abcam

Product datasheet

Anti-SMC3 antibody [KT75] ab106760

Overview

Product name	Anti-SMC3 antibody [KT75]
Description	Rat monoclonal [KT75] to SMC3
Tested applications	**Suitable for:** WB
Species reactivity	**Reacts with:** Mouse
Immunogen	Recombinant fusion protein, Mouse SMC3 and a proprietary protein.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.1% Sodium Azide Constituents: PBS
Purity	Protein G purified
Clonality	Monoclonal
Clone number	KT75
Isotype	IgG2a

Applications

Our Abpromise guarantee covers the use of **ab106760** 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
WB		Use a concentration of 1 µg/ml. Predicted molecular weight: 142 kDa.

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. CDSL3 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.

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