Supplementary Table 1. Nucleotide primers used for amplifying the *SMC1A* gene (NCBI Reference Sequence: NG_006988.2)

<table>
<thead>
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<th>Primer</th>
<th>Forward primer</th>
<th>Reverse primer</th>
<th>Size(bp)</th>
<th>Exon</th>
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**Supplementary Figure 1.** Early colorectal adenomas. Standard Hematoxylin and Eosin (H&E) staining was performed on the microtomic section for histopathological examination. Histological diagnoses were formulated according to the 2010 World Health Organization (WHO) Classification (4th Edition). Two samples of tubular adenomas with low-grade dysplasia are shown.
Supplementary Figure 2. Mutational screening in colorectal early adenomas allowed us the identification of eleven SMC1A mutations. (A) nucleotide change c.40T>C identified in patient 1. (B) nucleotide change c.101delA identified in patient 2. (C) nucleotide change c.620A>G identified in patient 3. (D) nucleotide change c.734A>G identified in patient 4. (E) nucleotide change c.1360A>C identified in patient 5. (F) nucleotide change c.1957T>C identified in patient 6. (G) nucleotide change c.2210T>C identified in patient 7. (H) nucleotide change c.2479C>T identified in patient 8. (I) nucleotide change c.2262A>G identified in patient 9. (J) nucleotide change c.3106G>A identified in patient 10. (K) nucleotide change c.3421C>T identified in patient 11.
change c.734 T>C identified in patient 4. (E) nucleotide change c.1360 A>C identified in patient 5. (F) nucleotide change c.1957 T>C identified in patient 6. (G) nucleotide change c.2210 T>C identified in patient 7. (H) nucleotide change c.2479 C>T identified in patient 8. (I) nucleotide change c.2662 A>G identified in patient 9. (J) nucleotide change c.3106 G>A identified in patient 10. (K) nucleotide change c.3421 C>T identified in patient 11.
Supplementary Figure 3. The overexpression of mutated SMC1A proteins does not impair their incorporation into cohesin complex since they co-IP with SMC3 in all samples (1 = wt SMC1A; 2 = 2027 SMC1A; 3 = 2479 SMC1A; 4 = 3421 SMC1A, 5 = Positive control, - = Negative control).
**Supplementary Figure 4.** Abnormal figures following SMC1A silencing. (A) Micronucleus. (B) Anucleated cell.