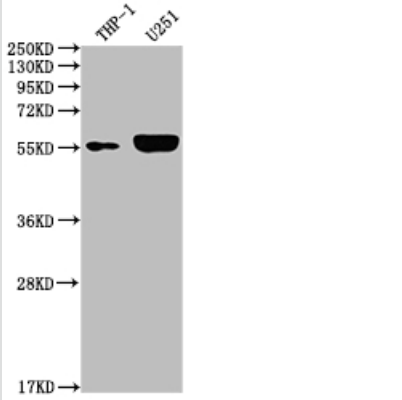
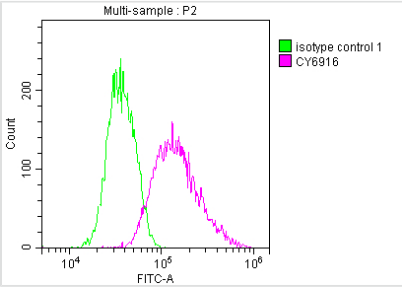
IRAK4 Recombinant Monoclonal Antibody

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
Clone 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*10^6 cells) for 1 h at 4?.The secondary antibody used was FITC-conjugated goat anti-rabbit IgG (H+L) at 1/200 dilution for 30min at 4?. Control antibody (green line) was Rabbit IgG (1μg/1*10^6 cells) used under the same conditions. Acquisition of >10,000 events was performed.

Description

To prepare the IRAK4 recombinant monoclonal antibody, the gene coding for the IRAK4 monoclonal antibody is obtained first. Animals were immunized with a synthesized peptide derived from human IRAK4, and B cells were isolated and fused with myeloma cells to create hybridomas. The hybridomas that produce the IRAK4 antibody were cultured to secret the IRAK4 monoclonal antibody, which was collected and sequenced. The IRAK4 monoclonal antibody gene was cloned into a vector. This recombinant vector was then transfected into cells for cultivation, and the resulting IRAK4 recombinant monoclonal antibody was isolated and purified using affinity chromatography from the cell culture supernatant. This antibody has been tested in ELISA, WB, and FC applications for the recognition of human IRAK4 protein.

The IRAK4 protein plays a crucial role in the immune response by transmitting signals from various Toll-like receptors (TLRs) and IL-1Rs. Upon activation of TLRs or IL-1Rs, IRAK4 interacts with other IRAK family members and downstream adaptors such as MyD88 to activate NF-κB and MAPK pathways, leading to the expression of pro-inflammatory cytokines and chemokines. In addition to its role in innate immunity, IRAK4 is also involved in adaptive immunity by regulating T cell activation and differentiation. Mutations in the IRAK4 gene have been linked to primary immunodeficiency disorders, leading to increased susceptibility to infections.