

BACKGROUND

Src kinases consist of eight non-receptor tyrosine kinases (Src, Fyn, Yes, Lck, Lyn, Hck, Fgr and Blk) that interact with the intracellular domains of growth factor/cytokine receptors, GPCRs and integrins. Members of the Src kinase family have a very similar domain structure with a high degree of homology in the SH1 (catalytic), linker, SH2 (p-Tyr binding), SH3 (protein-protein interaction) and SH4 (membrane association) domains.¹ c-Src, Fyn and Yes are ubiquitously expressed, although high levels of c-Src are found in platelets, neural tissue and osteoclasts. For c-Src, autophosphorylation of Tyr416 and dephosphorylation of Tyr527 is required to switch the kinase from the inactive closed formation to the active open formation. c-Src can be inactivated by two kinases, c-Src kinase (CSK) and CSK homologous kinase (CHK), both of which phosphorylate Tyr527 of c-Src. The activity of the Src kinase family can also be regulated by phosphatases (e.g. SHP1), binding to adaptor proteins (e.g. Cbp) and proteasomal degradation. Src kinases are key upstream mediators of both the PI3-K and MAPK signaling pathways, and have been shown to have important roles in cell proliferation, migration and survival.²

Lyn, one of several Src-family tyrosine kinases in immune cells, has two isoforms p53Lyn and p56Lyn, resulting from alternative splicing of Lyn mRNA. It is preferentially expressed in B cells as well as other hematopoietic cells, but not in T cells. Lyn is noted for its ability to negatively regulate signaling pathways through phosphorylation of inhibitory receptors, enzymes, and adaptors. Somewhat paradoxically, it is also a key mediator in several pathways of B cell activation, such as CD19 and CD180. Whether Lyn functions to promote or inhibit immune cell activation depends on the stimulus and the developmental state, meaning that the consequences of Lyn activity are context dependent. The importance of regulating Lyn activity is exemplified by the pathological conditions that develop in both lyn^{-/-} and lyn gain-of-function mice (lyn^{up/up}), including lethal antibody-mediated autoimmune diseases and myeloid neoplasia.³

References:

1. Homsy, J. et al: Expert Opin. Ther. Targets 11:91-100, 2007
2. Brickell, P. M. et al: Crit. Rev. Oncol. 3:401-11, 1993
3. Xu, Y. et al: Immunity 22:9-18, 2005

TECHNICAL INFORMATION

Source:

Lyn antibody is a mouse monoclonal antibody raised against recombinant human Lyn fragments expressed in *E. coli*.

Specificity and Sensitivity:

This antibody detects endogenous Lyn proteins without cross-reactivity with other family members.

Storage Buffer: PBS and 30% glycerol

Storage:

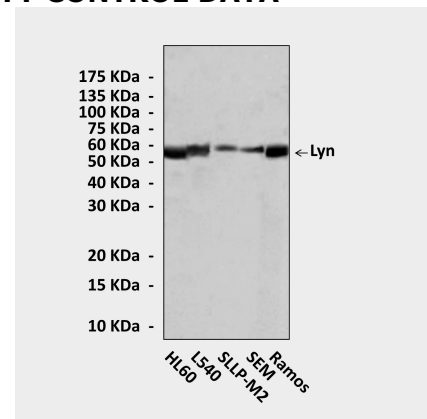
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	1:50
IHC	n/d
ICC	n/d
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Western Blot detection of Lyn proteins in various cell lysates using Lyn Antibody.

