**Supplementary material**

* *Western blotting: additional information*

Few adaptations were made to improve the separation of some proteins of interest.

Some biomarkers, such as p62, XBP1, pPERK, PERK, peIF, eIF and SIRT1 were examined on 10% bis-acrylamide gels, using GAPDH as a loading control. CASP-3, CHOP, LC3-I and LC3-II were examined on 15% bis-acrylamide gels to facilitate the separation of low molecular weight protein, using GAPDH as a loading control. On the other hand, 4-HNE, DGAT1, CPT1a, pAMPK and AMPK were examined on 8% bis-acrylamide gels, which made it difficult to separate proteins with lower molecular weights. In these gels, we used B-actin as a loading control due its increased molecular weight (42 kDa) compared to GAPDH (37 kDa), which allowed better protein separation. Thus, the loading control was standardized according to the protein of interest.

Before use in blots, GAPDH and beta actin were tested. Densitometric analyzes of the bands were performed on the same gel using the image J software and for statistical analysis, Student's t test was used. As no significant variation was identified between experimental groups, both proteins can be considered good loading controls.

To improve the use of the membranes, they were cut into some fragments. We used a stripping protocol to analyze total and phosphorylated proteins, as well as to evaluate proteins with similar molecular weights (such as, beta actin for 4-HNE incubation and eIF2α for GAPDH incubation).