## Supplementary Material

In the Table1 we reported the m/z and the identity of the most representative ion positive peaks of lipid extracted of the medium of H9c2.

**Table 1:** Assignments of the m/z ratios detected in the positive ion mass spectra of the lipid extracts in the growth medium of HG-H9c2 (44mM glucose) and THG-H9c2 (44 mMglucose+TMAO 50  $\mu$ M) cells before and after treatment with Tau 0.5 $\mu$ g/ $\mu$ L.

m/z	Identity
353.1±1	C-16 Sph1P
381.3±1	C-18 Sph1P
449±1	d18: 1 sphingoid base and phosphocholine headgroup
709±1	Sphingomyelin (SM)
685±1	Phosphoethanolamine-Cer (PE-Cer)
783±1	1-Phospho-(1'-myo-inositol)-Cer(d18:0/16:0)
1111±1	MIPC(N-(hexacosanoyl)-eicosasphinganine-1-O-[D-mannopyranosyl-alpha1-2-myo- inositol-1-phosphate]
1200±1	PIM2 (2'-O-(alpha-D-Manp)-6'-O-(alpha-D-Manp)-(1-(9Z,12Z-nonadecadienoyl)-2- (9Z-octadecenoyl)-sn-glycero-3-phospho-1'-myo-inositol)
1368±1	Glu/Gal-Ceramide