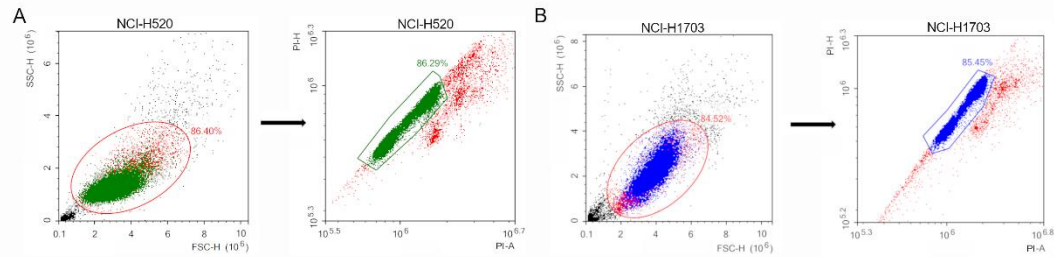


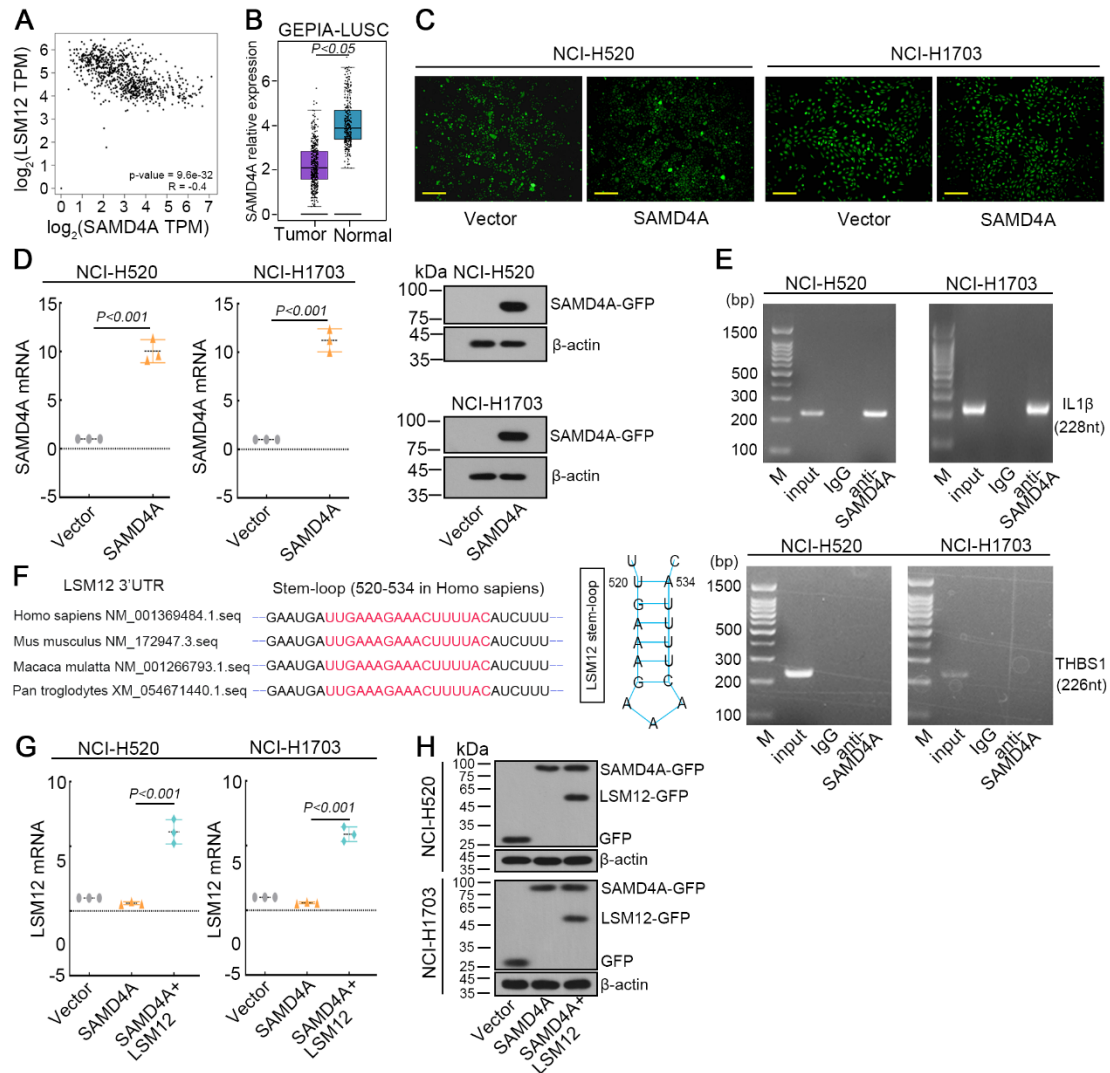
**Supplementary Figure 1. LSM12 expression in LSM12-overexpressing or LSM12-silencing cells.**

**A** Fluorescence of GFP of LUSC cells after infecting with lentivirus to overexpress or silence LSM12. The scale bar was 200  $\mu$ m. **B** The mRNA of LSM12 was detected by real-time qPCR. N = 3, and the data were presented as mean  $\pm$  standard deviation (SD). Significant differences were indicated as  $p < 0.05$ .



**Supplementary Figure 2. Representative strategies for flow cytometry analysis of NCI-H520 and NCI-1703 cells**

Representative strategies for flow cytometry analysis of NCI-H520 (A) and NCI-1703 (B) cells.



### Supplementary Figure 3. LSM12 is a downstream of SAMD4A.

**A** The correlation analysis between SAMD4A and LSM12 mRNA expression was obtained from the GEPIA database. **B** The mRNA expression of SAMD4A in the GEPIA dataset. **C** LUSC cells were infected with lentivirus to overexpress SAMD4A and the SAMD4A expression were detected using GFP fluorescence. The scale bar was 200  $\mu\text{m}$ . **D** The mRNA expression of SAMD4A in LUSC cells was measured with Real-time qPCR. The protein levels of SAMD4A were detected using an anti-GFP antibody by western blot. **E** The interactions between SAMD4A and IL1 $\beta$  (positive target control), or SAMD4A and THBS1 (negative control) were detected with RIP-PCR. **F** The conserved LSM12 3'UTR sequences from different species. The stem loop sequence was predicted by ViennaRNA Web Services. **G** The mRNA expression of LSM12 after overexpressing SAMD4A and LSM12 was detected by Real-time qPCR. **H** The protein levels of SAMD4A and LSM12 were detected using an anti-GFP antibody.  $N = 3$ , and the data were presented as mean  $\pm$  standard deviation (SD). Significant differences were indicated as  $p < 0.05$ .

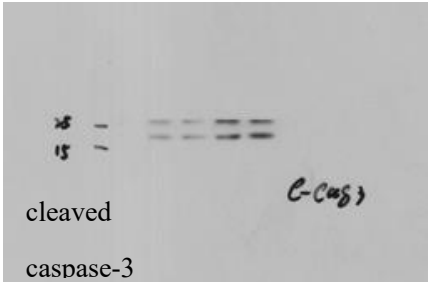
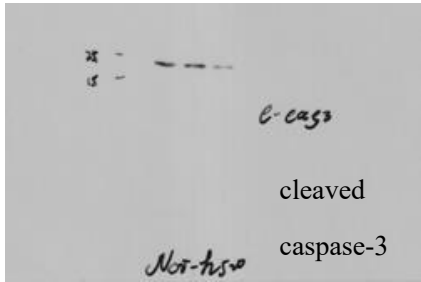
31 **Supplementary Figure 4. All original immunoblot images.**

32 Figure 4B.

33 LSM12 overexpression in NCI-H520 cells

LSM12 knockdown in NCI-H520 cells

34



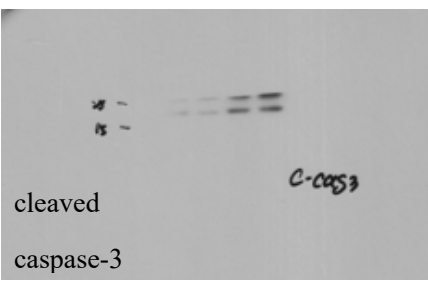
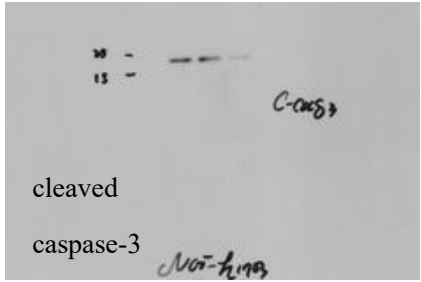
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36

37 LSM12 overexpression in NCI-H1703 cells

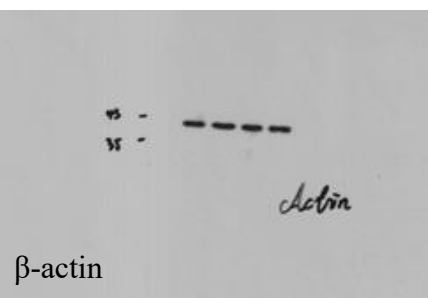
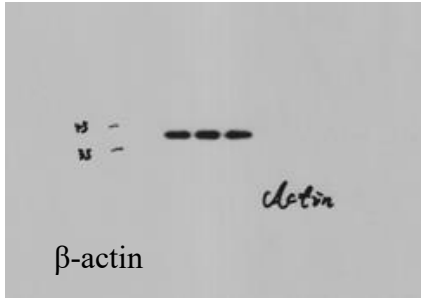
LSM12 knockdown in NCI-H1703 cells

38



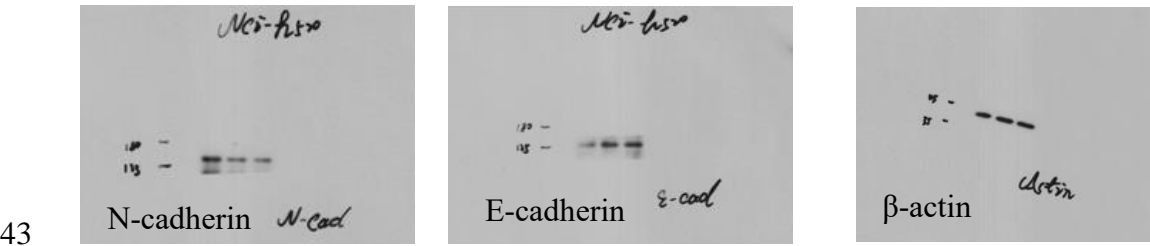
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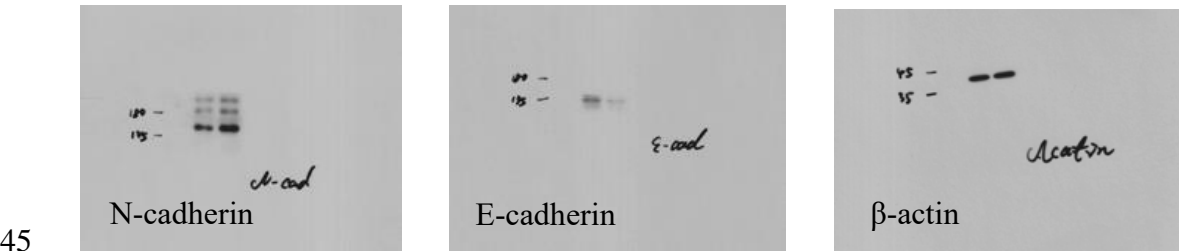


41 Figure 5C.

42 LSM12 knockdown in NCI-H520 cells

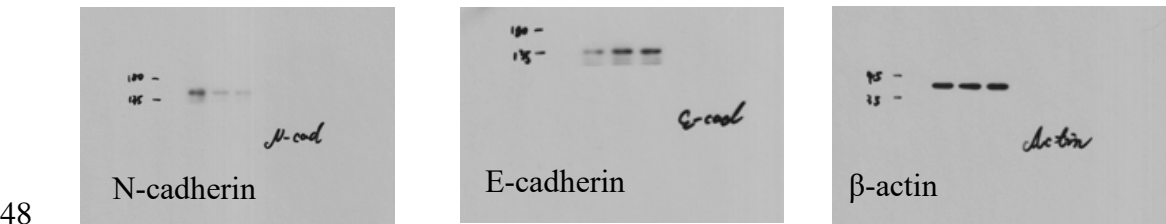


44 LSM12 overexpression in NCI-H520 cells

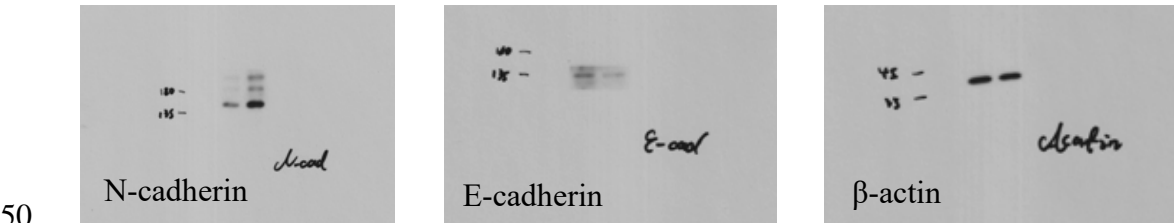


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47 LSM12 knockdown in NCI-H1703 cells



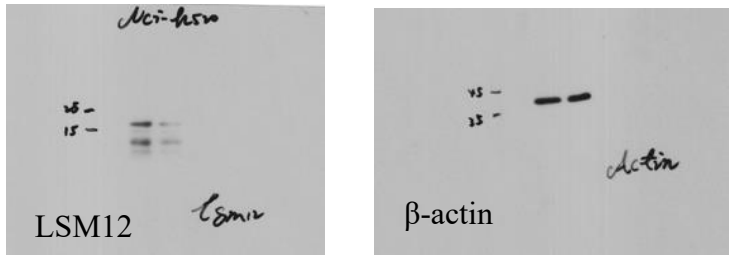
49 LSM12 overexpression in NCI-H1703 cells



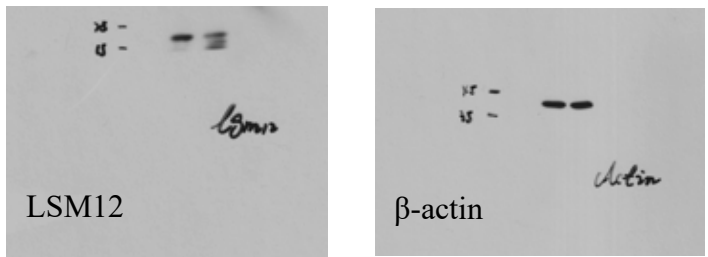
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52 Figure 7B.

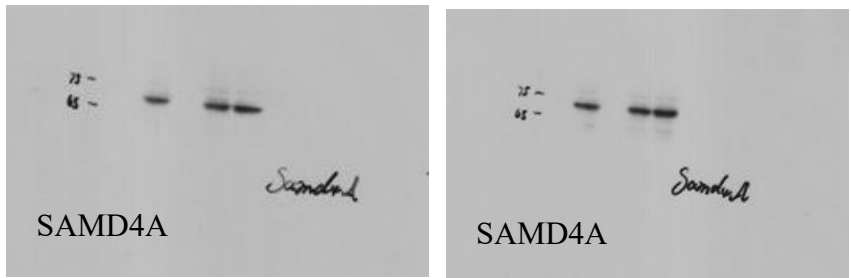
53 SAMD4A overexpression in NCI-H520 cells



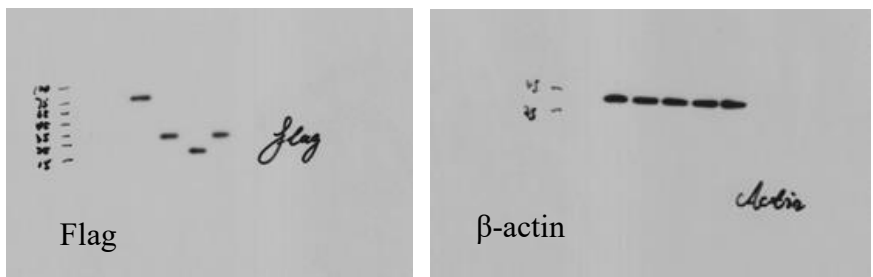
55 SAMD4A overexpression in NCI-H1703 cells



58 Figure 7E. RNA pull-down

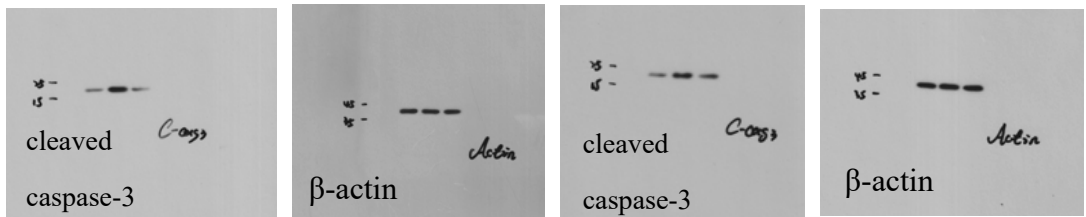


60 Figure 7I.



63 Figure 7M.

64 SAMD4A and LSM12 overexpression in NCI-H520 cells and NCI-H1703 cells



66 Figure S2D.

67 SAMD4A overexpression in NCI-H520 cells

68

69 SAMD4A overexpression in NCI-H1703 cells

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71

72 Figure S2H.

73 SAMD4A and LSM12 overexpression in NCI-H520 cells

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75 SAMD4A and LSM12 overexpression in NCI-H1703 cells

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