# Anti-SMC2 Antibody [PSH0-62]

## HA721450

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|---|---|
| **Product Type:** | Recombinant Rabbit monoclonal IgG, primary antibodies |
| **Species reactivity:** | Human, Monkey |
| **Applications:** | WB, IHC-P, IF-Cell |
| **Molecular Wt:** | Predicted band size: 136 kDa |
| **Clone number:** | PSH0-62 |

**Description:** Structural maintenance of chromosomes protein 2 (SMC-2), also known as chromosome-associated protein E (CAP-E), is a protein that in humans is encoded by the SMC2 gene. SMC2 is part of the SMC protein family and is a core subunit of condensin I and II, large protein complexes involved in chromosome condensation, overall organization. Several studies have demonstrated the necessity of SMC2 for cell division and proliferation. SMC2 works in the condensin complex as transcriptional regulation by compacting replicated DNA prior to mitotic division via supercoiling of the DNA. SMC2 also functions in resolving Sister chromatids prior to Anaphase.

**Immunogen:** Recombinant protein within human SMC2 aa 451-750 / 1,197.

**Positive control:** HeLa cell lysate, HEK-293 cell lysate, HT-29 cell lysate, HepG2 cell lysate, A431 cell lysate, SH-SY5Y cell lysate, Jurkat cell lysate, Raji cell lysate, COS-1 cell lysate, human colon carcinoma tissue, human colon tissue, human colon lymph nodes tissue, HeLa, HT-29.

**Subcellular location:** Nucleus, Cytoplasm, Chromosome.

**Database links:** SwissProt: O95347 Human

**Recommended Dilutions:**

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| **WB** | 1:1,000 |
| **IHC-P** | 1:1,000 |
| **IF-Cell** | 1:100 |

**Storage Buffer:** PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

**Storage Instruction:** Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

**Purity:** Protein A affinity purified.

## Images

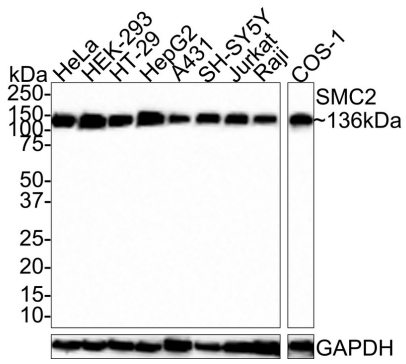


**Fig1:** Western blot analysis of SMC2 on different lysates with Rabbit anti-SMC2 antibody (HA721450) at 1/1,000 dilution.

Lane 1: HeLa cell lysate (30 µg/Lane)
Lane 2: HEK-293 cell lysate (30 µg/Lane)
Lane 3: HT-29 cell lysate (30 µg/Lane)
Lane 4: HepG2 cell lysate (30 µg/Lane)
Lane 5: A431 cell lysate (30 µg/Lane)
Lane 6: SH-SY5Y cell lysate (30 µg/Lane)
Lane 7: Jurkat cell lysate (30 µg/Lane)
Lane 8: Raji cell lysate (30 µg/Lane)
Lane 9: COS-1 cell lysate (24 µg/Lane)

Predicted band size: 136 kDa
Observed band size: 136 kDa

Exposure time: 30 seconds;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA721450) at 1/1,000 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:100,000 dilution was used for 1 hour at room temperature.

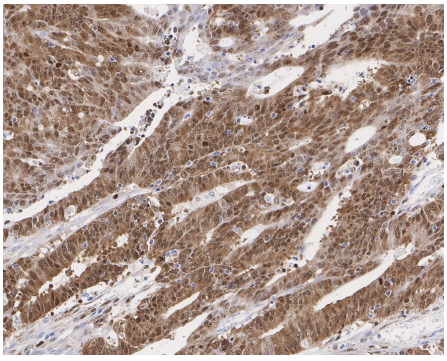

**Fig2:** Immunohistochemical analysis of paraffin-embedded human colon carcinoma tissue with Rabbit anti-SMC2 antibody (HA721450) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with dd$H_2O$ and PBS, and then probed with the primary antibody (HA721450) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

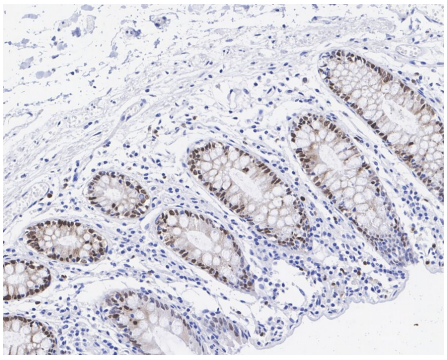

**Fig3:** Immunohistochemical analysis of paraffin-embedded human colon tissue with Rabbit anti-SMC2 antibody (HA721450) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with $ddH_2O$ and PBS, and then probed with the primary antibody (HA721450) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

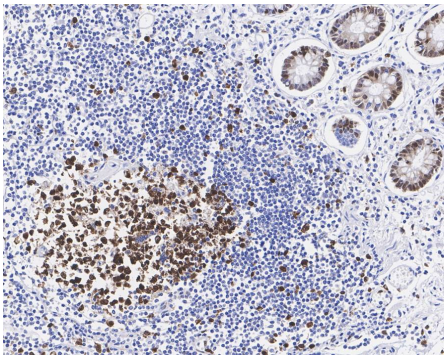

**Fig4:** Immunohistochemical analysis of paraffin-embedded human colon lymph nodes tissue with Rabbit anti-SMC2 antibody (HA721450) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with $ddH_2O$ and PBS, and then probed with the primary antibody (HA721450) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

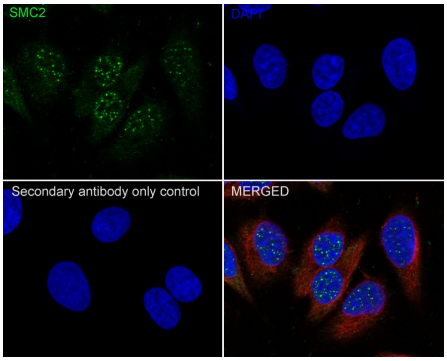


**Fig5:** Immunocytochemistry analysis of HeLa cells labeling SMC2 with Rabbit anti-SMC2 antibody (HA721450) at 1/100 dilution.

Cells were fixed in 100% methanol for 10 minutes, permeabilized with 0.1% Triton X-100 in PBS for 15 minutes, and then blocked with 1% BSA for 30 minutes at room temperature. Cells were then incubated with Rabbit anti-SMC2 antibody (HA721450) at 1/100 dilution in 2% negative goat serum overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. Nuclear DNA was labelled in blue with DAPI.

Beta tubulin (M1305-2, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Mouse IgG H&L (iFluor™ 594, HA1126) was used as the secondary antibody at 1/1,000 dilution.

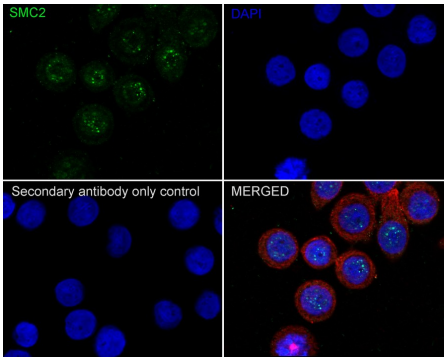


**Fig6:** Immunocytochemistry analysis of HT-29 cells labeling SMC2 with Rabbit anti-SMC2 antibody (HA721450) at 1/100 dilution.

Cells were fixed in 100% methanol for 10 minutes, permeabilized with 0.1% Triton X-100 in PBS for 15 minutes, and then blocked with 1% BSA for 30 minutes at room temperature. Cells were then incubated with Rabbit anti-SMC2 antibody (HA721450) at 1/100 dilution in 2% negative goat serum overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. Nuclear DNA was labelled in blue with DAPI.

Beta tubulin (M1305-2, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Mouse IgG H&L (iFluor™ 594, HA1126) was used as the secondary antibody at 1/1,000 dilution.



## Background References

1. Li X et al. Functions of SMC2 in the Development of Zebrafish Liver. Biomedicines. 2021 Sep
2. Montero S et al. Intracellular Delivery of Anti-SMC2 Antibodies against Cancer Stem Cells. Pharmaceutics. 2020 Feb