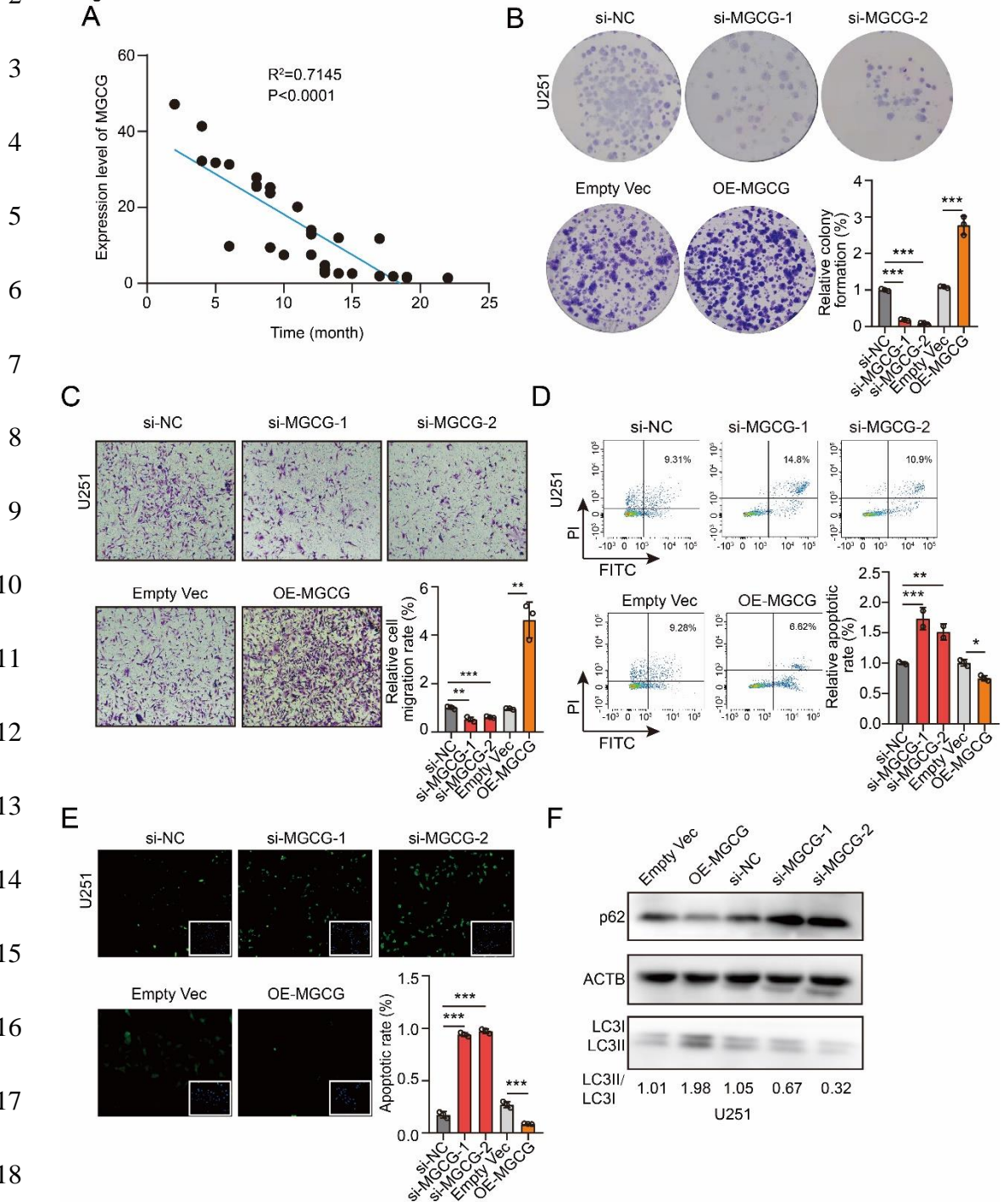


# 1 Inventory of supplementary information

2 Fig. S1



19 **Fig. S1 MGCG promotes GBM progression *in vitro*.**

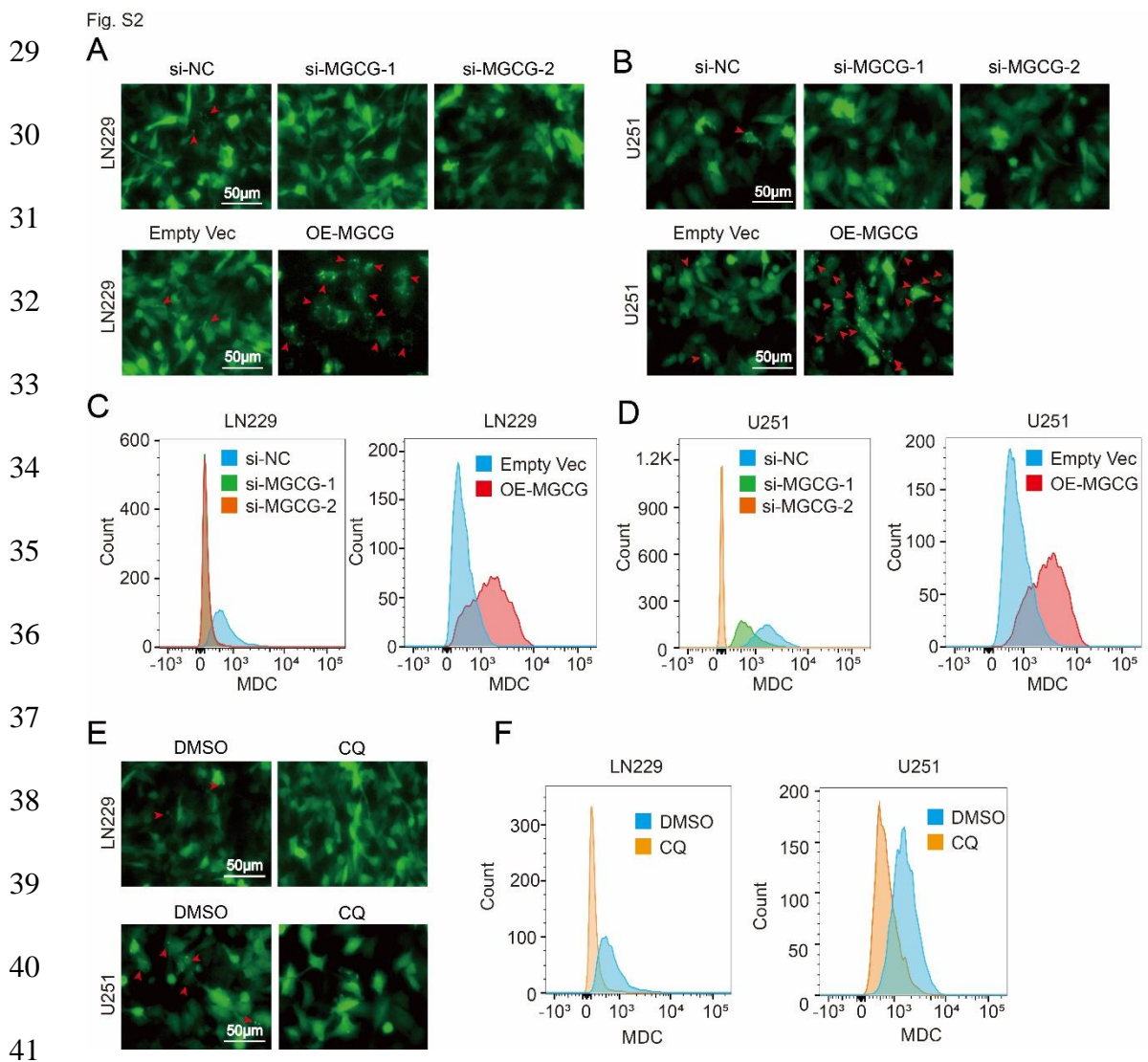
20 **A** Correlation analysis of MGCG expression level and survival time in 34 GBM patients.

21 **B** Detection of the effect of MGCG knockdown or overexpression on the growth of U251

22 cells by a colony formation assay. **C** The data of Transwell analysis show the effect of

23 MGCG knockdown or overexpression on the migration of U251 cells. **D** The data of Flow  
 24 cytometry analysis reveal the effect of MGCG knockdown or overexpression on apoptosis  
 25 of U251 cells. **E** The data of TUNEL analysis show the effect of MGCG knockdown or  
 26 overexpression on apoptosis of U251 cells. **F** Western blot analysis of the protein levels of  
 27 p62 and LC3 after knockdown or overexpression of MGCG in U251 cells.

28



36 **Fig. S2 MGCG facilitates autophagy in GBM cells.**

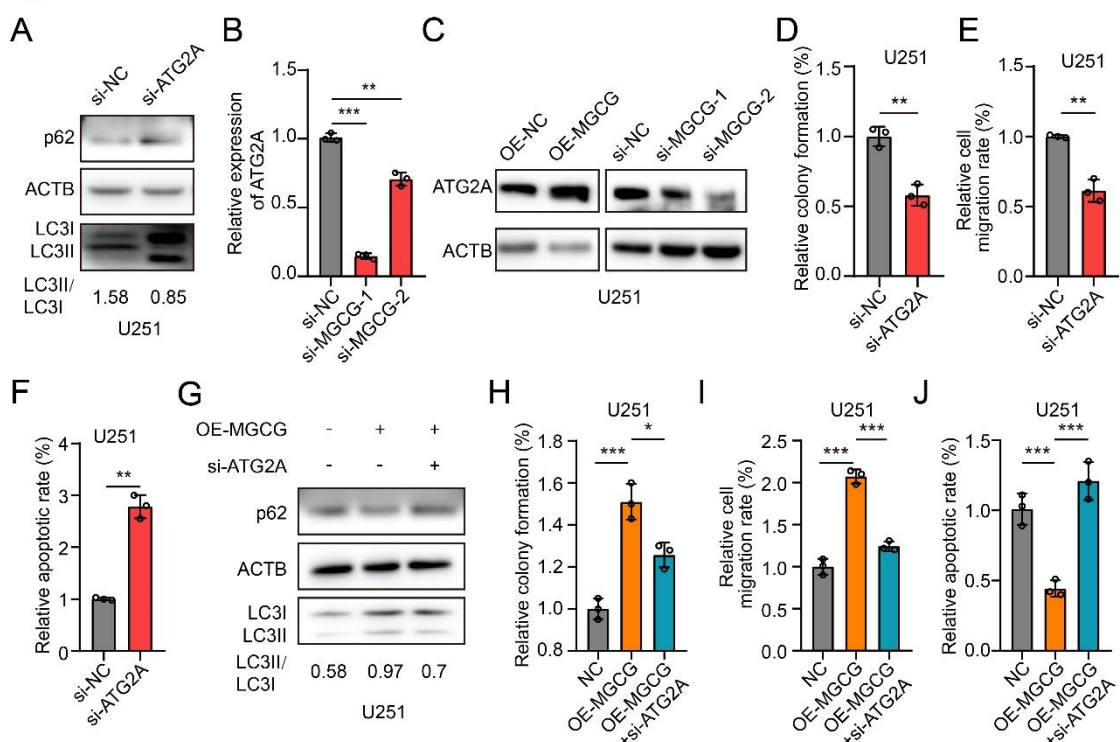
37 **A** GFP-LC3 adenovirus infected LN229 cells with MGCG knockdown or overexpression to

44 detect autophagy. Red arrow: autophagosome. **B** GFP-LC3 adenovirus infected U251 cells  
 45 with MGCG knockdown or overexpression to detect autophagy. Red arrow: autophagosome.  
 46 **C** Detection of autophagy of MGCG knockdown or overexpression by MDC stain and flow  
 47 cytometry in LN229 cells. MDC: monodansylcadaverin. **D** Detection of autophagy of  
 48 MGCG knockdown or overexpression by MDC stain and flow cytometry in U251 cells. **E**  
 49 LN229 and U251 cells were treated with DMSO and CQ, GFP-LC3 adenovirus infected the  
 50 LN229 and U251 cells to detect autophagy. Red arrow: autophagosome. CQ: chloroquine.  
 51 **F** LN229 and U251 cells were treated with DMSO and CQ, detection of autophagy by MDC  
 52 stain and flow cytometry.

53

Fig. S3

54



63 **Fig. S3 MGCG facilitates tumor progression by promoting the expression of ATG2A in**  
 64 **U251 cells.**

65

A Western blot analysis was used to detect the protein levels of p62 and LC3 after ATG2A

66 knockdown in U251 cells. **B** RT-qPCR analysis of the relative expression of ATG2A after  
67 MGCG knockdown in U251 cells. **C** Western blot analysis of the protein levels of ATG2A  
68 after MGCG overexpression or knockdown in U251 cells. **D** Colony formation assays were  
69 used to detect the effect of ATG2A knockdown on the growth of U251 cells. **E** The data of  
70 Transwell analysis show the effect of ATG2A knockdown on the migration of U251 cells.  
71 **F** The data of TUNEL analysis shows the effect of ATG2A knockdown on apoptosis of  
72 U251 cells. **G** Western blotting was used to detect the protein levels of p62 and LC3 after  
73 overexpression of MGCG in U251 cells. **H** Colony formation assays were used to detect  
74 the effect of MGCG overexpression or overexpression and simultaneous knockdown of  
75 ATG2A on the growth of U251 cells. **I** The data of Transwell analysis show the effect of  
76 MGCG overexpression or overexpression and simultaneous knockdown of ATG2A on the  
77 migration of U251 cells. **J** The data of TUNEL analysis show the effect of MGCG  
78 overexpression or overexpression of MGCG and simultaneous knockdown of ATG2A on  
79 apoptosis of U251 cells. Error bars, S.E.M. from three independent experiments. \* $P < 0.05$ ;  
80 \*\* $P < 0.01$ ; \*\*\* $P < 0.001$  by two-tailed Student's test.