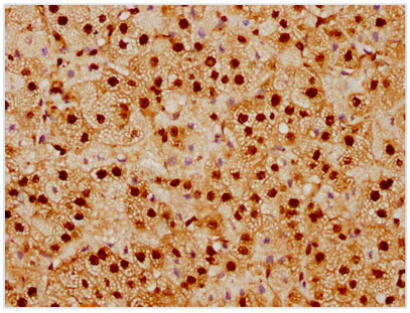
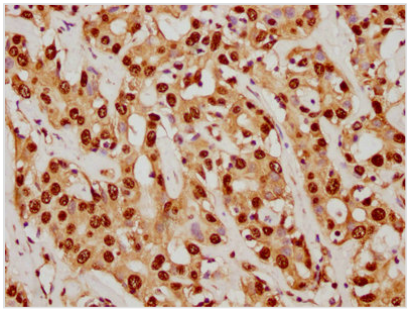
SUMO1 Antibody

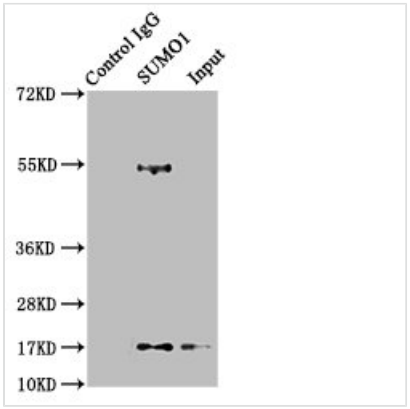
Product Code	CSB-RA022948A0HU
Abbreviation	Small ubiquitin-related modifier 1
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P63165
Immunogen	A synthesized peptide derived from human SUMO1
Species Reactivity	Human
Tested Applications	ELISA, IHC, FC, IP; Recommended dilution: IHC:1:50-1:200, IP:1:200-1:1000
Relevance	Ubiquitin-like protein that can be covalently attached to proteins as a monomer or a lysine-linked polymer. Covalent attachment via an isopeptide bond to its substrates requires prior activation by the E1 complex SAE1-SAE2 and linkage to the E2 enzyme UBE2I, and can be promoted by E3 ligases such as PIAS1-4, RANBP2 or CBX4. This post-translational modification on lysine residues of proteins plays a crucial role in a number of cellular processes such as nuclear transport, DNA replication and repair, mitosis and signal transduction. Involved for instance in targeting RANGAP1 to the nuclear pore complex protein RANBP2. Covalently attached to the voltage-gated potassium channel KCNB1; this modulates the gating characteristics of KCNB1 (PubMed:19223394). Polymeric SUMO1 chains are also susceptible to polyubiquitination which functions as a signal for proteasomal degradation of modified proteins. May also regulate a network of genes involved in palate development. Covalently attached to ZFHX3 (PubMed:24651376).
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
Alias	Small ubiquitin-related modifier 1, SUMO-1, GAP-modifying protein 1, GMP1, SMT3 homolog 3, Sentrin, Ubiquitin-homology domain protein PIC1, Ubiquitin-like protein SMT3C, Smt3C, Ubiquitin-like protein UBL1, SUMO1, SMT3C, SMT3H3, UBL1, OK/SW-cl.43
Immunogen Species	Homo sapiens (Human)
Research Area	Cell Biology
Gene Names	SUMO1
Accession NO.	5G3
Image	



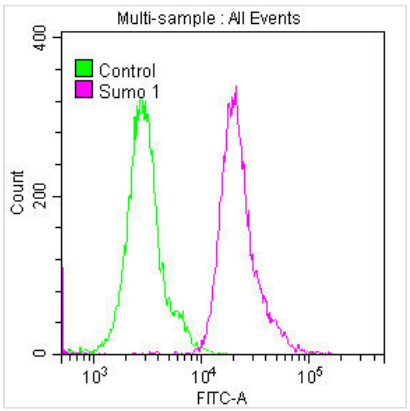
IHC image of CSB-RA022948A0HU diluted at 1:92.5 and staining in paraffin-embedded human adrenal gland tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.



IHC image of CSB-RA022948A0HU diluted at 1:92.5 and staining in paraffin-embedded human liver cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system.



Immunoprecipitating SUMO1 in 293T whole cell lysate
Lane 1: Rabbit control IgG instead of CSB-RA022948A0HU in 293T whole cell lysate. For western blotting, a HRP-conjugated Protein G antibody was used as the secondary antibody (1/2000)
Lane 2: CSB-RA022948A0HU (3µg) + 293T whole cell lysate (500µg)
Lane 3: 293T whole cell lysate (20µg)



Overlay histogram showing Hela cells stained with CSB-RA022948A0HU (red line) at 1:50. The cells were fixed with 70% Ethylalcohol (18h) and then permeabilized with 0.3% Triton X-100 for 2 min. The cells were then incubated in 1x PBS /10% normal goat serum to block non-specific protein-protein interactions followed by primary antibody for 1 h at 4°C. The secondary antibody used was FITC goat anti-rabbit IgG (H+L) at 1/200 dilution for 1 h at 4°C. Control antibody (green line) was used under the same conditions. Acquisition of >10,000 events was performed.

Description

The recombinant SUMO1 antibody production commenced with the obtaining of genes encoding antibody against SUMO1. Antibody genes were obtained by sequencing and screening DNA reversely transcribed from RNA that was

extracted from the B cells isolated from immunized animals. These genes were cloned into plasma vectors and subsequently transfected into a mammalian cell line for production. The product is the recombinant SUMO1 antibody. It underwent purification using affinity-chromatography from the cell culture medium. This recombinant SUMO1 antibody has been validated to detect the SUMO1 protein from Human in the ELISA, IHC, FC, IP.

SUMO1 is a small ubiquitin-related modifier protein covalently conjugated to many cellular and viral protein targets by an isopeptide bond via the C-terminus. It takes part in the modulation of some kinases such as cyclin-dependent kinase 6 and several transcription factors. SUMO1 is involved in various cellular activities, including nuclear transport, transcriptional modulation, apoptosis, and protein stability. Because SUMO1 aids to maintain calcium homeostasis in the mitochondria of heart cells, it is a key component in cardiac function. SUMO1-SERCA2A interaction plays a critical role in the regulation of calcium levels inside cardiac myocytes.