**SUPPLEMENTAL FIGURE LEGENDS**

**Supplemental Figure 1.** Palmitoleate (PO) attenuates palmitate (PA) mediated apoptosis in dose dependent manner. (A) Huh-7 cells were treated with either vehicle, 800 µM palmitic acid (PA) together with 0-400 µM PO, or 400 µM PO alone for 24 hours. Apoptosis was assessed by morphological criteria after DAPI staining. Error bars depict ± SEM from 3 independent experiments, each performed in triplicate.

**Supplemental Figure 2.** PO attenuates stearic (SA) acid mediated apoptosis and caspase 3/7 activity. (A) Cells were treated with either vehicle, 800 µM SA, 800 µM SA with 400 µM PO, or 400 µM PO alone for 24 hours. Apoptosis was assessed by morphological criteria after DAPI staining. Error bars depict ± SEM from 3 or more independent experiments, each performed in triplicate. (B) After Huh-7 cells were treated as (A), activity of effector caspases 3 and 7 was measured by a fluorogenic assay. Data are expressed as fold-increase of relative fluorescence units (RFLU) over control value (untreated cells), which was arbitrarily set to 1, and represent the mean ± SEM from 3 independent experiments, each performed in triplicate. * p<0.05, PA treated cells vs PA and PO treated cells.

**Supplemental Figure 3.** PO inhibits PA induced induction of GADD34. Huh-7 cells were incubated with either vehicle (Veh), 800 µM palmitate (PA), 800 µM PA plus 400 µM PO, or 400 µM PO alone for 8 hours. GADD34 mRNA was quantified by real time PCR. Fold induction was determined by normalization to 18 S. Data represent the mean and error of 3 independent experiments, each performed in triplicate. * p < 0.05, PA treated cells vs PA plus PO treated cells.
Supplemental figure 4. *PO does not attenuate thapsigargin induced CHOP induction.* In the left panel, Huh-7 cells were treated with vehicle (Veh), 500 µM thapsigargin (Tg), 400 µM PO plus thapsigargin, or PO alone. In right panel, Huh-7 cells were treated with vehicle, 10 µg/ml tunicamycin (Tm), 400 µM PO plus tunicamycin, or PO alone. CHOP mRNA was quantified by real time PCR. Fold induction was determined by normalization to 18S. Data represent the mean ± SEM of 3 independent experiments, each performed in triplicate.