

Figure S1. Transient effects of FA and OA on mitochondrial metabolism and intracellular  $Ca^{2+}$  stores of immature oocytes.

Example trace of mitochondrial FAD autofluorescence signal in immatures GV stage oocytes after adding 200  $\mu$ M PA (A) or 200  $\mu$ M OA (B). The occytes were then subjected to induction of maximum reduction (2 mM cyanide) followed by subsequent maximum oxidation (1  $\mu$ M FCCP). Data represent multiple eggs (n = 19 or 21 for PA or OA condition respectively), using four mice trials. In part C and D immatures GV stage oocytes were injected with a mixture OGBD and Alexa594 for ratio-metric fluorescent measure of intracellular Ca<sup>2+</sup> store. The example trace showed the Ca<sup>2+</sup> response of the oocyte after adding 200  $\mu$ M PA (C) or 200  $\mu$ M OA (D). For both experiments, thapsigargin (10 $\mu$ M) was then added to induce a transient Ca<sup>2+</sup> response. Data represent multiple oocytes (n = 11 or 18 for PA or OA condition respectively), from four independent trials.