

Active Recombinant Human SAE1/UBA2, GST/His-tagged

Cat. No. SAE1-170H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human SAE1 (amino acid residues 1-346), fused with N-terminal GST, Human UBA2 (amino acid residues 1-640), fused with N-terminal His, was expressed in E.coli.
Species	Human
Source	E.coli
ProteinLength	1-346 a.a.
Description	SAE1/SAE2 is a SUMO1, 2 and 3 E1 activating enzyme and functions as a heterodimer. Cloning of the human SAE1 and SAE2 genes was first described by Desterro et al. (1999). SAE1 and SAE2 share sequence similarity to the N-terminus and C-terminus of ubiquitin E1 activating enzymes respectively (Desterro et al. 1999). SAE2 harbours the E1-like active cysteine site while SUMO1 transfer to the E2 conjugating enzyme UBE2I requires both of the SAE subunits (Desterro et al. 1999).
Form	50 mM HEPES pH 7.5, 150 mM sodium chloride, 2 mM dithiothreitol, 10% glycerol
Bio-activity	E1 Thioester SUMO Loading Assay: The activity of GST-SAE1/His-SAE2 was validated by loading SUMO1 onto the active cysteine of GST-SAE1/His-SAE2. Incubation of the GST-SAE1/His-SAE2 enzyme in the presence of SUMO1 and ATP at 30°C was compared at two time points, T0 and T10 minutes. Sensitivity of the SUMO / GST-SAE1/His-SAE2 thioester bond to the reducing agent DTT was confirmed.

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Molecular Mass	SAE1 = 64.8 kDa SAE2 = 73.4 kDa
Purity	>98% by SDS-PAGE
Storage	12 months at -70°C. Avoid multiple freeze/thaw cycles.
Concentration	0.5 mg/ml

GENE INFORMATION

Gene Name	SAE1 SUMO1 activating enzyme subunit 1 [Homo sapiens]
Official Symbol	SAE1
Synonyms	SAE1; SUMO1 activating enzyme subunit 1; SUMO-activating enzyme subunit 1; activator Of sumo 1; AOS1; FLJ3091; Sua1; activator of SUMO1; SUMO-1 activating enzyme subunit 1; sentrin/SUMO-activating protein AOS1; SUMO-1 activating enzyme E1 N subunit; ubiquitin-like 1-activating enzyme E1A; ubiquitin-like protein SUMO-1 activating enzyme; SUA1; UBLE1A; HSPC140;
Gene ID	10055
mRNA Refseq	NM_001145713
Protein Refseq	NP_001139185
MIM	613294
UniProt ID	Q9UBE0
Chromosome Location	19q13.32

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Pathway

Adaptive Immune System, organism-specific biosystem; Antigen processing: Ubiquitination and Proteasome degradation, organism-specific biosystem; Class I MHC mediated antigen processing & presentation, organism-specific biosystem; Immune System, organism-specific biosystem; Ubiquitin mediated proteolysis, organism-specific biosystem;

Function

ATP-dependent protein binding; contributes_to SUMO activating enzyme activity; enzyme activator activity; ligase activity; nucleotide binding; protein C-terminus binding; protein binding; protein heterodimerization activity; protein heterodimerization activity; ubiquitin activating enzyme activity;