SMC1 (Phospho Ser957) Rabbit pAb

CatalogNo: YP0246 Orthogonal Validated

Key Features

Host Species
- Rabbit

Reactivity
- Human,Mouse

Applications
- WB,IHC,IF,ELISA

MW
- 143kD (Observed)

Isotype
- IgG

Storage

Storage*	-15°C to -25°C/1 year (Do not lower than -25°C)
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

Recommended Dilution Ratios

WB 1:500-1:2000
IHC 1:100-1:300
ELISA 1:10000
IF 1:50-200

Basic Information

Clonality	Polyclonal

Immunogen Information

Immunogen	The antiserum was produced against synthesized peptide derived from human SMC1 around the phosphorylation site of Ser957. AA range:931-980

Specificity	Phospho-SMC1 (S957) Polyclonal Antibody detects endogenous levels of SMC1 protein only when phosphorylated at S957.The name of modified sites may be influenced by many factors, such as species (the modified site was not originally found in human samples) and the change of protein sequence (the previous protein sequence is incomplete, and the protein sequence may be prolonged with the development of protein sequencing technology). When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports. The antibody binds to the following modification sequence (lowercase letters are modification sites):GSsQG

Target Information

Gene name	SMC1A
Protein Name	Structural maintenance of chromosomes protein 1A

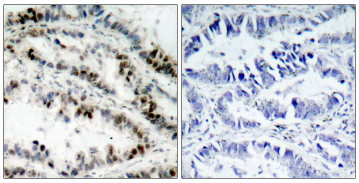
Organism	Gene ID	UniProt ID
Human	8243;	Q14683;
Mouse	24061;	Q9CU62;

Cellular Localization	Nucleus . Chromosome . Chromosome , centromere , kinetochore . Associates with chromatin. Before prophase it is scattered along chromosome arms. During prophase , most of cohesin complexes dissociate from chromatin probably because of phosphorylation by PLK , except at centromeres , where cohesin complexes remain. At anaphase , the RAD21 subunit of the cohesin complex is cleaved , leading to the dissociation of the complex from chromosomes , allowing chromosome separation. In germ cells , cohesin complex dissociates from chromatin at prophase I , and may be replaced by a meiosis-specific cohesin complex. The phosphorylated form on Ser-957 and Ser-966 associates with chromatin during G1/S/G2 phases but not during M phase , suggesting that phosphorylation does not regulate cohesin function. Integral component of the functional centromere-kinetochore complex at the kinetochore region during mitosis.
Tissue specificity	Aorta ,Bone marrow ,Brain ,Epithelium ,Fibroblast ,Testis ,Uterus endothe

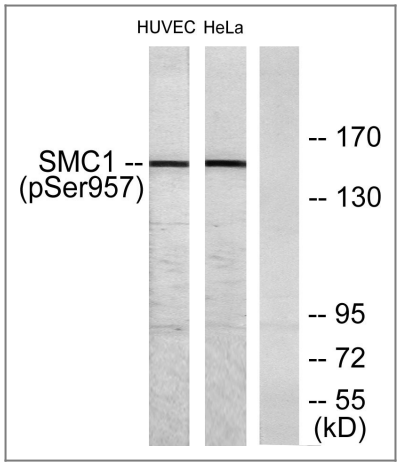
Function

Disease:Defects in SMC1A are the cause of Cornelia de Lange syndrome type 2 (CDLS2) [MIM:300590]; also known as Cornelia de Lange syndrome X-linked. CDLS is a clinically heterogeneous developmental disorder associated with malformations affecting multiple systems. CDLS is characterized by facial dysmorphisms , abnormal hands and feet , growth delay , cognitive retardation and various other malformations including gastroesophageal dysfunction and cardiac , ophthalmologic and genitourinary anomalies. ,Domain:The flexible hinge domain , which separates the large intramolecular coiled coil regions , allows the heterotypic interaction with the corresponding domain of SMC3 , forming a V-shaped heterodimer. The two heads of the heterodimer are then connected by different ends of the cleavable RAD21 protein , forming a ring structure. ,Function:Involved in chromosome cohesion during cell cycle and in DNA repair. 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. ,PTM:Phosphorylated by ATM upon ionizing radiation in a NBS1-dependent manner. Phosphorylated by ATR upon DNA methylation in a MSH2/MSH6-dependent manner. Phosphorylation of Ser-957 and Ser-966 activates it and is required for S-phase checkpoint activation. ,similarity:Belongs to the SMC family. SMC1 subfamily. ,subcellular location:Associates with chromatin. Before prophase it is scattered along chromosome arms. During prophase , most of cohesin complexes dissociate from chromatin probably because of phosphorylation by PLK , except at centromeres , where cohesin complexes remain. At anaphase , the RAD21 subunit of the cohesin complex is cleaved , leading to the dissociation of the complex from chromosomes , allowing chromosome separation. In germ cells , cohesin complex dissociates from chromatin at prophase I , and may be replaced by a meiosis-specific cohesin complex. The phosphorylated form on Ser-957 and Ser-966 associates with chromatin during G1/S/G2 phases but not during M phase , suggesting that phosphorylation does not regulate cohesin function. Integral component of the functional centromere-kinetochore complex at the kinetochore region during mitosis. ,subunit:Interacts with POLE. Interacts with SYCP2. Interacts with BRCA1. Found in a complex with CDCA5 , SMC3 and RAD21 , PDS5A/APRIN and PDS5B/SCC-112 (By similarity) . Forms a heterodimer with SMC3 in cohesin complexes. Cohesin complexes are composed of the SMC1 (SMC1A or SMC1B) and SMC3 heterodimer attached via their hinge domain , RAD21 which link them , and one STAG protein (STAG1 , STAG2 or STAG3) , which interacts with RAD21. In germ cell cohesin complexes , SMC1A is mutually exclusive with SMC1B. Interacts with BRCA1. Interacts with NDC80. ,

Validation Data



Immunohistochemistry analysis of paraffin-embedded human lung carcinoma, using SMC1 (Phospho-Ser957) Antibody. The picture on the right is blocked with the phospho peptide.



Western blot analysis of lysates from HUVEC cells treated with EGF 200ng/ml 5'/HeLa cells treated with EGF 200ng/ml 15', using SMC1 (Phospho-Ser957) Antibody. The lane on the right is blocked with the phospho peptide.

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Please scan the QR code to access additional product information:
SMC1 (Phospho Ser957) Rabbit pAb

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