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SUPPLEMENTARY DATA

Supplementary Movie S1 Z-scan image series of a mouse blastocyst. Nicotinamide adenine dinucleotide (NADH) fluorescence lifetime imaging microscopy (FLIM) intensity images are pseudo-colored blue on the left, and corresponding flavin adenine dinucleotide (FAD) images are pseudo-colored green on the right. Z-planes are spaced 2 μm apart, and images are played at 8 frames/second. Bar is 25 μm.

Supplementary Movie S2 Z-scan image series of a mouse 1-cell embryo. NADH FLIM intensity images are pseudo-colored blue on the left, and corresponding FAD images are pseudo-colored green on the right. Z-planes are spaced 2 μm apart, and images are played at 8 frames/second. Bar is 25 μm.

Supplementary Movie S3 Time lapse image series of a one-cell mouse embryo undergoing the first mitotic division. NADH intensity is displayed in grayscale, and second harmonic generation imaging (SHG) imaging of the spindle and zona pellucida are overlaid in magenta. Frames are 20 min apart, played at 4 frames/s. Bar is 25 μm.

Supplementary Movie S4 Time lapse image series of $n = 8$ oocytes being exposed to oxamate (10 mM) and rotenone (1 μM) in series. NADH FLIM intensity images are pseudo-colored blue on the left, and corresponding FAD images are pseudo-colored green on the right with SHG of spindles overlaid in magenta. Oxamate causes a drop in cytosolic NADH intensity. Rotenone causes an increase in NADH intensity and a decrease in FAD intensity. Oxamate does not disrupt the spindle, but rotenone causes it to dissociate. Text annotations indicate frames of chemical exposures. Frames are 4 min apart, played at 3 frames/s. Bar is 50 μm.

Supplementary Movie S5 Time lapse image series of mouse embryos developing on-stage from the one-cell to blastocyst stages. NADH FLIM intensity images are pseudo-colored blue on the left, and corresponding FAD images are pseudo-colored green on the right. Frames are 2 h apart, played at 3 frames/s. Bar is 50 μm.