# Supplementary Materials

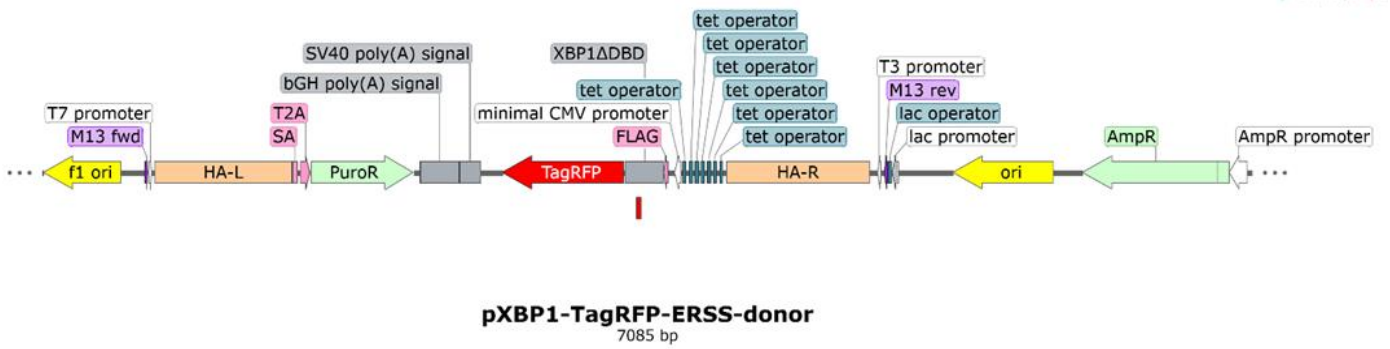


**Figure S1** Plasmid map pXBP1-TagRFP-ERSS-donor.

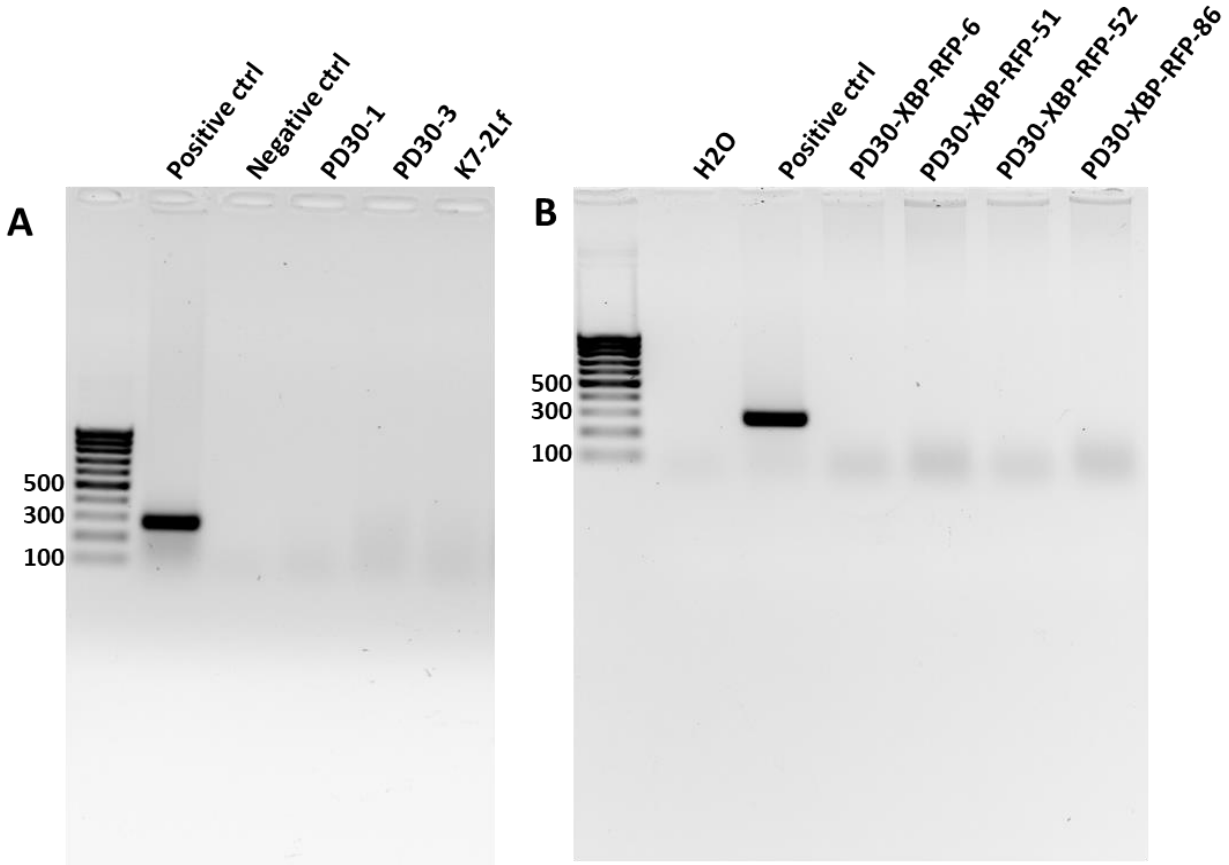


**Figure S2** PCR test for mycoplasma of the iPSC lines. (A) iPSCs from a patient with Parkinson's disease associated with a mutation in the *GBA1* gene (PD30-1 and PD30-3) and iPSCs from a conditionally healthy individual (K7-2Lf). (B) Transgenic iPSCs carrying an ER stress biosensor XBP1-TagRFP (PD30-XBP-RFP-6, PD30-XBP-RFP-51, PD30-XBP-RFP-52 and PD30-XBP-RFP-86). DNA-marker Step100.

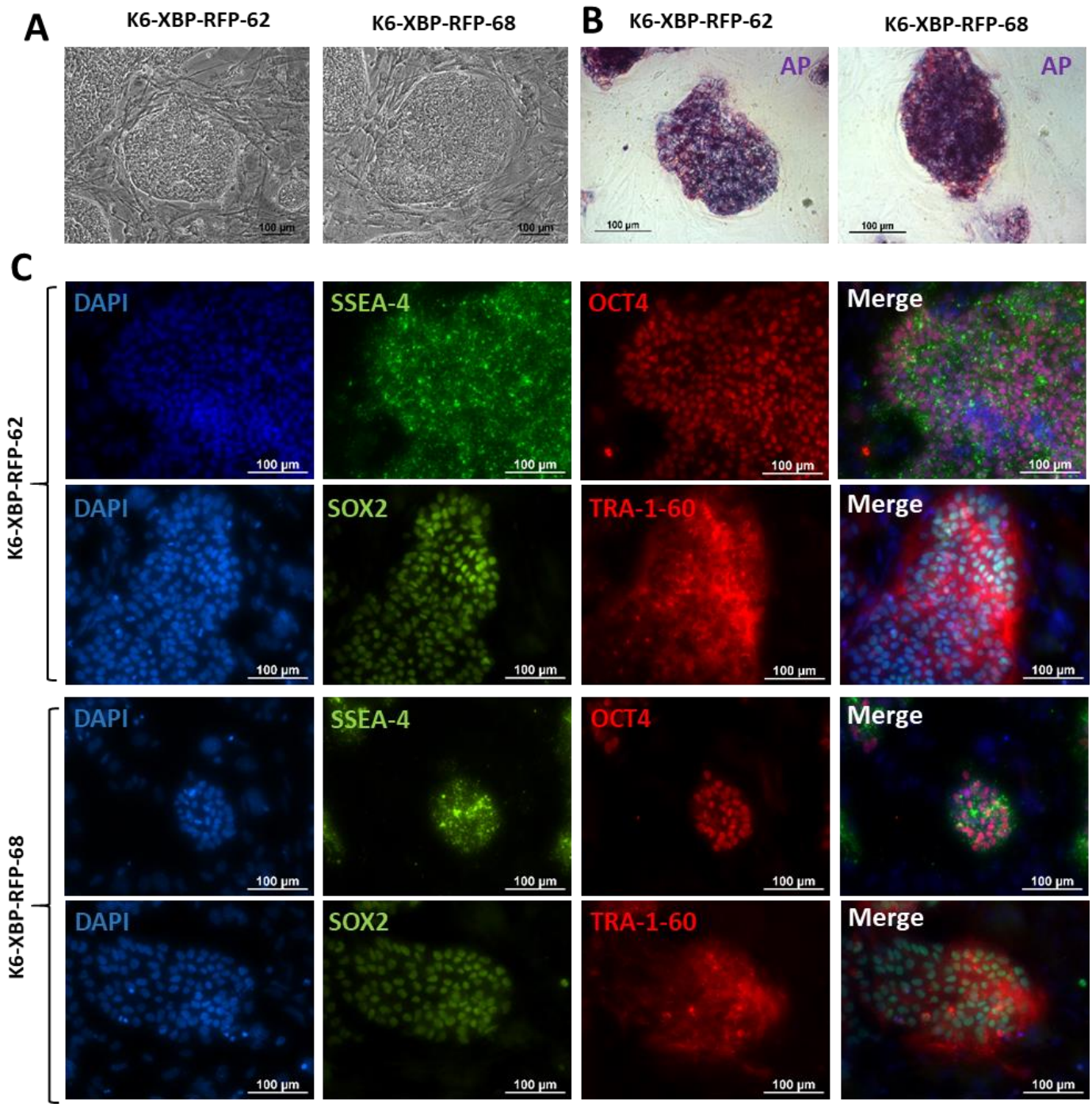


**Figure S3** Characteristics of transgenic iPSCs carrying an ER stress biosensor XBP1-TagRFP (K6-XBP-RFP-62, K6-XBP-RFP-68). (A) Morphology of iPSC colonies. (B) Histochemical detection of alkaline phosphatase (AP). (C) Immunofluorescent staining for pluripotency markers OCT4 (red signal), SOX2 (green signal), SSEA-4 (green signal), TRA-1-60 (red signal). Nuclei are stained with DAPI (blue signal). All scale bars: 100 µm.

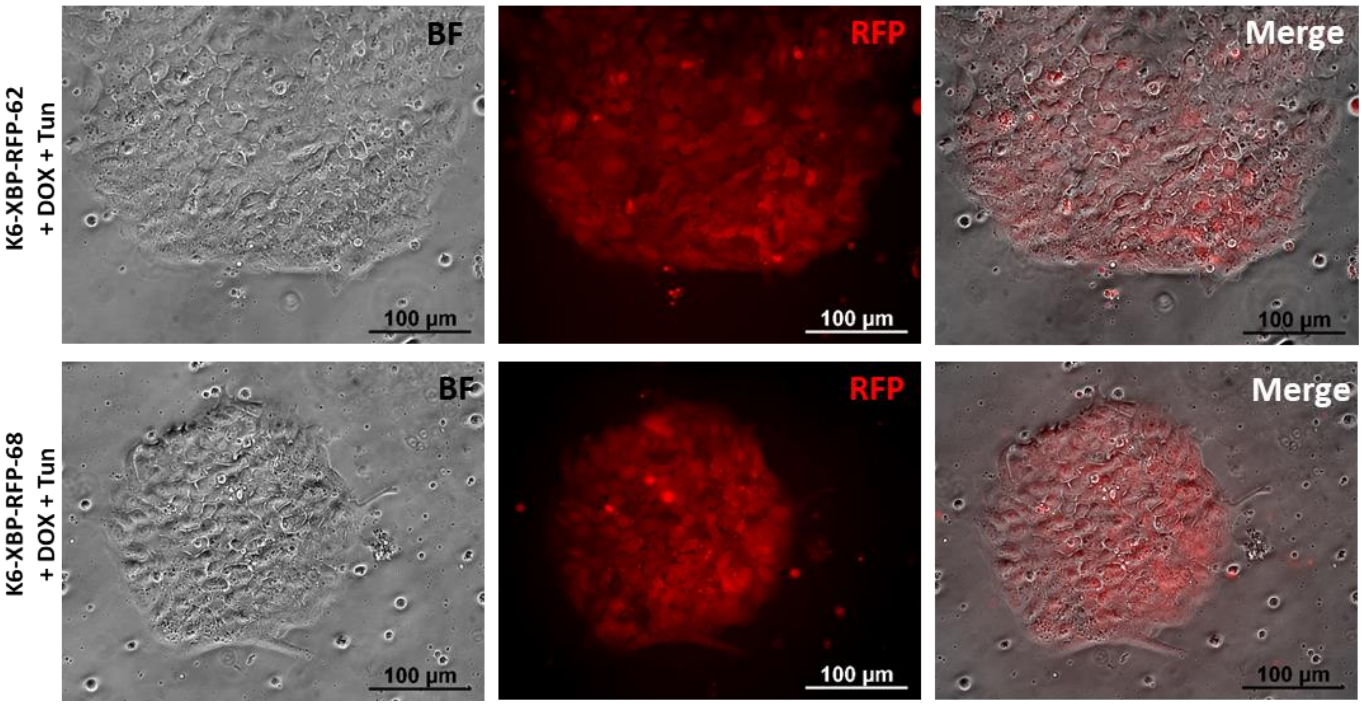


**Figure S4** Visualization of the XBP1-TagRFP biosensor in two transgenic iPSC lines (K6-XBP-RFP-62 and K6-XBP-RFP-68). The iPSCs were cultured on the Matrigel extracellular matrix in Essential 8 medium. The operation of the transgene is ensured by the addition of doxycycline to the culture medium. ER stress is induced by the addition of tunicamycin to the culture medium.

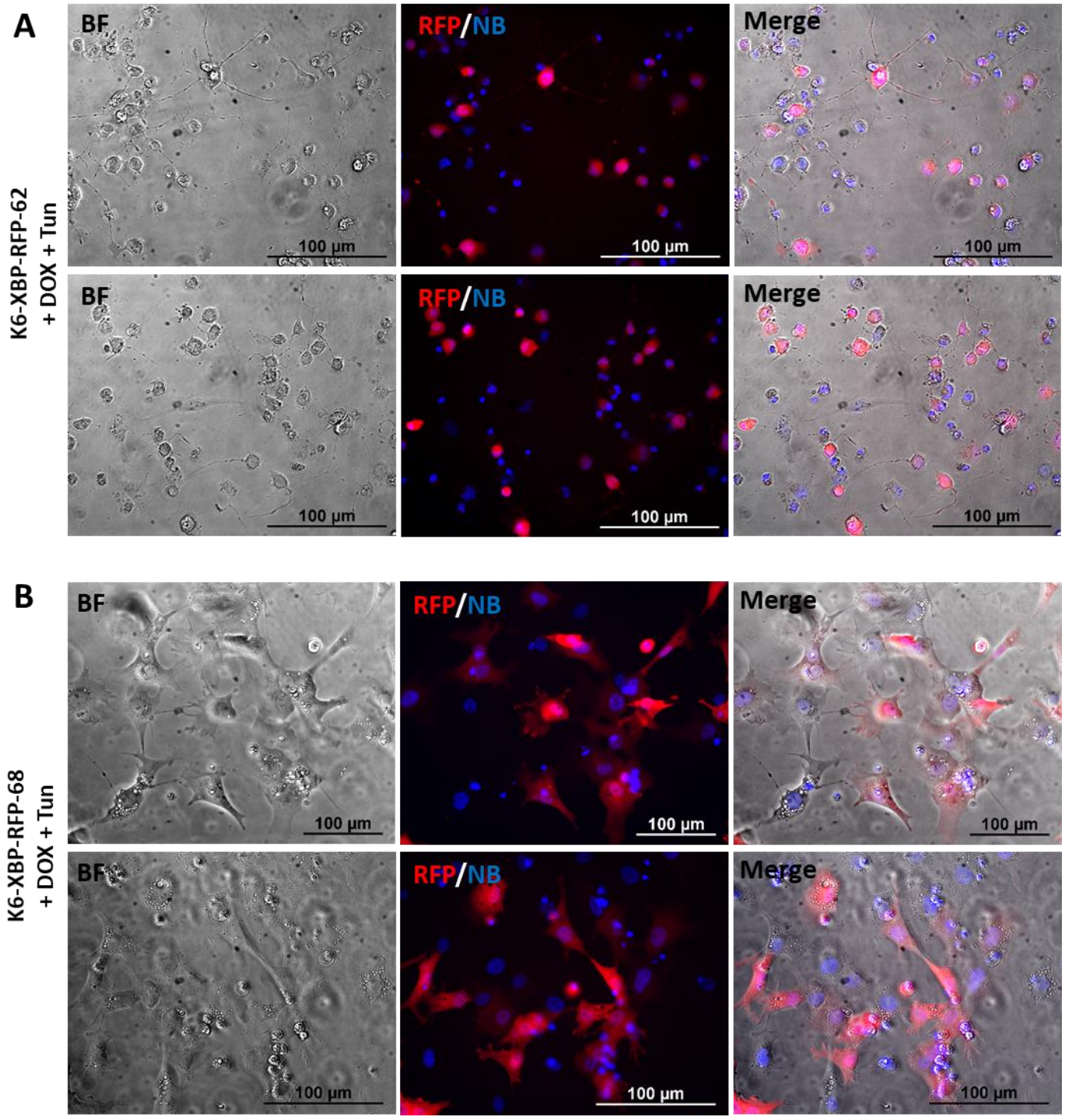


**Figure S5** Visualization of the XBP1-TagRFP biosensor in neural derivatives from K6-XBP-RFP iPSCs. (A) Subclone K6-XBP-RFP-62 differentiated into DA-like neurons. (B) Subclone K6-XBP-RFP-68 differentiated into astrocyte-like derivatives. Intravital staining of nuclei (blue signal) – NucBlue (NB) (Thermo Fisher Scientific, Waltham, MA, USA). BF – bright field. All scale bars: 100 µm.