STYK1/NOK Antibody

Cat. No. CP10231

Applications:	**WB, IHC**
Detected MW:	**48 kDa**
Species & Reactivity:	**Human**
Isotype:	**Mouse IgG1**

BACKGROUND

Human STYK1/NOK protein is a unique receptor tyrosine kinase (RTK). It almost completely lacks an ectodomain, and contains a putative single transmembrane (TM) domain and a conserved intracellular tyrosine kinase domain that shares homology with members of the platelet-derived growth factor/fibroblast growth factor receptor superfamily. It expresses intracellularly in the cytoplasm. and activates constitutively.[1] It was demonstrated that STYK1/NOK TM-mediated intermolecular contacting may be mainly responsible for the constitutive activation of STYK1/NOK and contribute to the autoinhibitory effect on RAS/MAPK signaling.[2] STYK1/NOK mRNAs were detected in limited human organs and expressed with the highest abundance in the prostate. A variety of tumor cells also expressed the STYK1/NOK mRNAs. It was shown that NIH3T3 and BaF3 cells could be strongly transformed by the expression of the STYK1/NOK gene as examined by colony formation experiment. In addition, BaF3 cells with the stable expression of STYK1/NOK induced rapid tumorigenesis in nude mice. Molecular mechanism studies indicated that STYK1/NOK could concomitantly activate both MAP kinase and PI-3 kinase pathways in stable BaF3 cells, and STAT1 and STAT3 pathway in NIH3T3 cells.[3] Additionally, it was shown that Tyr327 and Tyr356 of STYK1/NOR are well conserved in many RPTK subfamilies and are the potential tyrosine phosphorylation sites important for major intracellular signaling. Mutation of both tyrsones leads to significantly impaired Akt phosphorylation and completely abrogation of its tumorigenesis in nude mice. However, both mutations did not affect the kinase activity of NOK. Moreover, apoptotic analysis revealed that both mutations accelerated cell death by activating caspase-3-mediated pathways.[4]

STYK1/NOK is clearly related with tumor development. Knockdown of STYK1/NOK by siRNA resulted in drastic suppression of prostate cancer cell growth and, concordantly, enforced expression of STYK1/NOK promoted cell proliferation, whereas ectopic expression of a kinase-dead mutant STYK1/NOK did not. An in vitro kinase assay using recombinant STYK1/NOK demonstrated that STYK1/NOK could have some potential as a kinase, although its specific substrates are unknown. Thus, small molecules specifically inhibiting STYK1/NOK kinase could be a possible approach for the development of prostate cancer therapies.[5] Additionally it was also found that STYK1/NOK mRNA is widely expressed in the patients with acute leukemia. Moreover, it was shown that STYK1/NOK expression is associated with ovarian tumorigenesis. Furthermore, estrogen-mediated STYK1/NOK regulation was mediated through an unknown GPR30 signaling pathway.[6]

References:
1. Liu, L. et al: Cancer Res. 64:3491-9, 2004
2. Li, Y. et al: Mol. Cells 27:39-45, 2009
3. Li, Y. et al: Biochem. Biophy. Res. Comm. 356:444-9, 2004
4. Chen, Y. et al: Cancer Res. 65:10838-46, 2005
5. Chung, S. et al: Cancer Sci. 100::2109-14, 2009
6. Jackson, K.A. et al: J. Ovarian Res. 21:15, 2009

TECHNICAL INFORMATION

Source:
STYK1/NOK Antibody is a mouse monoclonal antibody raised against purified human STYK1/NOK fragments expressed in *E. coli*.

Specificity and Sensitivity:
This antibody detects endogenous STYK1/NOK 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	n/d
IHC	1:200
ICC	n/d
FACS	n/d

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

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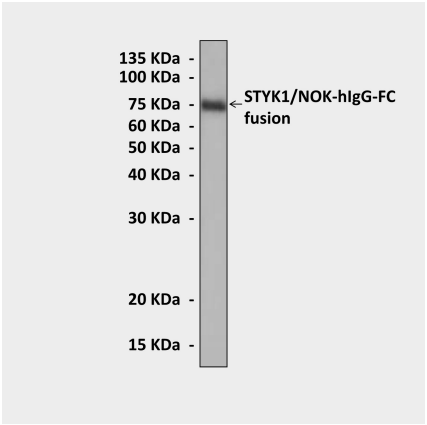
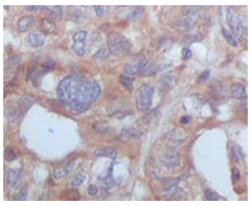
QUALITY CONTROL DATA





Top: Western Blot detection of STYK1/NOK-hIgG-FC fusion proteins expressed in CHO cells using STYK1/NOK Antibody. **Bottom:** This antibody stains paraffin-embedded human ovary cancer tissue in immunohistochemical analysis.