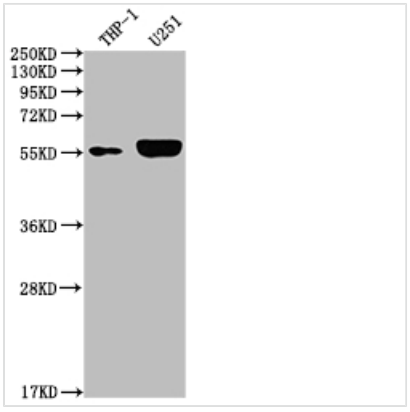
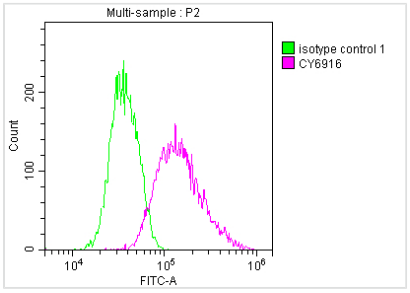
IRAK4 Antibody

Product Code	CSB-RA284992A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	Q9NWZ3
Immunogen	A synthesized peptide derived from human IRAK4
Species Reactivity	Human
Tested Applications	ELISA, WB, FC; Recommended dilution: WB:1:500-1:5000, FC:1:20-1:200
Relevance	Serine/threonine-protein kinase that plays a critical role in initiating innate immune response against foreign pathogens. Involved in Toll-like receptor (TLR) and IL-1R signaling pathways (PubMed:17878374). Is rapidly recruited by MYD88 to the receptor-signaling complex upon TLR activation to form the Myddosome together with IRAK2. Phosphorylates initially IRAK1, thus stimulating the kinase activity and intensive autophosphorylation of IRAK1. Phosphorylates E3 ubiquitin ligases Pellino proteins (PELI1, PELI2 and PELI3) to promote pellino-mediated polyubiquitination of IRAK1. Then, the ubiquitin-binding domain of IKBKG/NEMO binds to polyubiquitinated IRAK1 bringing together the IRAK1-MAP3K7/TAK1-TRAF6 complex and the NEMO-IKKA-IKKB complex. In turn, MAP3K7/TAK1 activates IKKs (CHUK/IKKA and IKBKB/IKKB) leading to NF-kappa-B nuclear translocation and activation. Alternatively, phosphorylates TIRAP to promote its ubiquitination and subsequent degradation. Phosphorylates NCF1 and regulates NADPH oxidase activation after LPS stimulation suggesting a similar mechanism during microbial infections.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Cardiovascular; Immunology; Signal transduction
Gene Names	IRAK4
Accession NO.	10H4
Image	



Western Blot
Positive WB detected in: THP-1 whole cell lysate, U251 whole cell lysate
All lanes: IRAK4 antibody at 1:2000
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 52, 38 kDa
Observed band size: 55 kDa



Overlay histogram showing Jurkat cells stained with CSB-RA284992A0HU (red line) at 1:50. The cells were fixed with 70% Ethylalcohol (18h) and then incubated in 10% normal goat serum to block non-specific protein-protein interactions followedby the antibody (1µg/1*106cells) for 1 h at 4°C.The secondary antibody used was FITC-conjugated goat anti-rabbit IgG (H+L) at 1/200 dilution for 30min at 4°C. Control antibody (green line) was Rabbit IgG (1µg/1*106cells) used under the same conditions. Acquisition of >10,000 events was performed.

Description

IRAK4 is a key regulator of innate immune signaling that regulates IL1R and TLR-mediated responses to viral and bacterial pathogens, as well as sterile inflammatory products. It has scaffolding and kinase activity. Given the importance of IRAK4 in TLR signaling, its mutation causes NF-kappa B and MAPKs activation to be hindered. Humans with IRAK4 activity deficit have an autosomal recessive primary immune deficiency (PID), which causes them to be susceptible to a limited number of Gram-negative bacterial infections but not viral or fungal infections.

The recombinant IRAK4 antibody expression is induced in mammalian cells transfected with a recombinant plasma vector. The recombinant plasma vector was constructed by inserting the gene coding for the antibody against IRAK4 into the plasma. The recombinant IRAK4 antibody was purified from the cell culture medium using Affinity-chromatography. It can react with samples containing IRAK4 protein from Human and has been validated for use in the ELISA, WB, FC.