

Product datasheet

Anti-SMC3 antibody [EPR7984] - BSA and Azide free  
ab225553

Recombinant RabMAb

1 References 2 Images

Overview

<b>Product name</b>	Anti-SMC3 antibody [EPR7984] - BSA and Azide free
<b>Description</b>	Rabbit monoclonal [EPR7984] to SMC3 - BSA and Azide free
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> Flow Cyt, ICC/IF, WB, IHC-P <b>Unsuitable for:</b> IP
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	A synthetic peptide corresponding to residues on the C-terminus of Human SMC3 (Q9UQE7).
<b>Positive control</b>	Human colon tissue. HeLa, A431, K562 and HepG2 cell lysates.
<b>General notes</b>	Ab225553 is the carrier-free version of <a href="#">ab128919</a> . This format is designed for use in antibody labeling, including fluorochromes, metal isotopes, oligonucleotides, enzymes.

Our [carrier-free formats](#) are supplied in a buffer free of BSA, sodium azide and glycerol for higher conjugation efficiency.

Use our [conjugation kits](#) for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

ab225553 is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm.

*Maxpar® is a trademark of Fluidigm Canada Inc.*

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free production

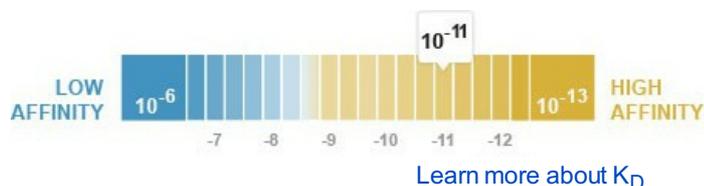
For more information [see here](#).

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

Properties

## Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
<b>Dissociation constant (K<sub>D</sub>)</b>	K <sub>D</sub> = 3.84 x 10 <sup>-11</sup> M



<b>Storage buffer</b>	pH: 7.20 Constituent: PBS
<b>Carrier free</b>	Yes
<b>Purity</b>	Protein A purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EPR7984
<b>Isotype</b>	IgG

## Applications

Our [Abpromise guarantee](#) covers the use of **ab225553** 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
Flow Cyt		Use at an assay dependent concentration. <a href="#">ab199376</a> - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
ICC/IF		Use at an assay dependent concentration.
WB		Use at an assay dependent concentration. Predicted molecular weight: 141 kDa. Can be blocked with <a href="#">SMC3 peptide (ab209493)</a> .
IHC-P		Use at an assay dependent concentration. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

**Application notes** Is unsuitable for IP.

## Target

**Function** Central component of cohesin, a complex required for chromosome cohesion during the cell cycle. The cohesin complex may form 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. Cohesion is coupled to DNA replication and is involved in DNA repair. The cohesin complex plays also an important role in spindle pole assembly during mitosis and in chromosomes movement.

## Involvement in disease

Defects in SMC3 are the cause of Cornelia de Lange syndrome type 3 (CDLS3) [MIM:610759]. CDLS is a dominantly inherited multisystem developmental disorder characterized by growth and cognitive retardation, abnormalities of the upper limbs, gastroesophageal dysfunction, cardiac, ophthalmologic and genitourinary anomalies, hirsutism, and characteristic facial features. CDLS3 is a mild form with absence of major structural anomalies typically associated with CDLS. The phenotype in some instances approaches that of apparently non-syndromic mental retardation.

## Sequence similarities

Belongs to the SMC family. SMC3 subfamily.

## Domain

The flexible hinge domain, which separates the large intramolecular coiled coil regions, allows the heterotypic interaction with the corresponding domain of SMC1A or SMC1B, 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

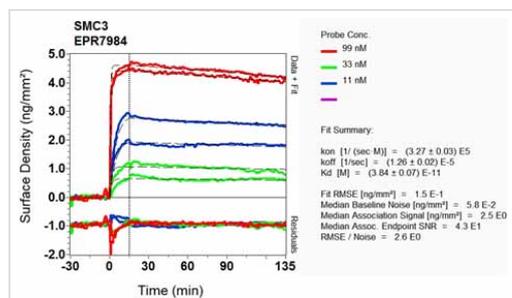
Phosphorylated upon DNA damage, probably by ATM or ATR.

Acetylation at Lys-105 and Lys-106 by ESCO1 is important for genome stability and S phase sister chromatid cohesion. Regulated by DSCC1, it is required for processive DNA synthesis, coupling sister chromatid cohesion establishment during S phase to DNA replication.

## Cellular localization

Nucleus. Chromosome. Chromosome > centromere. 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.

## Images



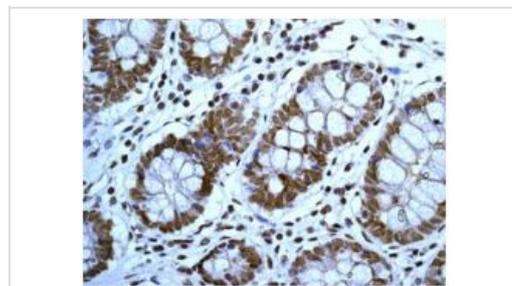
Other - Anti-SMC3 antibody [EPR7984] - BSA and Azide free (ab225553)

Equilibrium dissociation constant ( $K_D$ )

Learn more about  $K_D$

[Click here to learn more about  \$K\_D\$](#)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab128919](#)).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SMC3 antibody [EPR7984] - BSA and Azide free (ab225553)

This IHC data was generated using the same anti-SMC3 antibody clone [EPR7984] in a different buffer formulation (cat# [ab128919](#)).

[ab128919](#) at 1/100 dilution staining SMC3 in paraffin-embedded Human colon tissue by immunohistochemistry.

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

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

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