|---|
| Product Name          | Protein S100-A9 Polyclonal Antibody   |
| Host Species          | Rabbit  |
| Clonality             | Polyclonal  |
| Purification          | Caprylic Acid Ammonium Sulfate Precipitation purified   |
| Applications          | IHC   |
| Species Reactivity    | Hu  |
| Specificity           | The antibody detects endogenous level of total Protein S100-A9 polyclonal antibody.                         |
| Immunogen Type        | protein   |
| Immunogen Description | Recombinant human Protein S100-A9 protein   |
| Target Name           | Protein S100-A9   |
| Other Names           | Calgranulin-B Calprotectin L1H subunit Leukocyte L1 complex heavy chain Migration inhibitory factor-related |
|                       | protein 14 S100 calcium-binding protein A9 S100A9 CAGB, CFAG, MRP14   |
| Accession No.         | Swiss-Prot#: P06702   |
| Uniprot               | P06702  |
| GeneID                | 6280;   |
| Formulation           | Preservative: 0.03% Proclin 300 Constituents: 50% Glycerol, 0.01M PBS, PH 7.4                               |
| Storage               | Store at -20°C  |
|                       |   |

## **Application Details**

Immunohistochemistry: 1:20 - 1:200

### **Images**



Immunohistochemical analysis of paraffin-embedded human tonsil using #42316 at dilution of 1:10.

# Background

S100A9 is a calcium- and zinc-binding protein which plays a prominent role in the regulation of inflammatory processes and immune response. It can induce neutrophil chemotaxis, adhesion, can increase the bactericidal activity of neutrophils by promoting phagocytosis via activation of SYK, PI3K/AKT, and ERK1/2 and can induce degranulation of neutrophils by a MAPK-dependent mechanism. Predominantly found as calprotectin (S100A8/A9) which has a wide plethora of intra- and extracellular functions. The intracellular functions include: facilitating leukocyte arachidonic acid

trafficking and metabolism, modulation of the tubulin-dependent cytoskeleton during migration of phagocytes and activation of the neutrophilic NADPH-oxidase. Activates NADPH-oxidase by facilitating the enzyme complex assembly at the cell membrane, transfering arachidonic acid, an essential cofactor, to the enzyme complex and S100A8 contributes to the enzyme assembly by directly binding to NCF2/P67PHOX. The extracellular functions involve proinfammatory, antimicrobial, oxidant-scavenging and apoptosis-inducing activities. Its proinflammatory activity includes recruitment of leukocytes, promotion of cytokine and chemokine production, and regulation of leukocyte adhesion and migration. Acts as an alarmin or a danger associated molecular pattern (DAMP) molecule and stimulates innate immune cells via binding to pattern recognition receptors such as Toll-like receptor 4 (TLR4) and receptor for advanced glycation endproducts (AGER). Binding to TLR4 and AGER activates the MAP-kinase and NF-kappa-B signaling pathways resulting in the amplification of the proinflammatory cascade. Has antimicrobial activity towards bacteria and fungi and exerts its antimicrobial activity probably via chelation of Zn2+ which is essential for microbial growth. Can induce cell death via autophagy and apoptosis and this occurs through the cross-talk of mitochondria and lysosomes via reactive oxygen species (ROS) and the process involves BNIP3. Can regulate neutrophil number and apoptosis by an anti-apoptotic effect; regulates cell survival via ITGAM/ITGB and TLR4 and a signaling mechanism involving MEK-ERK. Its role as an oxidant scavenger has a protective role in preventing exaggerated tissue damage by scavenging oxidants. Can act as a potent amplifier of inflammation in autoimmunity as well as in cancer development and tumor spread.

#### References

[1]Two calcium-binding proteins in infiltrate macrophages of rheumatoid arthritis.Odink K., Cerletti N., Bruggen J., Clerc R.G., Tarcsay L., Zwaldo G., Gerhards G., Schlegel R., Sorg C.Nature 330:80-82(1987) [2]Cloning and expression of two human genes

Note: This product is for in vitro research use only