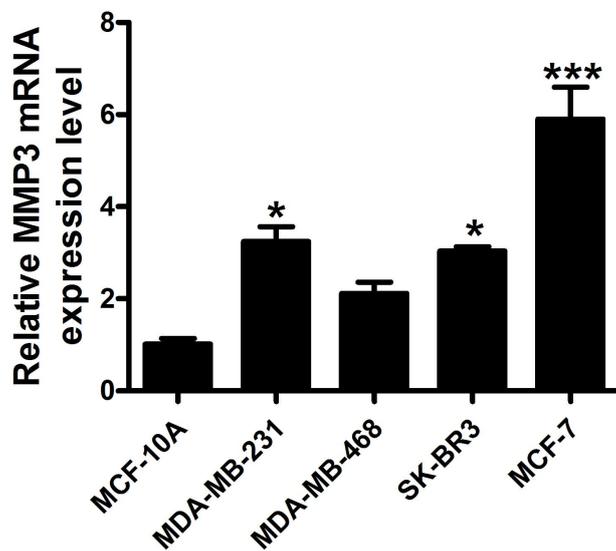


## Supplementary Results

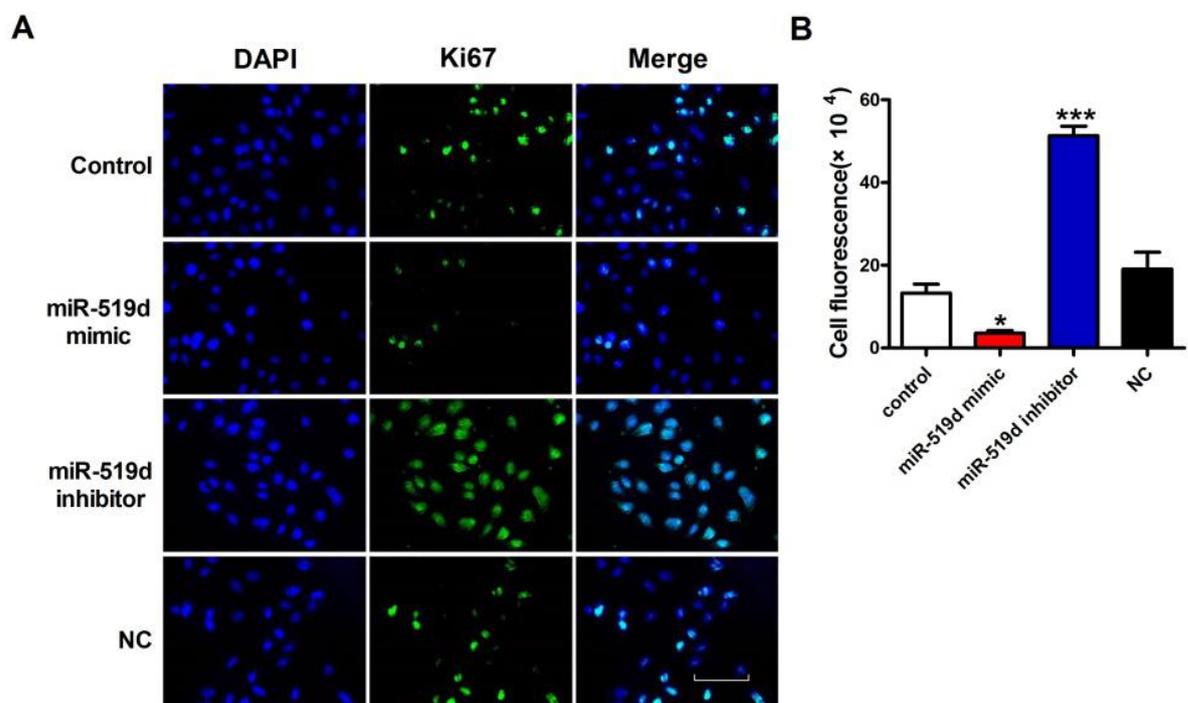
### Supplementary Figure 1

MMP3 expression levels in MDA-MB-231, MDA-MB-468, SK-BR3, MCF-7 and MCF-10A cell lines, determined by qRT-PCR. The data are presented as mean  $\pm$  SEM of three independent experiments. \*\* $p < 0.05$  \*\*\* $p < 0.001$  vs. MCF-10A.



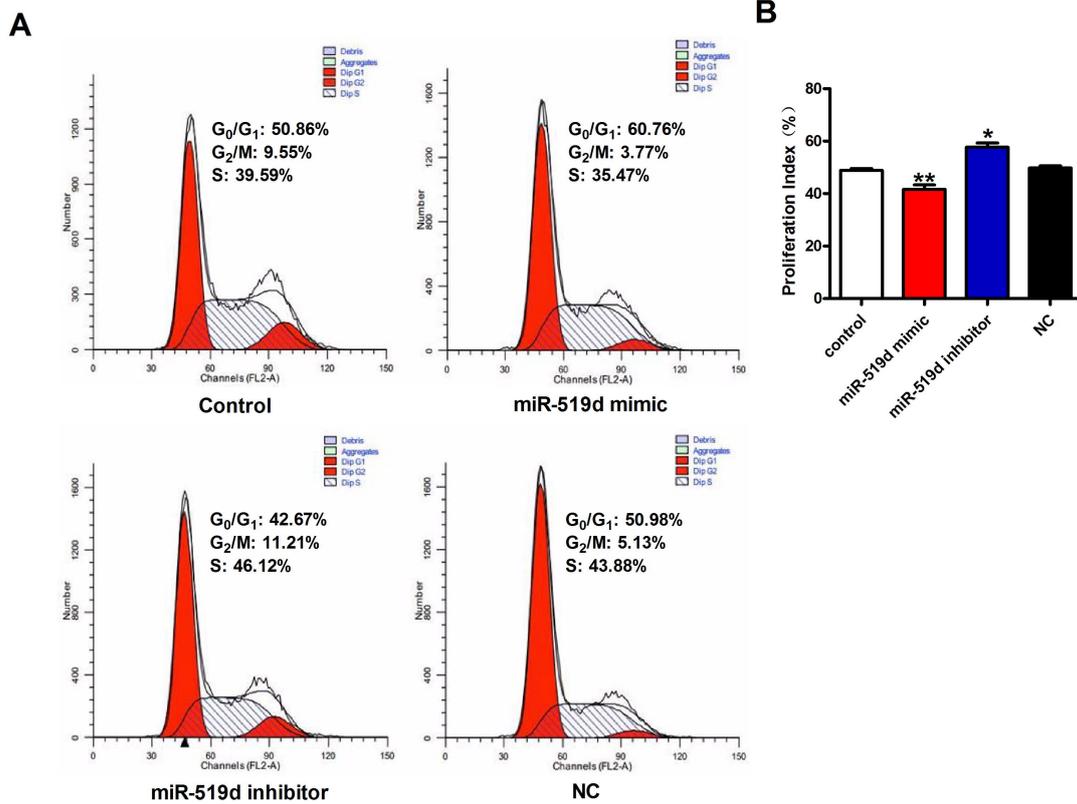
## Supplementary Figure 2

**A.** Representative images of immunofluorescence staining for Ki67 (green) in MCF-7 cells. The nuclei were stained in blue with DAPI. Scale bar indicates 100  $\mu\text{m}$ . **B.** The fluorescence intensity of Ki67 were counted. The data are expressed as mean $\pm$ SEM of three independent experiments. \* $p < 0.05$ , \*\*\* $p < 0.001$  vs. NC.



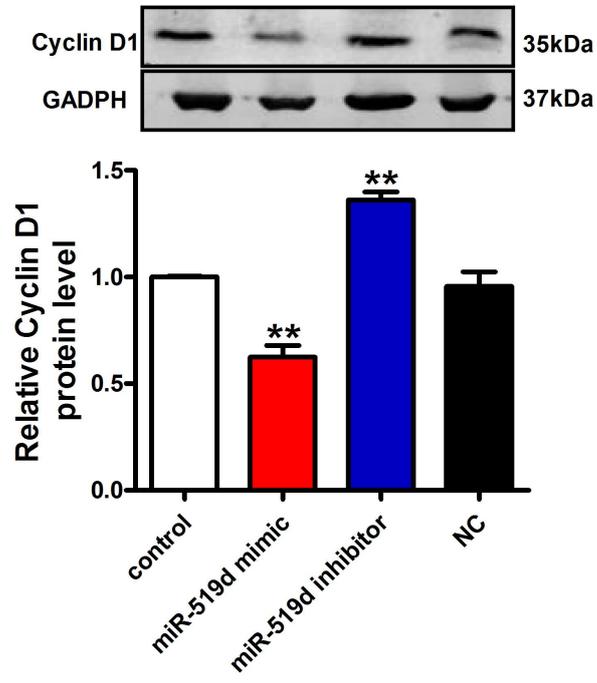
### Supplementary Figure 3

**A. Representative flow cytometry for cell cycle analysis in MCF-7 cells after miR-519d mimic and inhibitor transfection. B. Proliferation index in MCF-7 cells transfected with miR-519d mimic and inhibitor. \* $p < 0.05$ , \*\* $p < 0.01$  vs. NC.**



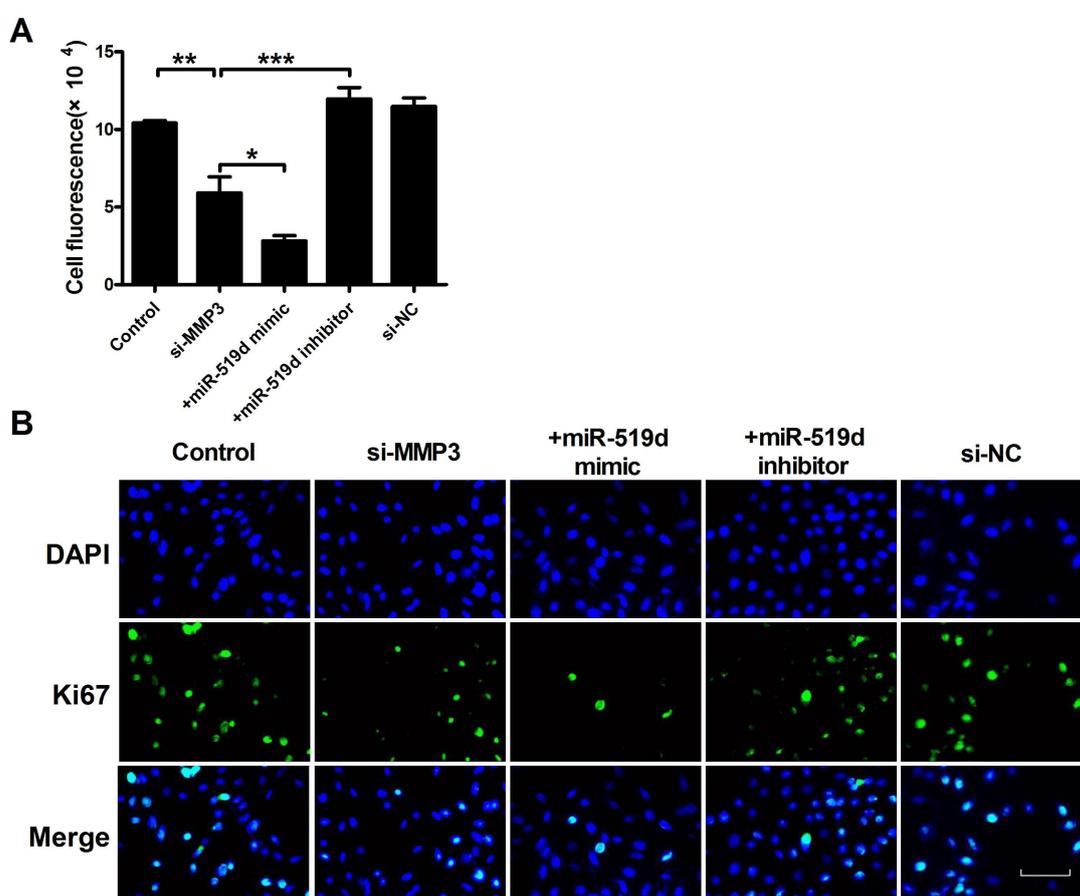
## Supplementary Figure 4

A. Western blot analysis of cyclin D1 protein levels. **\*\* $p < 0.01$  vs. NC.**



## Supplementary Figure 5

A. The fluorescence intensity of Ki67 were counted. B. Representative images of immunofluorescence staining for Ki67 (green) in MCF-7 cells. The nuclei were stained in blue with DAPI. Scale bar indicates 100  $\mu$ m. The data are expressed as mean $\pm$ SEM of three independent experiments. \* $p$ < 0.05, \*\* $p$ < 0.01 , \*\*\* $p$ <0.001 vs. si-MMP3.



## Supplementary Fig. 6

A. Western blot analysis of cyclin D1 protein levels.  $**p < 0.01$  ,

$***p < 0.001$  vs. si-MMP3.

