Identification of small molecules that protect pancreatic β cells against endoplasmic reticulum stress-induced cell death

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Supplementary Figure 1. Hit compounds do not increase β cell ATP levels by inducing cell proliferation.

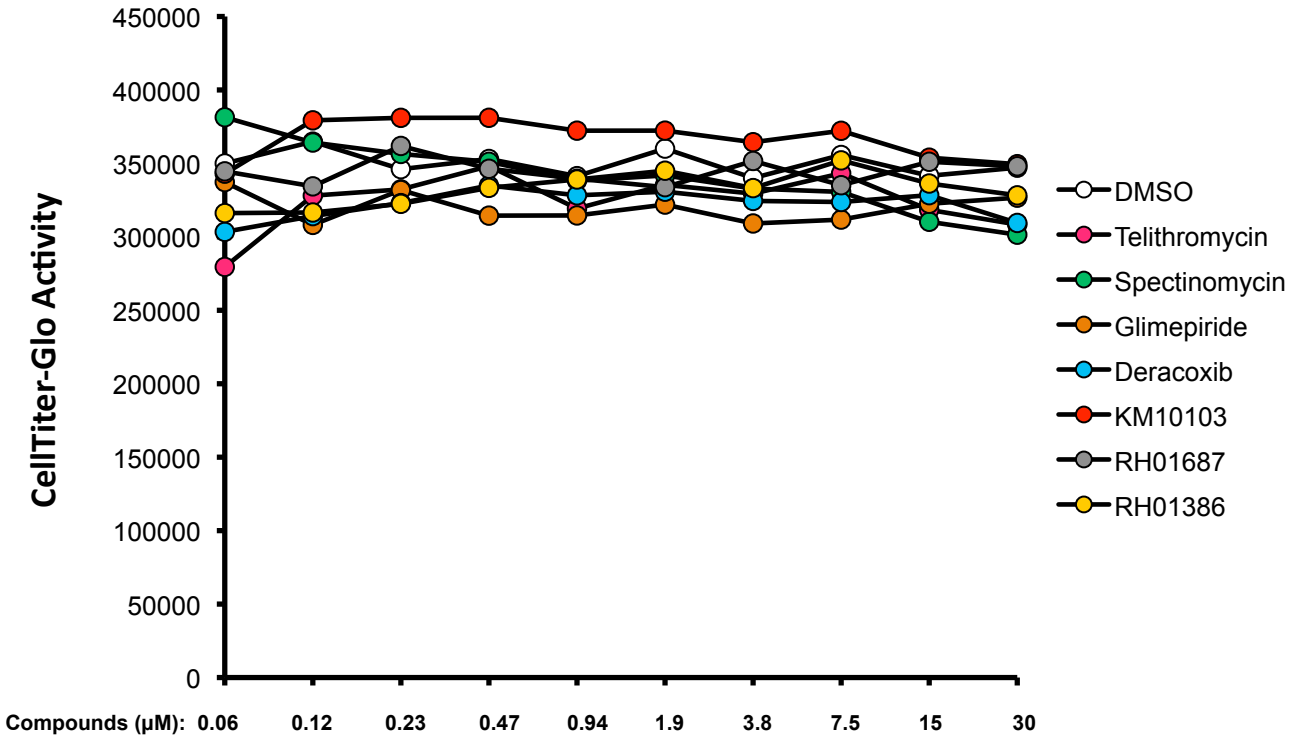
βTC6 cells were treated with the indicated concentrations of compounds for 7 days. Compounds were added on day 1 and again on day 4. Total ATP levels were measured after 7 days as a surrogate for cell number.

Supplemental Figure 2: Hit compounds protect human β cells against ER stress-induced death.

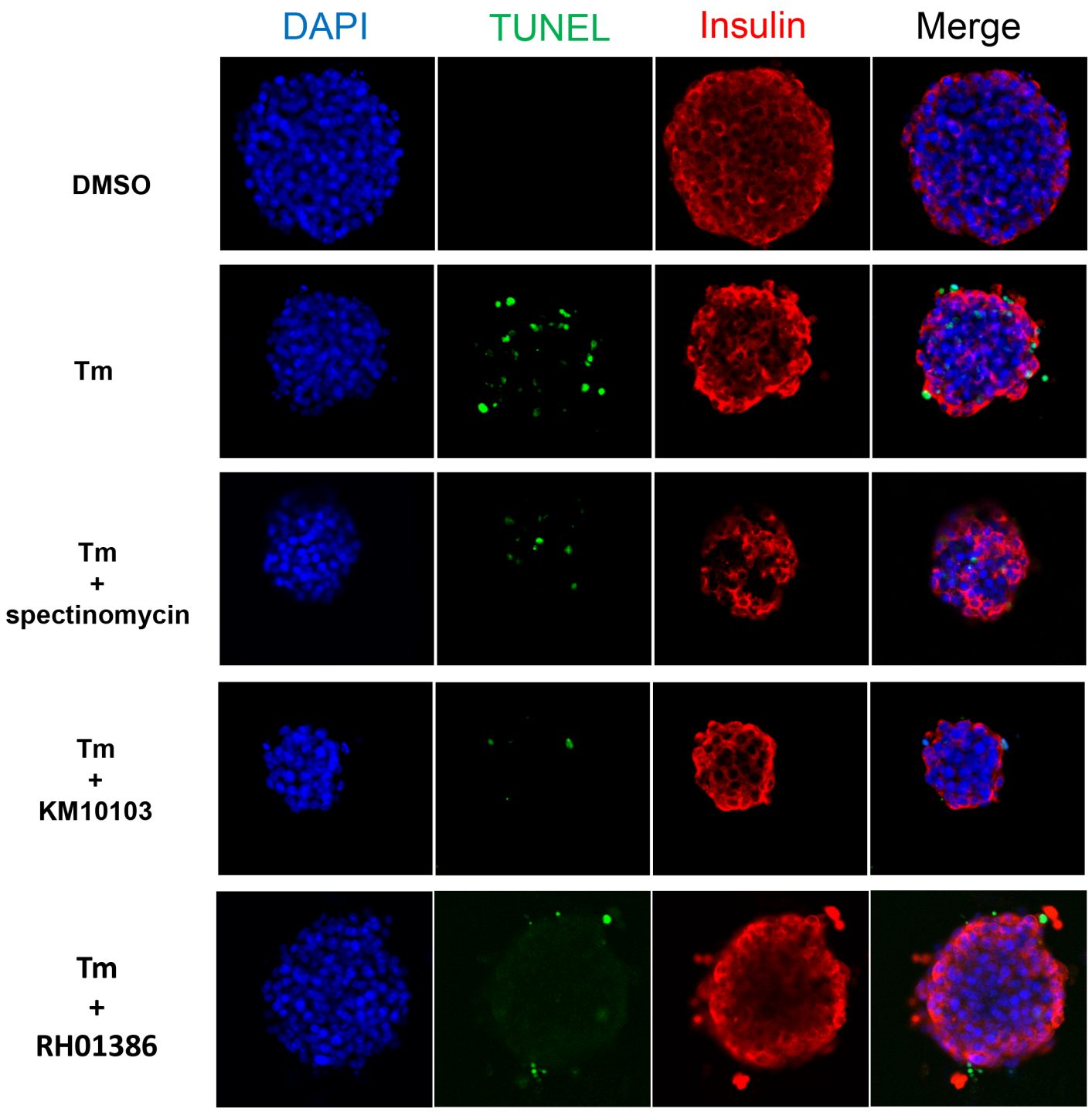
TUNEL staining in primary human islets. Primary human islets were treated with 0.75 μg/mL Tm and 20 μM of the indicated compounds for 72 h before TUNEL staining. Anti-insulin antibody was used to mark insulin^{+} β cells, and DAPI as nuclear marker. Tm treatment induced TUNEL staining, which was mitigated or abolished by hit compound treatment.

Supplementary Figure 3. Known modulators of ER stress do not protect β cells against ER stress.

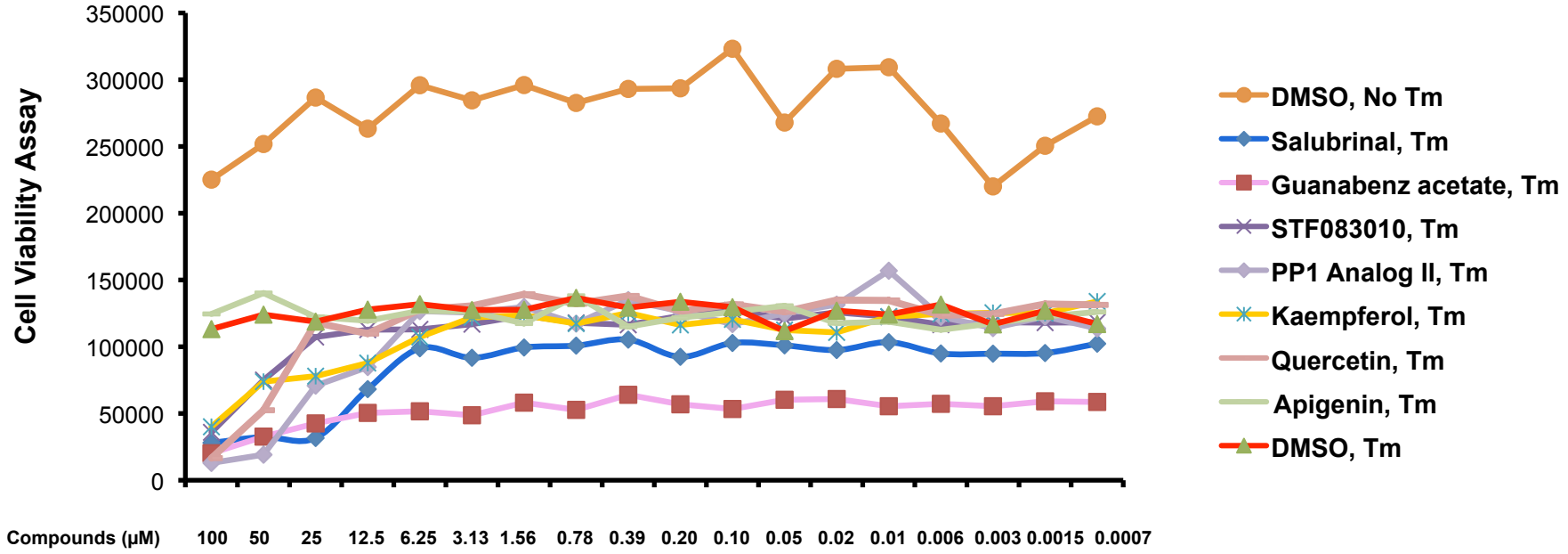
βTC6 cells were treated with 0.35 μg/mL of Tm and the indicated concentrations of seven known ER stress modulators (salubrinal, guanabenz acetate, STF083010, PP1 Analog II, kaempferol, quercetin, and apigenin) in ten 2-fold serial points at concentrations of from 0.007 to 100 μM for 72 h before measurement of cellular ATP levels.



Supplemental Figure 1



Supplemental Figure 2



Supplemental Figure 3