Structural Maintenance of Chromosomes Protein 1a (SMC1A) Mouse Recombinant Protein

PRODUCT OVERVIEW

Product Name	Structural maintenance of chromosomes protein 1A (Smc1a), Recombinant Protein
Full Product Name	Recombinant Mouse Structural maintenance of chromosomes protein 1A (Smc1a) , partial
Product Gene Name	Smc1a recombinant protein
Product Synonym Gene Name	Smc1a
Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific)
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.
Molecular Weight	143,235 Da
Tag Information	This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information.
Sterility	Sterile filter available upon request.
Endotoxin	Low endotoxin available upon request.
3D Structure	ModBase 3D Structure for Q9CU62
Species	Mouse
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for Smc1a recombinant protein	Proper cohesion of sister chromatids is a prerequisite for the correct segregation of chromosomes during cell division. The cohesin multiprotein complex is required for sister chromatid cohesion. This complex is composed partly of two structural maintenance of chromosomes (SMC) proteins, SMC3 and either SMC1L2 or This protein. Most of the cohesin complexes dissociate from the chromosomes before mitosis, although those complexes at the kinetochore remain. Therefore, the encoded protein is thought to be an important part of functional kinetochores. In addition, this protein interacts with BRCA1 and is phosphorylated by ATM, indicating a potential role for this protein in DNA repair. This gene, which belongs to the SMC gene family, is located in an area of the X-chromosome that escapes X inactivation.
Other Notes	Small volumes of Smc1a recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for Smc1a purchase	MBS1376555 is a recombinant protein targeting Smc1a. Also known as Recombinant Mouse Structural maintenance of chromosomes protein 1A (Smc1a) , partial. Host: E Coli or Yeast or Baculovirus or Mammalian Cell.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for Smc1a. It may not necessarily be applicable to this product.

NCBI GI #	258613892
NCBI GeneID	24061
NCBI Accession #	NP_062684.2
UniProt Primary Accession #	Q9CU62

UniProt Secondary Accession #	Q3V480; Q9CUX9; Q9D959; Q9WTU1; A2AFQ5
UniProt Related Accession #	Q9CU62
GenBank Nucleotide #	NM_019710.2
NCBI Official Full Name	structural maintenance of chromosomes protein 1A
NCBI Official Synonym Full Names	structural maintenance of chromosomes 1A
NCBI Official Symbol	Smc1a
NCBI Official Synonym Symbols	Smc1; Smcb; Sb1.8; SMC-1A; Smc1l1; Smc1alpha; mKIAA0178; 5830426I24Rik
UniProt Protein Name	Structural maintenance of chromosomes protein 1A
UniProt Synonym Protein Names	Chromosome segregation protein SmcB; Sb1.8
Protein Family	Structural maintenance of chromosomes protein
UniProt Gene Name	Smc1a
UniProt Synonym Gene Names	Sb1.8; Smc1; Smc1l1; Smcb; SMC protein 1A; SMC-1-alpha; SMC-1A
NCBI Protein Information	structural maintenance of chromosomes protein 1A
UniProt Comments for Smc1a	Involved in chromosome cohesion during cell cycle and in DNA repair. Involved in DNA repair via its interaction with BRCA1 and its related phosphorylation by ATM, and works as a downstream effector in the ATM/NBS1 branch of S-phase checkpoint (). Central component of cohesin complex. The cohesin complex is required for the cohesion of sister chromatids after DNA replication. The cohesin complex apparently forms a large proteinaceous ring within which sister chromatids can be trapped. At anaphase, the complex is cleaved and dissociates from chromatin, allowing sister chromatids to segregate. The cohesin complex may also play a role in spindle pole assembly during mitosis. Involved in DNA repair via its interaction with BRCA1 and its related phosphorylation by ATM, or via its phosphorylation by ATR. Works as a downstream effector both in the ATM/NBS1 branch and in the ATR/MSH2 branch of S-phase checkpoint.
Research Articles on Smc1a	**1.** To decipher the functions of the two meiosis-specific kleisins, REC8 or RAD21L, together with the only meiosis-specific SMC protein SMC1b, we generated Smc1b-/-Rec8-/- and Smc1b-/-Rad21L-/- mouse mutants.
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