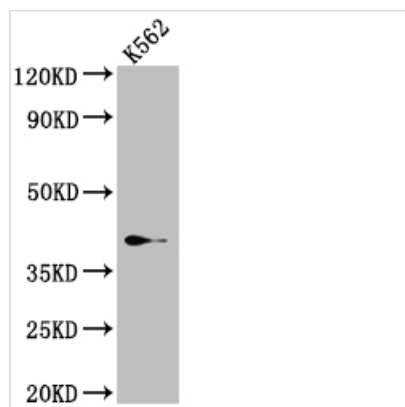




SAE1 Recombinant Monoclonal Antibody

Product Code	CSB-RA987582A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	Q9UBE0
Immunogen	A synthesized peptide derived from human SAE1
Species Reactivity	Human
Tested Applications	ELISA, WB, IF; Recommended dilution: WB:1:500-1:5000, IF:1:20-1:200
Relevance	The heterodimer acts as an E1 ligase for SUMO1, SUMO2, SUMO3, and probably SUMO4. It mediates ATP-dependent activation of SUMO proteins followed by formation of a thioester bond between a SUMO protein and a conserved active site cysteine residue on UBA2/SAE2.
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	Cell biology
Gene Names	SAE1
Clone No.	9D8

Image



Western Blot

Positive WB detected in: K562 whole cell lysate

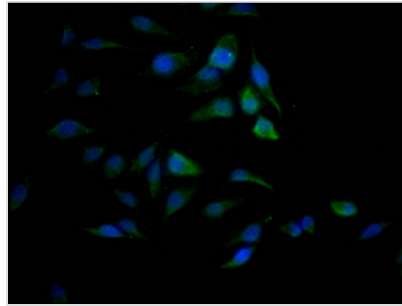
All lanes: SAE1 Antibody at 1:1000

Secondary

Goat polyclonal to rabbit IgG at 1/50000 dilution

Predicted band size: 39, 30, 34 kDa

Observed band size: 39 kDa



Immunofluorescence staining of HeLa Cells with CSB-RA987582A0HU at 1:50, counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeated by 0.2% TritonX-100, and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4?. Nuclear DNA was labeled in blue with DAPI. The secondary antibody was FITC-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L).

Description

The process of producing the SAE1 recombinant antibody involves four main steps. Firstly, the SAE1 monoclonal antibody gene is sequenced. Next, the gene is cloned into a plasmid vector. After that, the recombinant vector is introduced into a host cell line. Then, the SAE1 recombinant monoclonal antibody is purified from the cell culture supernatant using affinity chromatography. Finally, the purified antibody is tested and characterized. The SAE1 monoclonal antibody is developed from the SAE1 antibody-producing hybridomas and a synthesized peptide derived from human SAE1 is used as the immunogen during its production. This SAE1 recombinant monoclonal antibody is recommended for use in ELISA, WB, and IF applications to detect human SAE1 protein.

The SAE1 protein plays a crucial role in the process of protein sumoylation, which can alter protein function, stability, localization, and interactions with other proteins. The SAE1 protein, along with its binding partner SAE2, forms the heterodimeric SUMO-activating enzyme (SAE) complex, which is responsible for activating SUMO proteins by catalyzing the formation of a thioester bond between the C-terminus of SUMO and a cysteine residue on SAE1. This activates the SUMO protein, allowing it to be transferred to a target protein by SUMO-conjugating enzymes, resulting in the sumoylation of the target protein. It also participates in regulating various cellular processes, including DNA repair, transcriptional regulation, and protein localization. Dysregulation of sumoylation has been associated with several human diseases, including cancer, neurodegenerative disorders, and viral infections, highlighting the importance of SAE1 in maintaining cellular homeostasis.