

Product datasheet

Anti-SMC1A (phospho S966) antibody [EPFHCR37D]  
 ab133464

Recombinant RabMAb

1 Image

Overview

<b>Product name</b>	Anti-SMC1A (phospho S966) antibody [EPFHCR37D]
<b>Description</b>	Rabbit monoclonal [EPFHCR37D] to SMC1A (phospho S966)
<b>Host species</b>	Rabbit
<b>Specificity</b>	ab133464 detects SMC1A phosphorylated on serine 966.
<b>Tested applications</b>	<b>Suitable for:</b> IP, WB <b>Unsuitable for:</b> Flow Cyt, ICC or IHC-P
<b>Species reactivity</b>	<b>Reacts with:</b> Human
<b>Immunogen</b>	corresponding to Human SMC1A aa 950-1050 (internal sequence).
<b>Positive control</b>	HeLa cell lysates
<b>General notes</b>	Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Our RabMAb<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to [RabMAb<sup>®</sup> patents](#).

This product is a [recombinant rabbit monoclonal antibody](#).

Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at -20°C. Stable for 12 months at -20°C.
<b>Storage buffer</b>	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: 9% PBS, 40% Glycerol, 0.05% BSA, 50% Tissue culture supernatant
<b>Purity</b>	Tissue culture supernatant
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EPFHCR37D
<b>Isotype</b>	IgG

## Applications

Our [Abpromise guarantee](#) covers the use of **ab133464** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IP		1/10 - 1/100.
WB		1/1000 - 1/10000. Predicted molecular weight: 143 kDa.

**Application notes** Is unsuitable for Flow Cyt, ICC or IHC-P.

## Target

### 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.

### Involvement in 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.

### Sequence similarities

Belongs to the SMC family. SMC1 subfamily.

### 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.

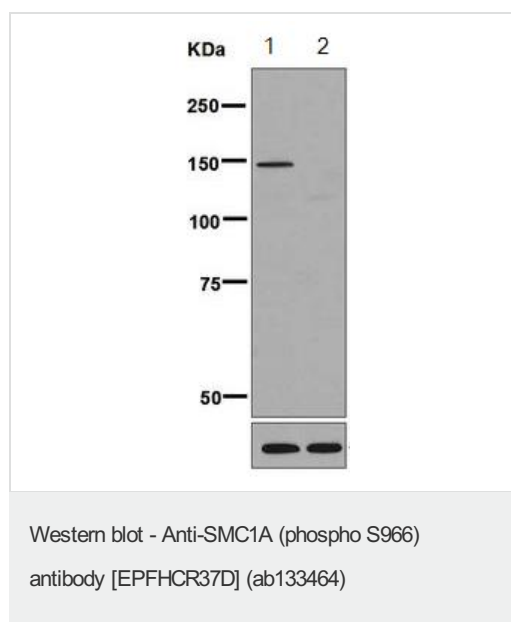
### Post-translational modifications

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.

### 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.

## Images



**All lanes :** Anti-SMC1A (phospho S966) antibody [EPFHCR37D] (ab133464) at 1/1000 dilution

**Lane 1 :** HeLa cell lysates

**Lane 2 :** HeLa cell lysates treated with Lambda Phosphatase

Lysates/proteins at 10 µg per lane.

### Secondary

**All lanes :** HRP labelled goat anti-rabbit at 1/2000 dilution

**Predicted band size:** 143 kDa

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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