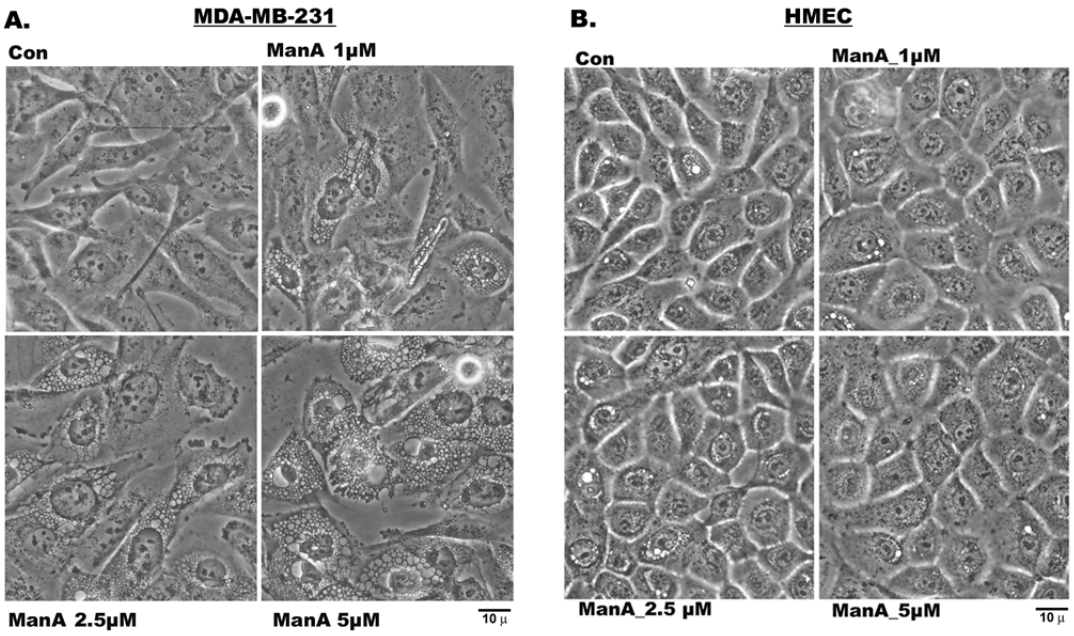
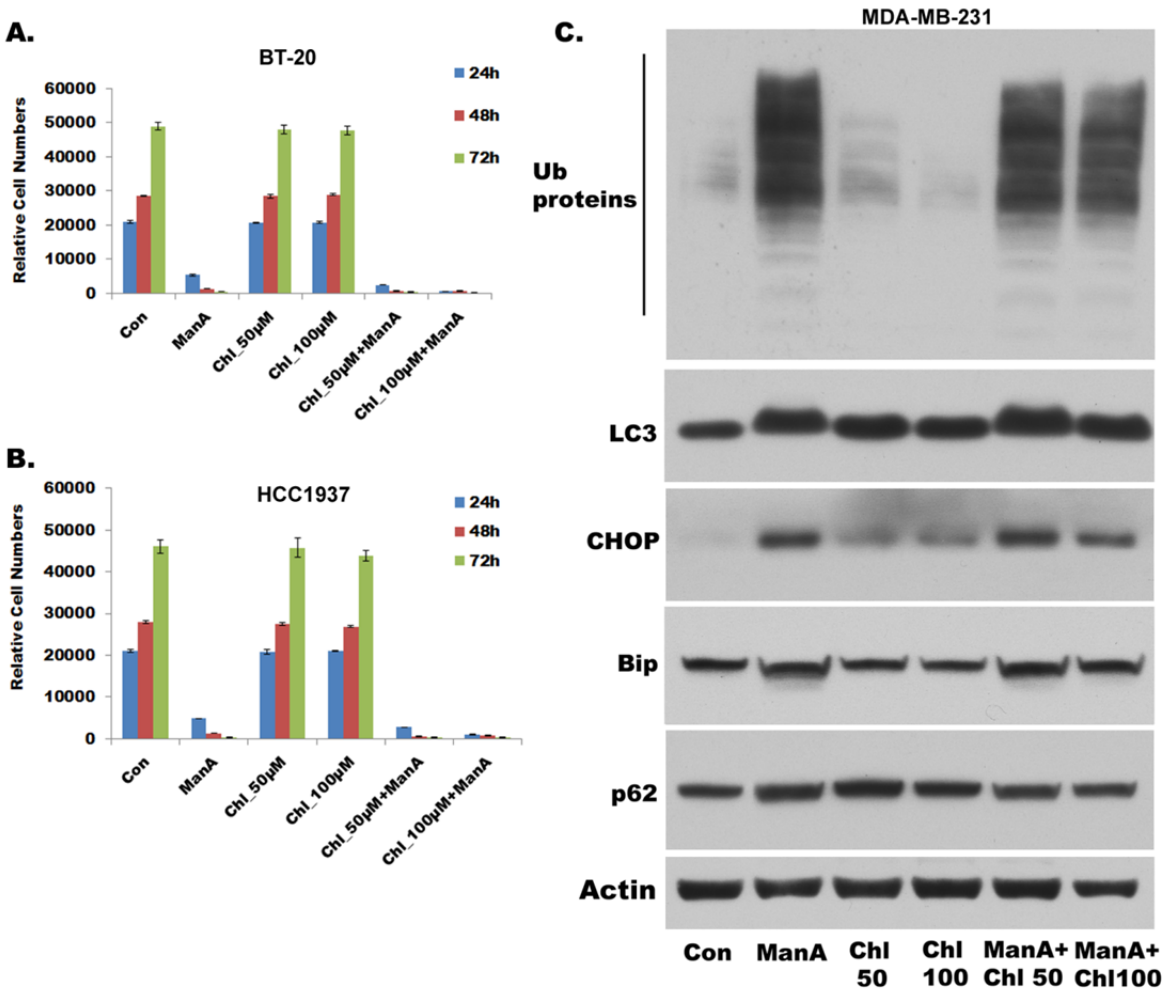
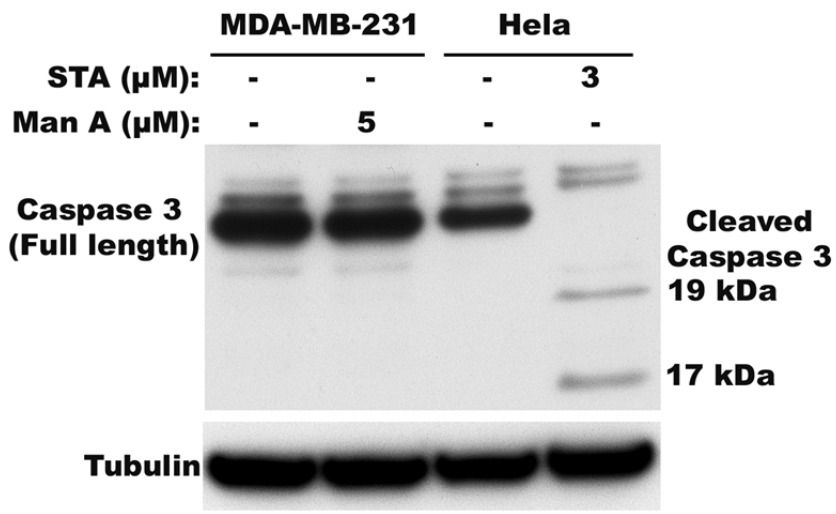
Supplemental Figures:



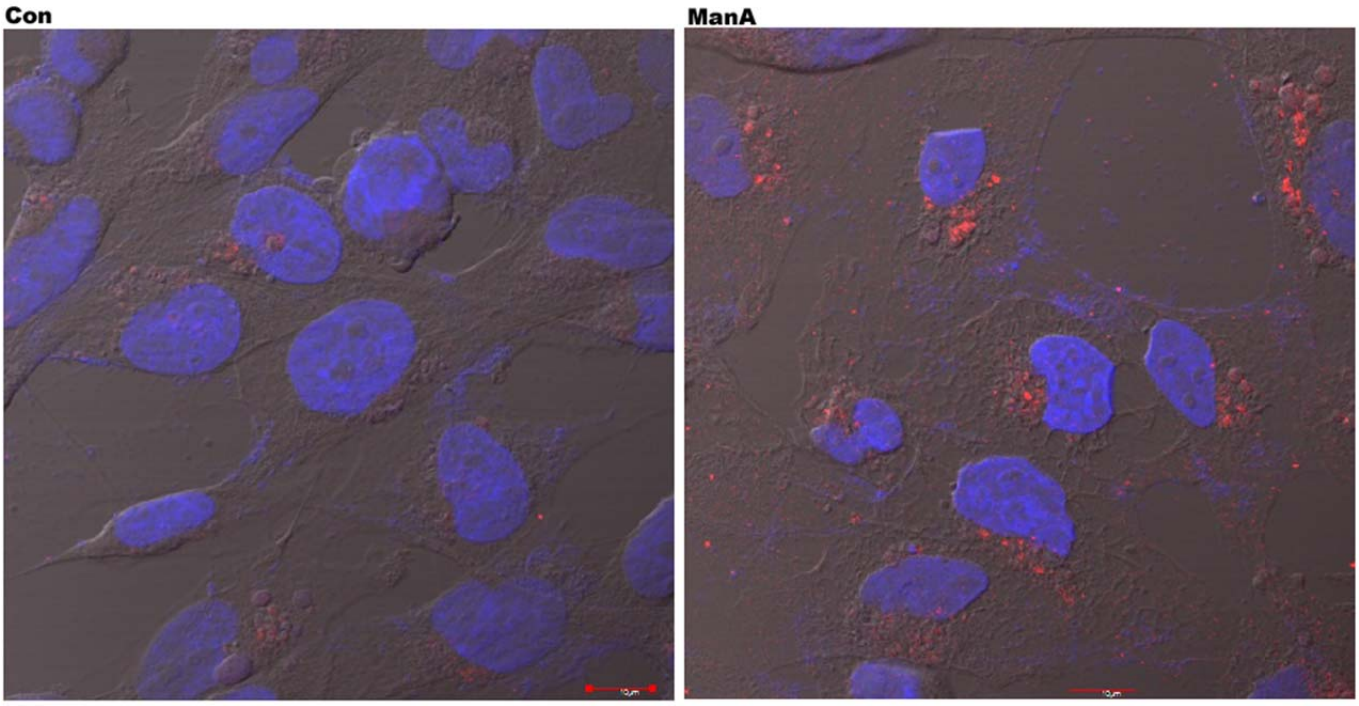
Supplemental Figure 1: Phase contrast images of MDA-MB-231 and HMEC cells treated with indicated concentrations of ManA for 9h. A) Dose dependent induction of cytoplasmic vacuolation by ManA in MDA-MB-231cells. B) Man A failed to induce cytoplasmic vacuolation in HMEC.



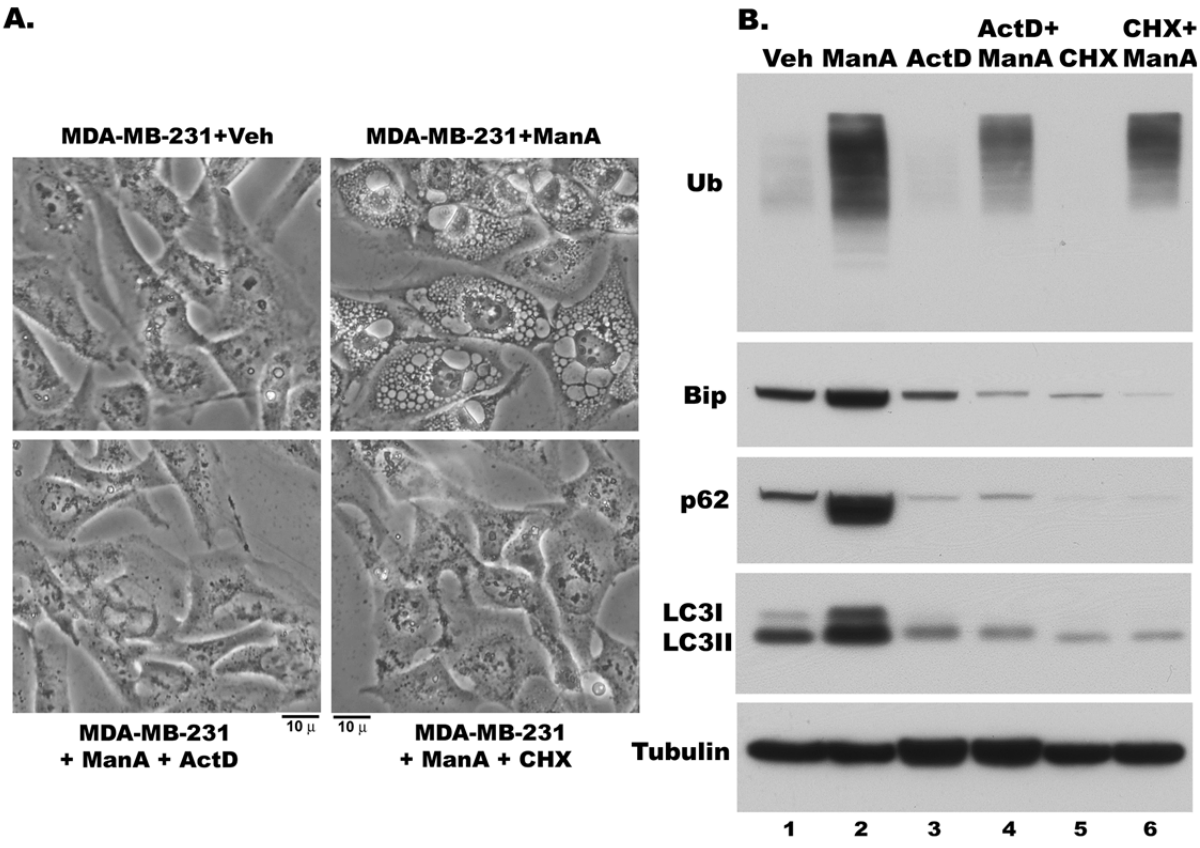
Supplemental Figure 2: Failed inhibition of cell death by autophagy inhibitor chloroquine. MTT assay with ManA (5uM), Chloroquine (50uM, 100uM) individually and together in BT-20 (A) and HCC1937 (B) cells at 24h, 48h, 72h. C) Western blots for Bip, p62, CHOP, LC3 and protein ubiquitination in total cell lysates of MDA-MB-231 cells treated with ManA without or with Chloroquine.



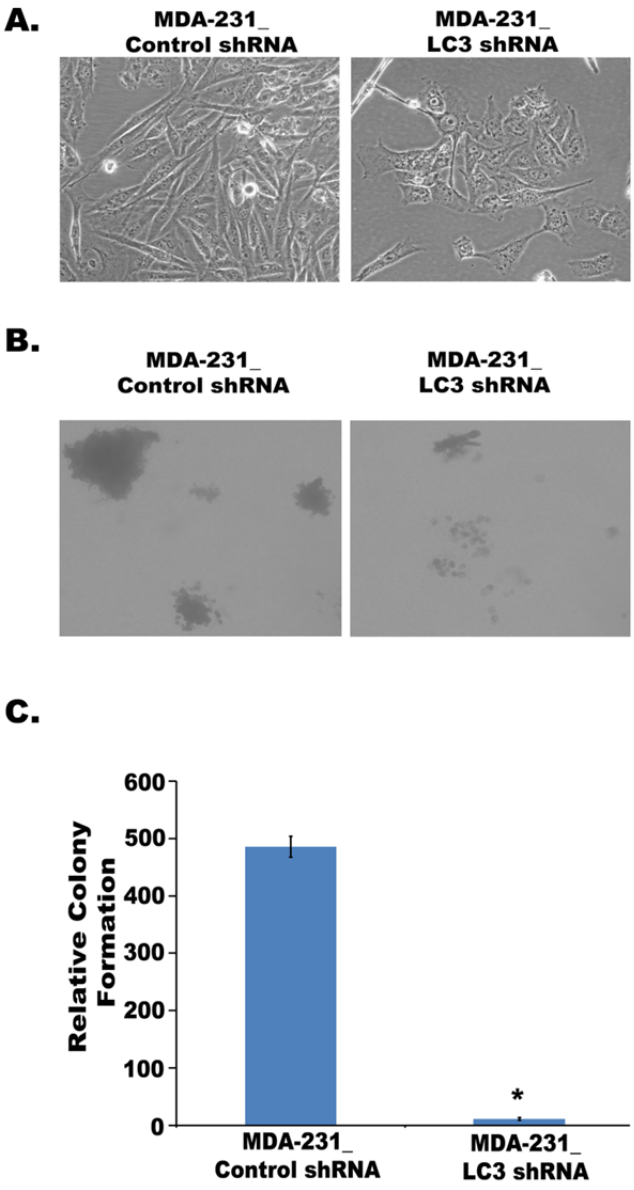
Supplemental Figure 3: Western blot of total cell lysates from ManA treated MDA-MB-231 cells and Saturosprin (STA) treated Hela cells with Caspase-3 antibody that recognizes cleaved Caspase3. No cleavage of Caspase-3 was seen in ManA treated MDA-MB-231 cells.



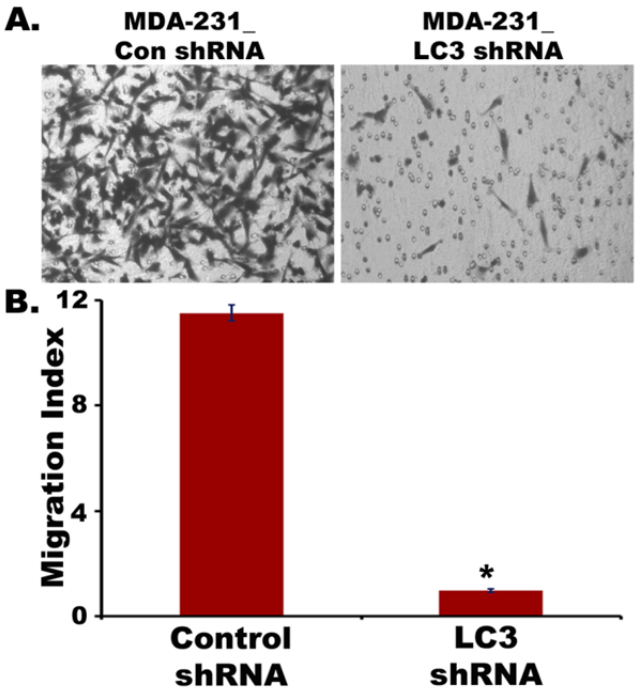
Supplemental Figure 4: Confocal images of control (Con) and ManA treated MDA-MB-231 cells using LC3 antibody (red). Nuclei were labeled with DAPI (blue).



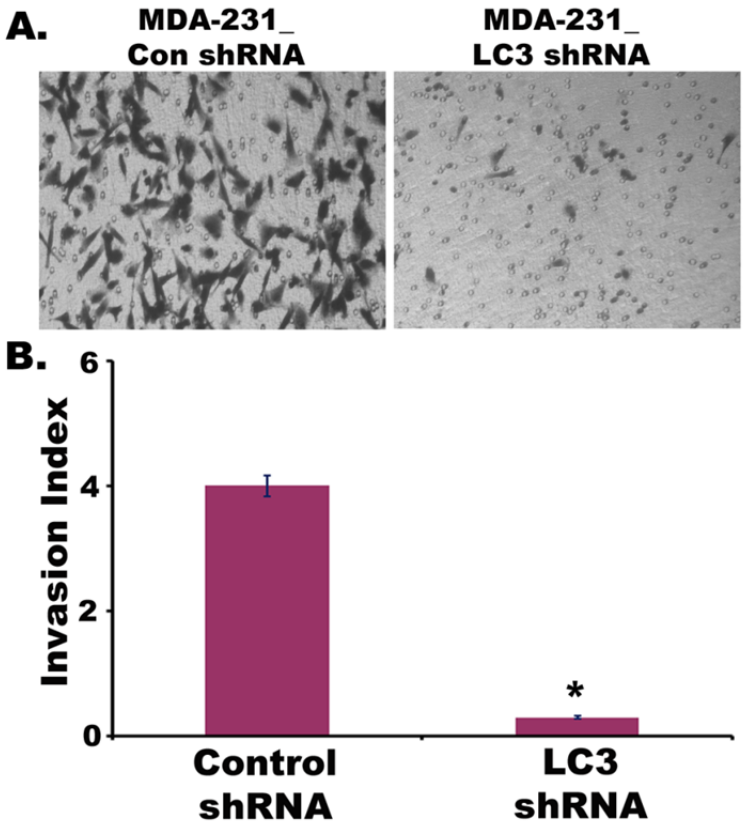
Supplemental Figure 5: A) ManA induced cytoplasmic vacuolation in MDA-MB-231 cells is prevented by general transcription and translation inhibitors Actinomycin D (ActD, 8 µM) and cycloheximide (CHX, 25 µM) respectively. B) Western blots of MDA-MB-231 total cell lysates with ManA treatment for Bip, p62, LC3 and ubiquitinated proteins in the absence and presence of ActD and CHX.



Supplemental Figure 6: LC3 knockdown reduced colony formation by MDA-MB-231 cells in soft Agar. A) Phase contrast image control shRNA and LC3shRNA expressing MDA-MB-231 cells. B) Crystal violet stained colonies of control shRNA and LC3 shRNA expressing MDA-MB-231 cells in soft Agar. C) Graphic representation of relative number of colonies formed by MDA-MB-231 cells expressing control shRNA and LC3 shRNA (* $p<0.001$).



Supplemental Figure 7: LC3 deficiency inhibited migration properties of MDA-MB-231 cells. A) Phase contrast images of toluidine blue stained transit well migration assay of con shRNA and LC3 shRNA MDA-MB-231 cells. B) Comparative differences in migration index of MDA-MB-231 cells expressing con shRNA and LC3 shRNA (* $p<0.001$).



Supplemental Figure 8: LC3 deficiency inhibited invasion properties of MDA-MB-231 cells.

A) Toluidine blue stained phase contrast images of MDA-MB-231 cells expressing con shRNA and LC3 shRNA invading through Matrigel coated insert membranes. B) Comparative differences in invasion index of MDA-MB-231 cells expressing con shRNA and LC3 shRNA (*$p<0.001$).