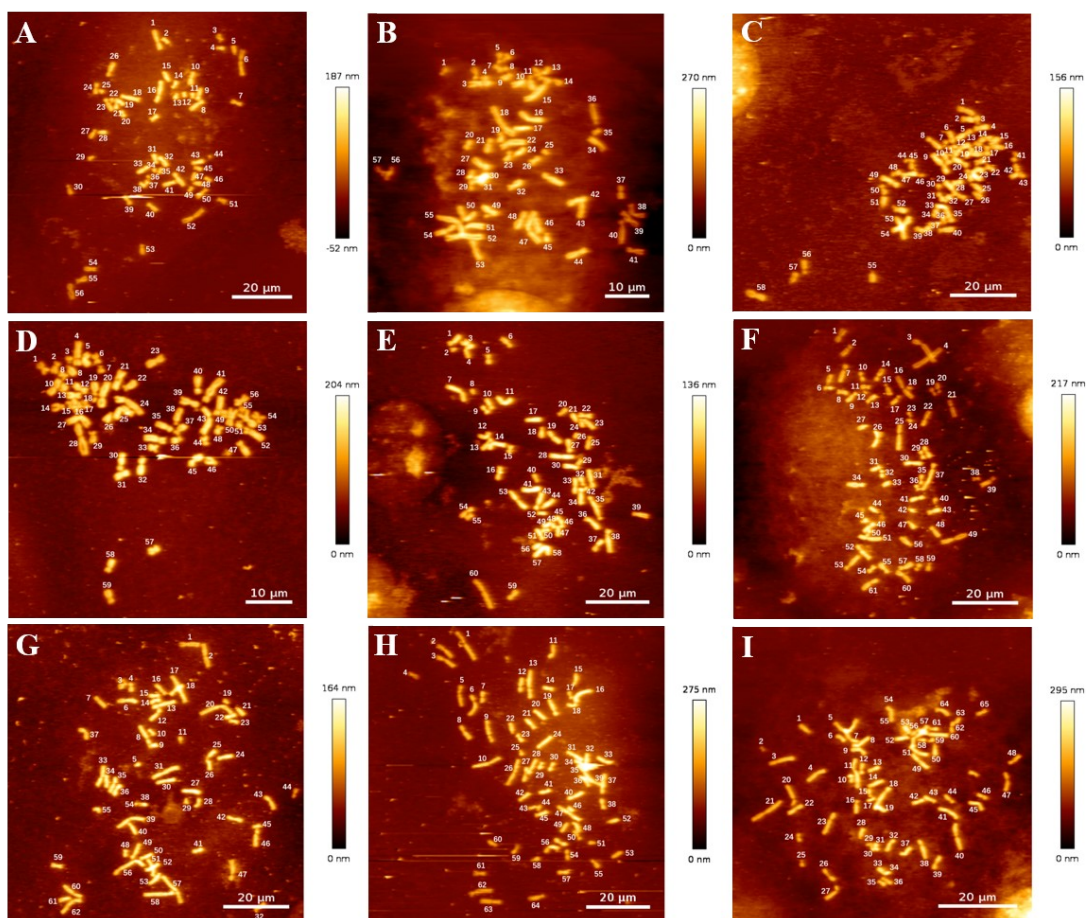
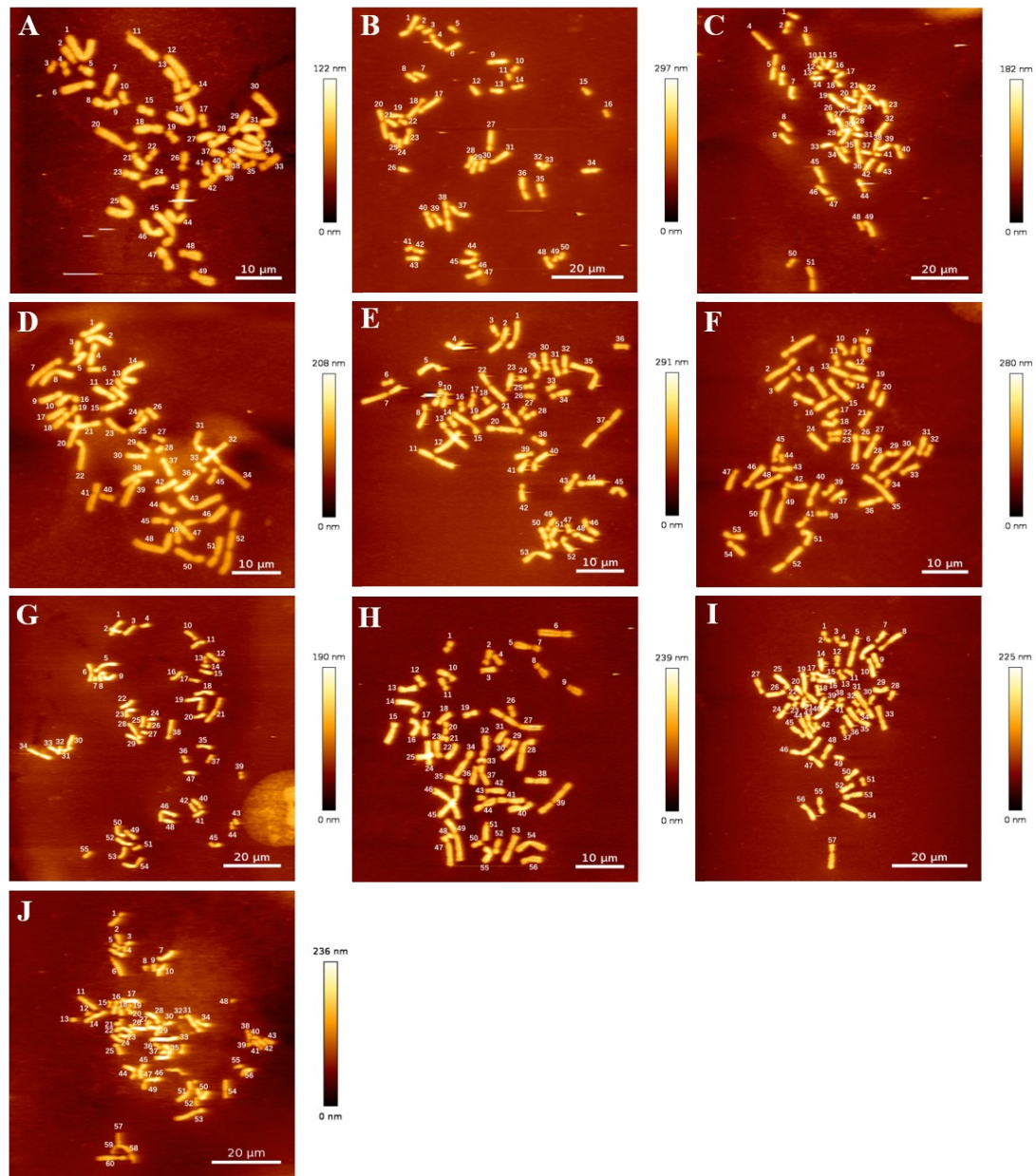


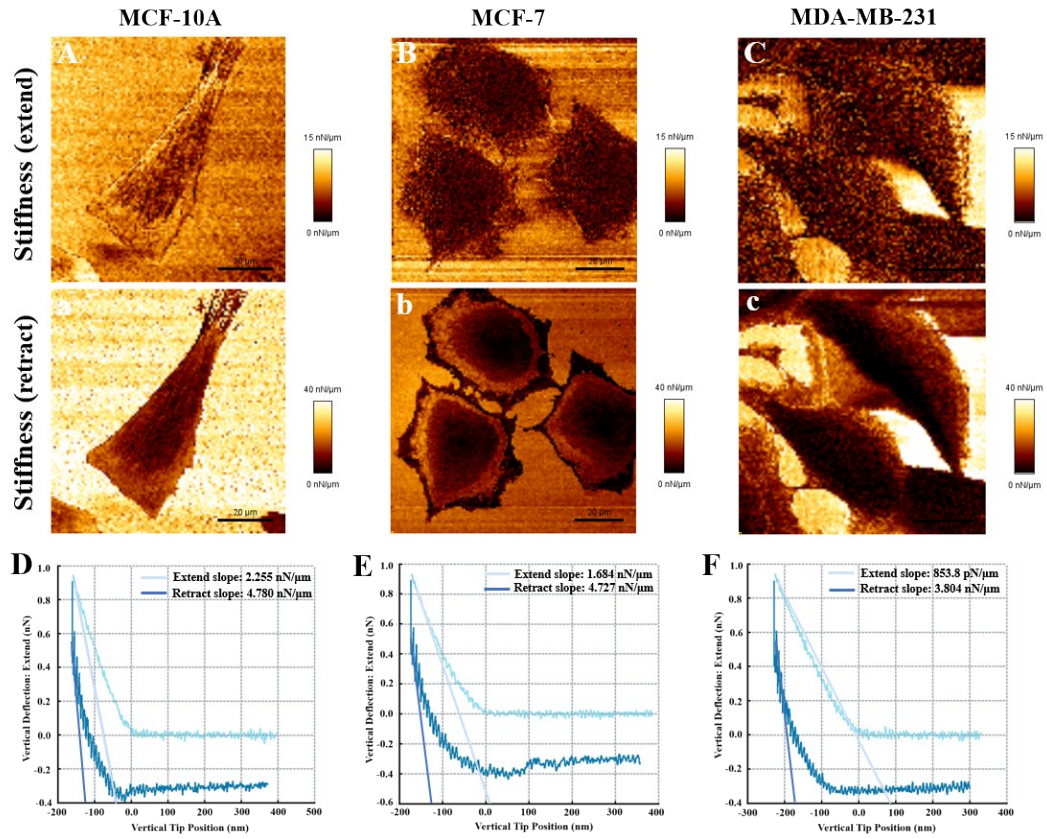
## Supporting Information



**Figure S1.** AFM-based detection of the chromosome numbers in MCF-7 cells, identified in metaphase of mitosis. (A-I) The representative AFM images of chromosomes of MCF-7 cells. The numbers of chromosomes were 56, 57, 58, 59, 60, 61, 62, 64 and 65, respectively.



**Figure S2.** AFM-based detection of the chromosome numbers in MDA-MB-231 cells, identified in metaphase of mitosis. (A-J) The representative AFM images of chromosomes of MDA-MB-231 cells. The numbers of chromosomes were 49, 50, 51, 52, 53, 54, 55, 56, 57 and 60, respectively.



**Figure S3.** Representative cell stiffness maps and slopes of force-distance curves. (A-C) The cell stiffness maps extracted from the approach curves of MCF-10A, MCF-7 and MDA-MB-231 cells, respectively. (a-c) The cell stiffness maps extracted from the retraction curves of MCF-10A, MCF-7 and MDA-MB-231 cells, respectively. (D-F) The slopes of force-distance curves of MCF-10A, MCF-7 and MDA-MB-231 cells, respectively.