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# Mouse Monoclonal Antibody to SYK

Purified Mouse Monoclonal Antibody
Catalog # AO2431a

## Product Information

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|---|---|
| **Application** | WB, FC, ICC, E |
| **Primary Accession** | P43405 |
| **Reactivity** | Human |
| **Host** | Mouse |
| **Clonality** | Monoclonal |
| **Clone Names** | 2G11E6 |
| **Isotype** | Mouse IgG1 |
| **Calculated MW** | 72066 |
| **Description** | This gene encodes a member of the family of non-receptor type Tyr protein kinases. This protein is widely expressed in hematopoietic cells and is involved in coupling activated immunoreceptors to downstream signaling events that mediate diverse cellular responses, including proliferation, differentiation, and phagocytosis. It is thought to be a modulator of epithelial cell growth and a potential tumour suppressor in human breast carcinomas. Alternatively spliced transcript variants encoding different isoforms have been found for this gene. ; |
| **Immunogen** | Purified recombinant fragment of human SYK (AA: 217-356) expressed in E. Coli. |
| **Formulation** | Purified antibody in PBS with 0.05% sodium azide |
| **Application Note** | ELISA: 1/10000; WB: 1/500 - 1/2000; ICC: 1/50 - 1/250; FCM: 1/200 - 1/400 |

## Additional Information

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| **Gene ID** | 6850 |
| **Other Names** | p72-Syk |
| **Dilution** | WB~~1:1000 FC~~1:10~50 ICC~~N/A E~~N/A |
| **Storage** | Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | Mouse Monoclonal Antibody to SYK is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

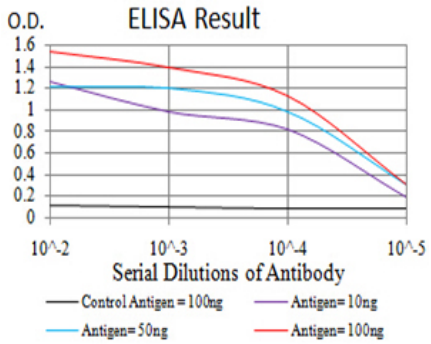
| | |
|---|---|
| **Name** | SYK |
| **Function** | Non-receptor tyrosine kinase which mediates signal transduction downstream of a variety of transmembrane receptors including classical immunoreceptors like the B-cell receptor (BCR). Regulates several biological processes including innate and adaptive immunity, cell adhesion, osteoclast maturation, platelet activation and vascular development (PubMed:12387735, PubMed:33782605). Assembles into signaling complexes with activated receptors at the plasma membrane via interaction between its SH2 domains and the receptor tyrosine- phosphorylated ITAM domains (PubMed:12387735, PubMed:9698567). The association with the receptor can also be indirect and mediated by adapter proteins containing ITAM or partial hemITAM domains (PubMed:20154219). The phosphorylation of the ITAM domains is generally mediated by SRC subfamily kinases upon engagement of the receptor. More rarely signal transduction via SYK could be ITAM-independent. Direct downstream effectors phosphorylated by SYK include DEPTOR, MYO1F, VAV1, PLCG1, PI-3-kinase, LCP2 and BLNK (PubMed:8657103, PubMed:12456653, PubMed:15388330, PubMed:18369315, PubMed:34634301, PubMed:39694035, PubMed:8657103). Initially identified as essential in B-cell receptor (BCR) signaling, it is necessary for the maturation of B-cells most probably at the pro-B to pre-B transition (PubMed:12456653). Activated upon BCR engagement, it phosphorylates and activates BLNK an adapter linking the activated BCR to downstream signaling adapters and effectors (PubMed:12456653, PubMed:18369315). It also phosphorylates and activates PLCG1 and the PKC signaling pathway (PubMed:8657103). It also phosphorylates BTK and regulates its activity in B-cell antigen receptor (BCR)-coupled signaling (By similarity). In addition to its function downstream of BCR also plays a role in T-cell receptor signaling. Also plays a crucial role in the innate immune response to fungal, bacterial and viral pathogens. It is for instance activated by the membrane lectin CLEC7A. Upon stimulation by fungal proteins, CLEC7A together with SYK activates immune cells inducing the production of ROS. Also activates the inflammasome and NF-kappa-B-mediated transcription of chemokines and cytokines in presence of pathogens. Regulates neutrophil degranulation and phagocytosis through activation of the MAPK signaling cascade (By similarity). Required for the stimulation of neutrophil phagocytosis by IL15 (PubMed:15123770). Also mediates the activation of dendritic cells by cell necrosis stimuli. Also involved in mast cells activation. Involved in interleukin-3/IL3- mediated signaling pathway in basophils (By similarity). Also functions downstream of receptors mediating cell adhesion (PubMed:12387735). Relays for instance, integrin-mediated neutrophils and macrophages activation and P-selectin receptor/SELPG-mediated recruitment of leukocytes to inflammatory loci. Also plays a role in non-immune processes. It is for instance involved in vascular development where it may regulate blood and lymphatic vascular separation. It is also required for osteoclast development and function. Functions in the activation of platelets by collagen, mediating PLCG2 phosphorylation and activation. May be coupled to the collagen receptor by the ITAM domain-containing FCER1G. Also activated by the membrane lectin CLEC1B that is required for activation of platelets by PDPN/podoplanin (PubMed:20154219). Involved in platelet adhesion being activated by ITGB3 engaged by fibrinogen. Together with CEACAM20, enhances production of the cytokine CXCL8/IL-8 via the NFKB pathway and may thus have a role in the intestinal immune response (By similarity). Acts as a positive regulator of cGAS-STING signaling by mediating phosphorylation of MYO1F, thereby promoting plasma membrane localization and activation of CGAS (PubMed:39694035). |
| **Cellular Location** | Cell membrane. Cytoplasm, cytosol |
| **Tissue Location** | Widely expressed in hematopoietic cells (at protein level) (PubMed:8163536). |

Expressed in neutrophils (at protein level) (PubMed:15123770). Within the B-cell compartment, expressed from pro- and pre-B cells to plasma cells (PubMed:8163536)

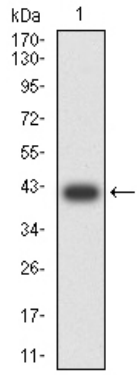
## References

1.Clin Cancer Res. 2015 Jun 1;21(11):2538-45. ; 2.PLoS One. 2014 Feb 11;9(2):e87610. ;

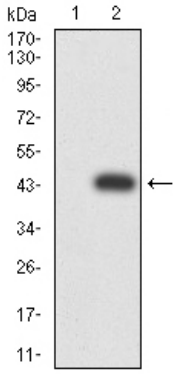
## Images




Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)

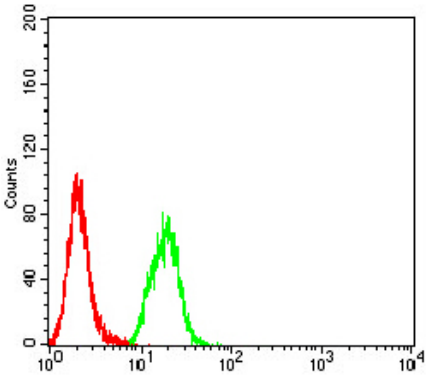


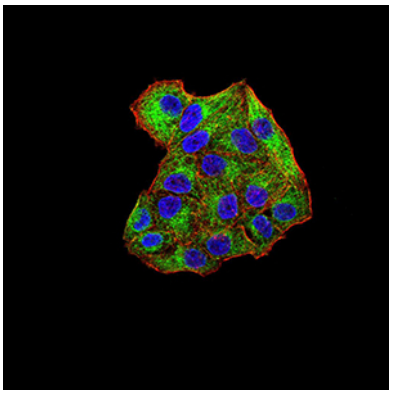

Western blot analysis using SYK mAb against human SYK (AA: 217-356) recombinant protein. (Expected MW is 41.4 kDa)




Western blot analysis using SYK mAb against HEK293 (1) and SYK (AA: 217-356)-hIgGFc transfected HEK293 (2) cell lysate.

Flow cytometric analysis of Hela cells using SYK mouse mAb (green) and negative control (red).



Immunofluorescence analysis of Hela cells using SYK mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin. Secondary antibody from Fisher

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.