



**Figure S1. Control experiments. (A) Replication of *PrP<sup>RES</sup>* at expenses of endogenous *PrP<sup>C</sup>* is required to increase the susceptibility to ER stress.** Two different Neuro2a clones were selected by their property to sustain replication of RML prions (N2a-RML) or that are resistant to replication (N2a-RML-Ins). Cells were exposed to RML scrapie prion and after several weeks in culture, they were treated with 12  $\mu$ M brefeldin A (Bref. A) or 40 nM A23187. After 48h cell viability was monitored using the MTS assay. Mean and standard deviation is presented of three determinations. **(B) Expression of a caspase-12 dominant negative mutant form protect against ER stress.** Left panel: Neuro2 cells were stably transfected with empty pCDNA.3 vector or an expression vector for a caspase-12 dominant negative (C289A) construct. Then, cell viability was monitored after exposure of cells to 12  $\mu$ M brefeldin A or 5  $\mu$ M thapsigargin for 48h using the MTS assay. Data represent mean and standard deviation of three determinations. Right panel: Expression levels of caspase-12 and actin are presented as controls. **(C) Thapsigargin treatment triggers passive related of ER calcium, not affected by inhibition of *IP<sub>3</sub>R*.** Neuro2a cells were loaded with Fluo-4 and cytosolic calcium signals were monitored in cells exposed to 10  $\mu$ M thapsigargin (arrow). Cells were pretreated or not with 1  $\mu$ M Xestospongine B (*IP<sub>3</sub>R* inhibitor) for 1h or 50  $\mu$ M dantrolen (R<sub>YR</sub> inhibitor) for 30 min. All determinations were performed in the absence of extracellular calcium. A representative experiment is presented.