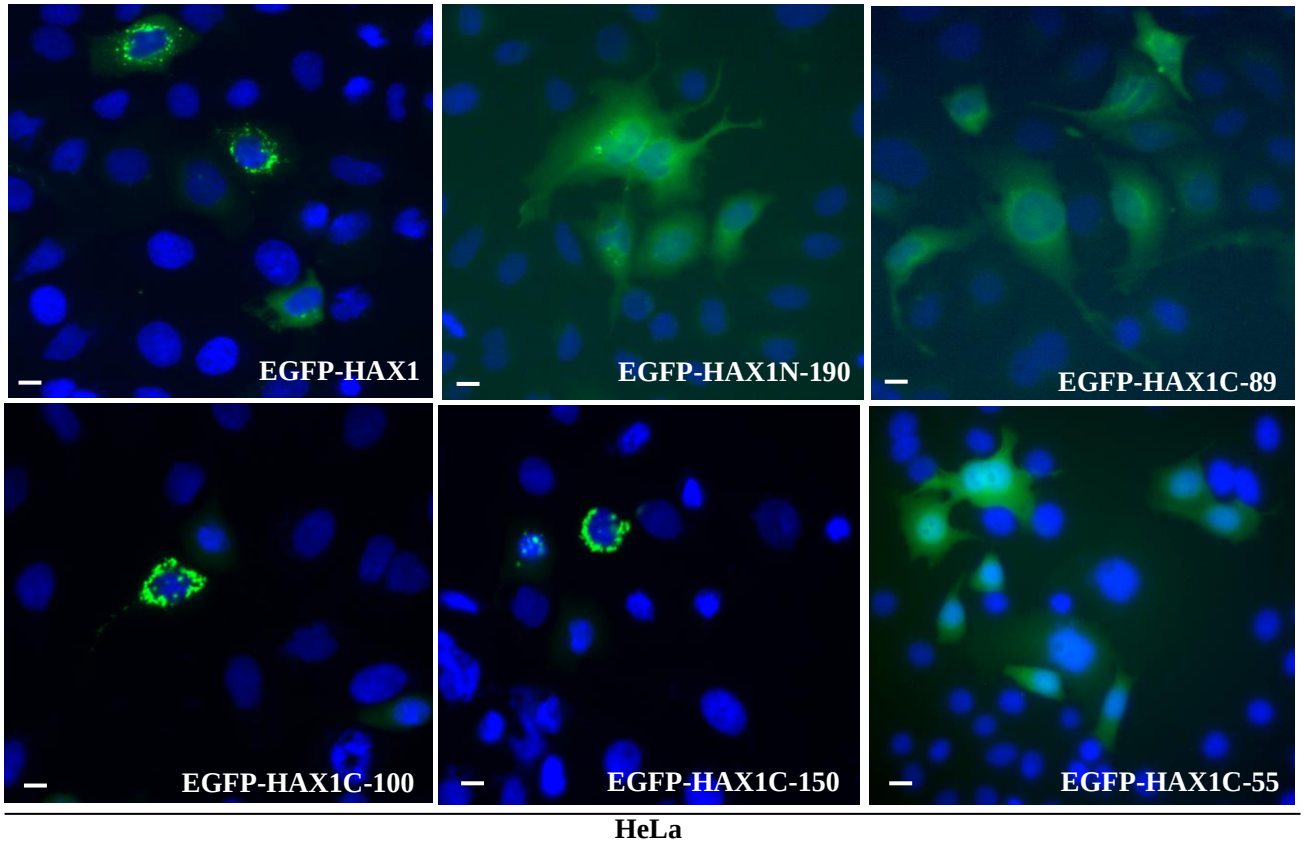
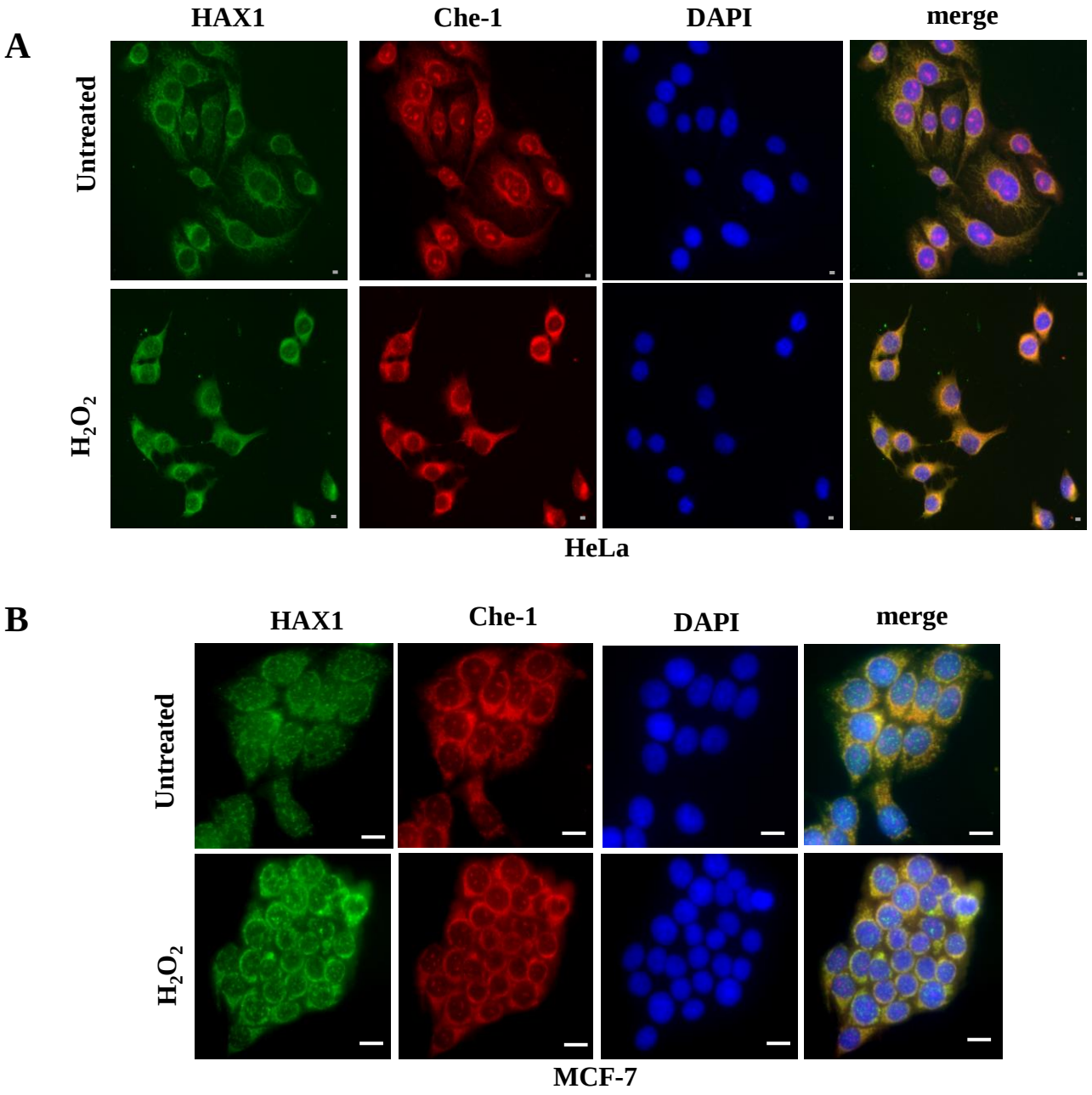
A

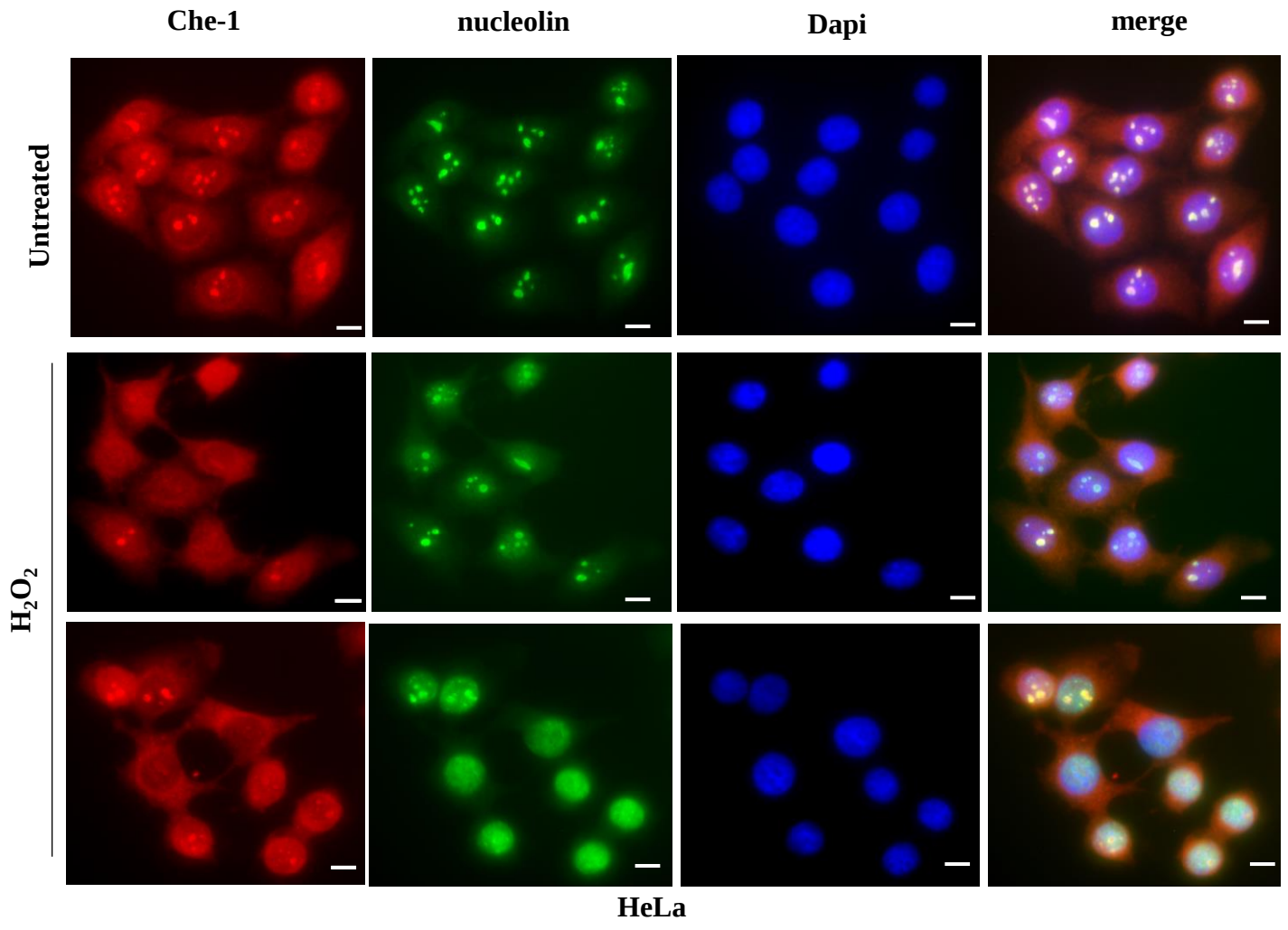


Supplementary Figure S1. Subcellular distribution of EGFP-HAX1 and its deletion constructs. (**A**): HeLa cells were transfected with EGFP-HAX1 or its deletion mutants as indicate. Nuclei were stained with DAPI (blue). Scale bar, 50 μm.

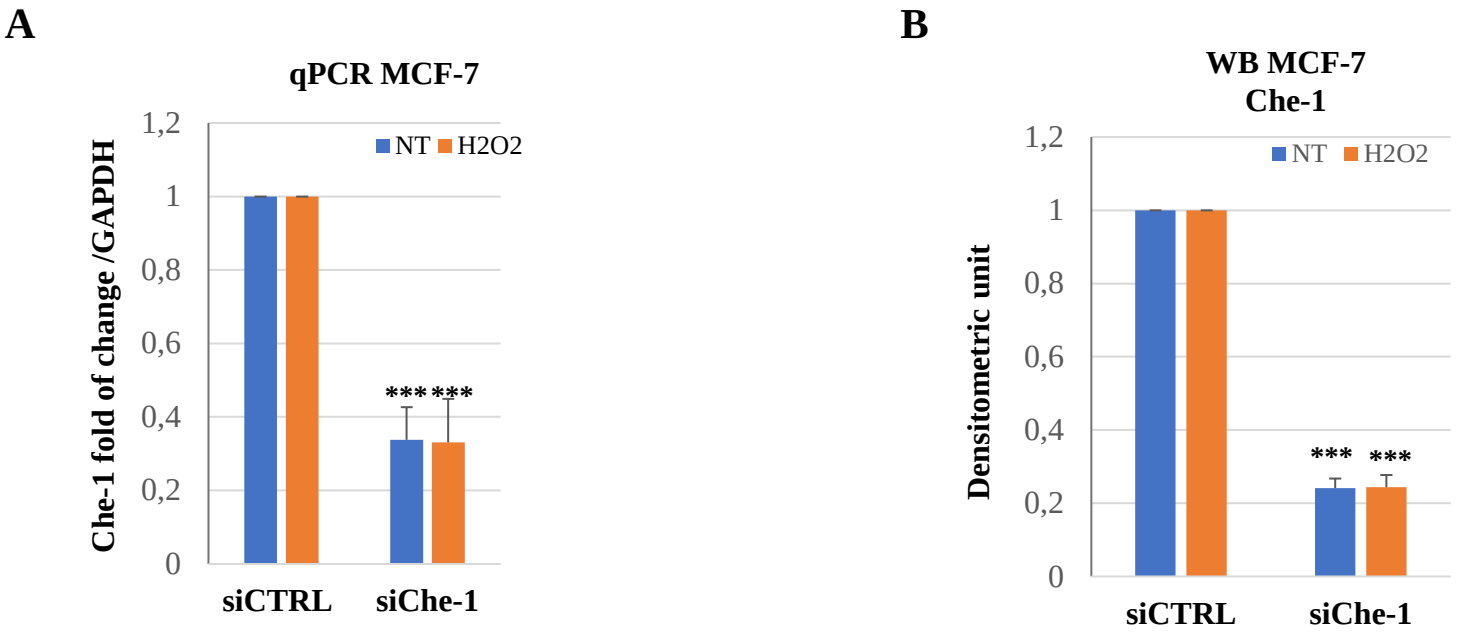


Supplementary Figure S2. Subcellular distribution and colocalization of HAX1 and Che-1 upon H_2O_2 treatment. (**A**): Dual-label indirect immunofluorescence with anti-HAX1 rabbit polyclonal antibody (green) and the anti-Che-1 rat polyclonal antibody (red) in HeLa cells untreated or treated with H_2O_2 (1 mM, 3 h). Nuclei are stained with DAPI (blue) (left). Scale bar, 50 μm. (**B**): Dual-label indirect immunofluorescence with anti-HAX1 rabbit polyclonal antibody (green) and the anti-Che-1 rat polyclonal antibody (red) in MCF7 cells untreated or treated with H_2O_2 (1 mM, 3 h). Nuclei are stained with DAPI (blue) (left). Scale bar, 50 μm.

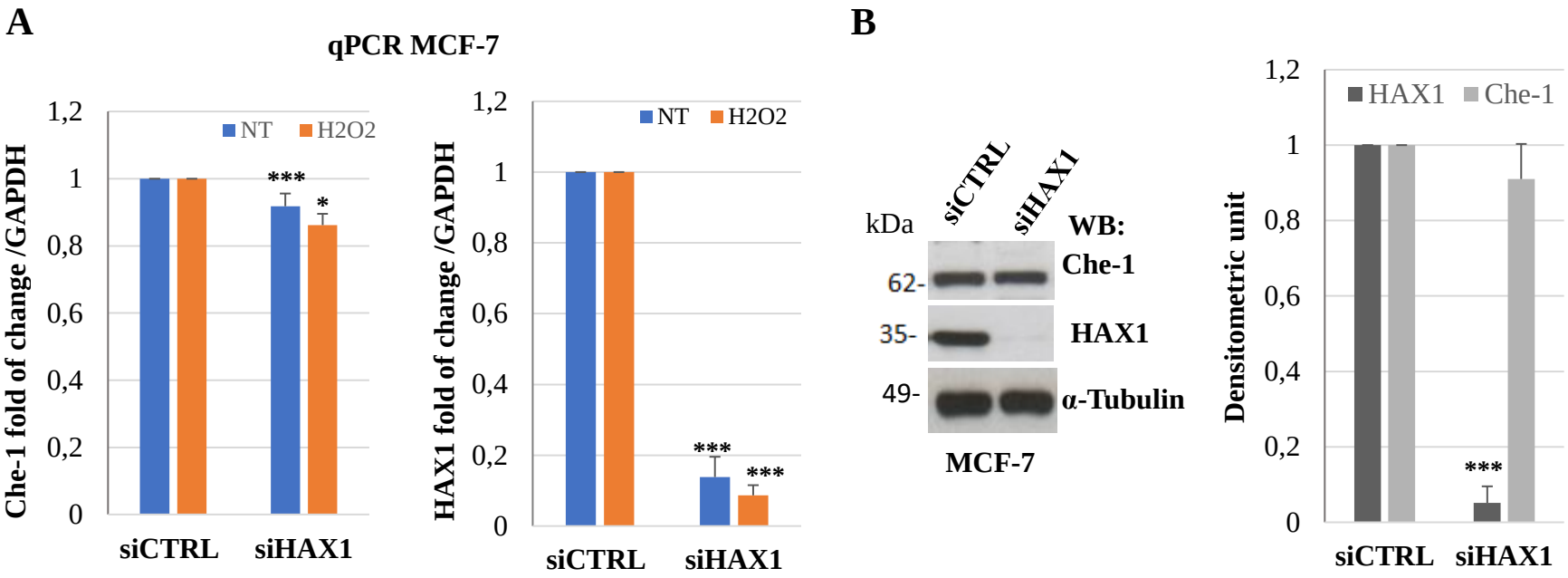
A



Supplementary Figure S3. Subcellular distribution and colocalization of Che-1 and nucleolin upon H_2O_2 treatment. (**A**): Dual-label indirect immunofluorescence with anti-Che-1 rabbit polyclonal antibody (red) and the anti-nucleolin mouse monoclonal antibody (green) in HeLa cells untreated or treated with H_2O_2 (1 mM, 3 h). Nuclei are stained with DAPI (blue) (left). Scale bar, 50 μm.



Supplementary Figure S4. Che-1 mRNA and protein levels upon Che-1 siRNA in MCF-7 untreated and treated with H_2O_2. (**A**): Quantitative real time RT-PCR (qPCR) analysis of the Che-1 mRNA in MCF-7 cells upon Che-1-silencing (siControl, siChe-1), untreated or treated with H_2O_2 (1 mM, 3 h). The gene expression ratio of Che-1 mRNA, normalized as indicated, is shown as the mean ± SD from at least four independent experiments performed in triplicate (*p≤0.05; **p ≤0.01; ***p≤0.001). (**B**): Densitometric analyses of Che-1 protein level in MCF-7 cells upon Che-1-silencing (siControl, siChe-1), untreated or treated with H_2O_2 (1 mM, 3 h) (representative western blot Figure 4C). Densitometric analysis represents the mean ± S.D. of at least four independent experiments.



Supplementary Figure S5. HAX1 and Che-1 mRNA and protein levels upon HAX1 siRNA in MCF-7. (**A**): Quantitative real time RT-PCR (qPCR) analysis of the Che-1 (left panel) and HAX1 (right panel) mRNA levels in MCF-7 cells upon HAX1 silencing (siControl, siHAX1), untreated or treated with H_2O_2 (1 mM, 3 h). The gene expression ratio of mRNAs, normalized as indicated, is shown as the mean ± SD from at least four independent experiments performed in triplicate (*p≤0.05; **p ≤0.01; ***p≤0.001). (**B**): Representative western blot of MCF-7 cells upon HAX1 silencing (siControl, siHAX1). The antibodies used are indicated. Densitometric analysis represents the mean ± S.D. of at least four independent experiments (right panel).

Supplementary Table S1. Oligos used in the present study

Primer name	Primer sequence (5'-3')
qPCR HAX1 F	CTTGGCCCGGTTCTAACGCC
qPCR HAX1 R	GGGACCGGAACCAACGTCCC
qPCR GAPDH F	CATGAGAAGTATGACAACAGCCT
qPCR GAPDH R	AGTCCTTCCACGATACCAAAGT
qPCR AATF F	GACACCCAGTGGGCGCCTTG
qPCR AATF R	TTAAAGGCGGGGTTGGGCGG
RCA Primer	AGTACAGTAGCAGAATTGAG
Alexa-Fluor-555- detection probe	CTCAATTCTGCTACTTTACTAC
Padlock-HAX1 probe	CTGAAGCCGAAGCCATTTTTTTCTCAATTCTGCTACTTTACTACCTCAAT TCTGCTACTGTACTACTTTTTTCCTCCTGGGCTGAAG

Sequence of primers and probes are indicated. F indicates forward primer; R stands for reverse primer.