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Transient contraction of mitochondria induces depolarization through the inner membrane dynamin OPA1 -- Hakjoo Lee and Yisang Yoon

Supplementary movie legends

Movie 1. TMRE flickering in DLP1-KO MEFs. Wild type and DLP1-KO MEFs were labeled with TMRE and subjected to time-lapse imaging. Images were acquired at every 10 seconds. Movie plays at 5 frames/sec.

Movie 2. Transient contraction of mitochondria tubules in DLP1-KO MEFs. Mitochondrial matrix-targeted GFP was expressed in DLP1-KO MEFs and subjected to time-lapse imaging (10-second intervals). Movie plays at 1.5 frames/sec.

Movie 3. Precise coincidence of mitochondrial contraction and TMRE loss. TMRE and GFP dual time-lapse imaging (10-sec intervals) of mitochondria in DLP1-KO cells. Movie plays at 2 frames/sec.

Movie 4. Mitochondrial contraction precedes TMRE loss. TMRE and GFP dual time-lapse imaging of mitochondria in DLP1-KO cells. Images were acquired at every second. Movie plays at 5 frames/sec.

Movie 5. Mitochondrial contraction-depolarization coupling in normal H9c2 cells. TMRE and GFP dual time-lapse imaging (10-sec intervals) of mitochondria in H9c2 cells. Both complete and partial losses of TMRE are associated with mitochondrial contraction. Movie plays at 2 frames/sec.

Movie 6. Prominent mitochondrial contractions in H9c2 expressing DLP1-K38A. TMRE and GFP dual time-lapse imaging of mitochondria in H9c2 cells expressing DLP1-K38A. Images were acquired at 10-second intervals. Movie plays at 2 frames/sec.

Movie 7. Antimycin A diminishes TMRE flickering in DLP1-KO MEFs. DLP1-KO MEFs were labeled with TMRE and subjected to time-lapse imaging (10-sec intervals). Antimycin A was added at the frame 21. Movie plays at 5 frames/sec.

Movie 8. Combination of pyruvate and oligomycin increases TMRE flickering in DLP1-KO MEFs after nutrient starvation. DLP1-KO MEFs were nutrient-starved and labeled with TMRE for time-lapse imaging (10-sec intervals). Pyruvate/oligomycin was added at the frame 20. Movie plays at 7 frames/sec.

Movie 9. OPA1 silencing diminishes TMRE flickering in DLP1-KO MEFs. DLP1-KO MEFs stably expressing OPA1 shRNA were labeled with TMRE and subjected to time-lapse imaging. Images were acquired at every 10 seconds. Movie plays at 5 frames/sec.

Movie 10. OPA1 silencing uncouples mitochondrial contraction and depolarization. TMRE and GFP dual time-lapse imaging (10-sec intervals) of mitochondria in OPA1-KD/DLP1-KO cells. TMRE is retained in mitochondria during contractions. Movie plays at 2 frames/sec.