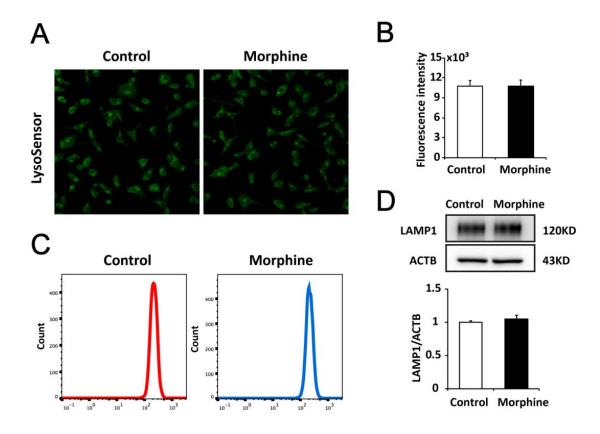


**Supplementary Figure S1** Morphine administration did not change SQSTM1/p62 mRNA level in vivo and in vitro. (A) Morphine was intrathecally injected for 7 days in mice, and samples were analyzed by qPCR (n=4); (B) SH-SY5Y cells were treated with morphine (200  $\mu$ M) for 24 h, and samples were analyzed by qPCR (n=3).



**Supplementary Figure S2** SH-SY5Y cells were treated with morphine (200  $\mu$ M) for 24 h. (A-C) The lysosomal pH was assessed by confocal microscopic scanning and flow cytometry analysis through LysoSensor Green staining (n=3); (D) The level of LAMP1 was assessed by western blot (n=3).