

HCK Antibody / Hematopoietic cell kinase (FY13358)

Catalog No.	Formulation	Size
FY13358	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P08631
Applications	Western Blot: 0.25-0.5ug/ml Flow Cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This HCK antibody is available for research use only.

Description

HCK antibody detects Hematopoietic cell kinase, a non-receptor tyrosine kinase encoded by the HCK gene on chromosome 20q11.21. HCK is a member of the Src family of kinases and is expressed predominantly in cells of the myeloid and B-lymphoid lineages, including macrophages, neutrophils, and monocytes. It plays essential roles in signal transduction pathways that regulate immune cell activation, adhesion, migration, and phagocytosis. HCK serves as a key mediator linking receptor engagement at the plasma membrane to downstream signaling cascades controlling inflammation and innate immunity.

Structurally, HCK contains an N-terminal myristoylation site for membrane attachment, followed by SH3 and SH2 domains involved in protein-protein interactions, and a C-terminal tyrosine kinase domain responsible for catalytic activity. It belongs to the Src kinase family, which includes LYN, FGR, and FYN, sharing conserved regulatory mechanisms. HCK exists in two isoforms (p59HCK and p61HCK) generated by alternative translation initiation, with p61HCK showing stronger membrane association and signaling potency.

Functionally, HCK transduces activation signals from immune receptors such as Fc gamma receptors, integrins, and toll-like receptors (TLRs). It phosphorylates downstream effectors including STAT3, PI3K, and MAPK pathway components,

driving cytokine production and cell motility. HCK also interacts with cytoskeletal proteins to coordinate phagocytic cup formation and immune synapse assembly. Known substrates and partners include cortactin, paxillin, and focal adhesion kinase, supporting its role in cytoskeletal rearrangement during immune responses.

HCK participates in signaling pathways regulating inflammatory gene expression and antimicrobial defense. In macrophages, it mediates responses to lipopolysaccharide (LPS) through activation of NF-kappaB and p38 MAPK pathways. In B cells, HCK modulates B-cell receptor (BCR) signaling and survival. During development, HCK expression increases as myeloid progenitors differentiate into mature macrophages and neutrophils, highlighting its role in immune cell maturation.

Dysregulation of HCK activity is associated with immune disorders and cancer. Overexpression or constitutive activation has been observed in chronic myeloid leukemia and other hematologic malignancies, contributing to enhanced proliferation and resistance to apoptosis. Conversely, HCK deficiency impairs phagocytic and inflammatory responses. Pathway associations include JAK-STAT signaling, MAPK signaling, and Fc receptor-mediated phagocytosis. Pharmacological inhibition of HCK has shown potential in treating inflammatory and myeloproliferative diseases.

Immunohistochemical staining using HCK antibody shows cytoplasmic and membrane localization in macrophages, neutrophils, and B cells. The HCK antibody from NSJ Bioreagents is a reliable reagent for research on immune signaling, hematopoietic differentiation, and tyrosine kinase regulation.

Application Notes

Optimal dilution of the HCK antibody should be determined by the researcher.

Immunogen

E.coli-derived human HCK recombinant protein (Position: R14-R501) was used as the immunogen for the HCK antibody.

Storage

After reconstitution, the HCK antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.