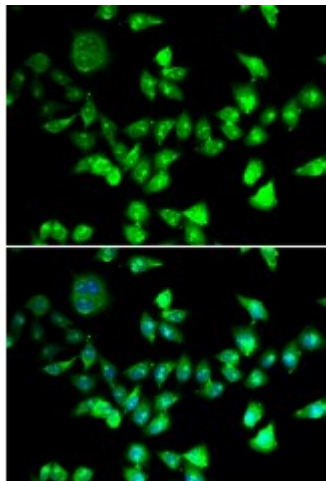


## Anti-SMC1A Antibody



### Description

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 SMC1B or the protein encoded by this gene. 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. Mutations in this gene result in Cornelia de Lange syndrome. Alternative splicing results in multiple transcript variants encoding different isoforms.

|                       |                                                                                                                   |
|-----------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Model</b>          | STJ116171                                                                                                         |
| <b>Host</b>           | Rabbit                                                                                                            |
| <b>Reactivity</b>     | Human                                                                                                             |
| <b>Applications</b>   | IF                                                                                                                |
| <b>Immunogen</b>      | Recombinant fusion protein containing a sequence corresponding to amino acids 1-130 of human SMC1A (NP_006297.2). |
| <b>Gene ID</b>        | <a href="#">8243</a>                                                                                              |
| <b>Gene Symbol</b>    | <a href="#">SMC1A</a>                                                                                             |
| <b>Dilution range</b> | IF 1:50 - 1:200                                                                                                   |
| <b>Purification</b>   | Affinity purification                                                                                             |

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Note</b>                             | For Research Use Only (RUO).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Protein Name</b>                     | Structural maintenance of chromosomes protein 1A SMC protein 1A SMC-1-alpha SMC-1A Sb1.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Molecular Weight</b>                 | 143.233 kDa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Clonality</b>                        | Polyclonal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Conjugation</b>                      | Unconjugated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Isotype</b>                          | IgG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Formulation</b>                      | PBS with 0.02% sodium azide, 50% glycerol, pH7.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Storage Instruction</b>              | Store at -20C. Avoid freeze / thaw cycles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Database Links</b>                   | <a href="#">HGNC:11111</a> <a href="#">OMIM:300040</a> <a href="#">Reactome:R-HSA-1221632</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Alternative Names</b>                | Structural maintenance of chromosomes protein 1A SMC protein 1A SMC-1-alpha SMC-1A Sb1.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Function</b>                         | 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, |
| <b>Cellular Localization</b>            | Nucleus,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Post-translational Modifications</b> | 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,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |