

Supporting information

Quantum sensing of free radical generation in mitochondria of single heart muscle cells during hypoxia and reoxygenation

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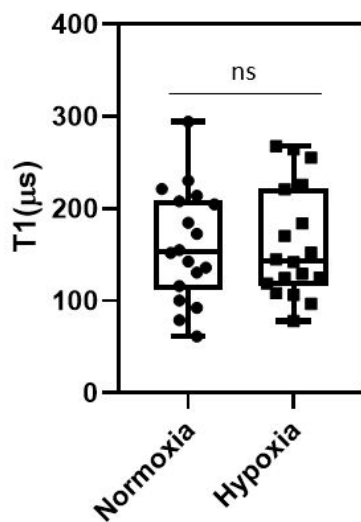


Figure S1 To see the effect of O_2 to T1 magnetometry, Bare FND was used to do T1 measurement in normoxia and hypoxia-treated medium, respectively. Whiskers represent min and max values. Data between each group were analyzed by t-test analysis: ns=no significant difference.

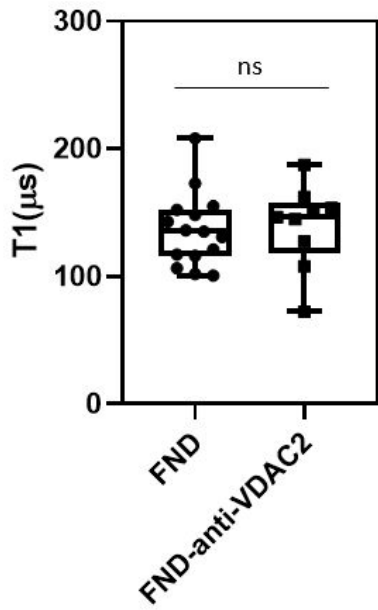


Figure S2 T1 measurement of bare FND and FND-anti-VDAC2. Data between each group were analyzed by t-test analysis: ns=no significant difference.

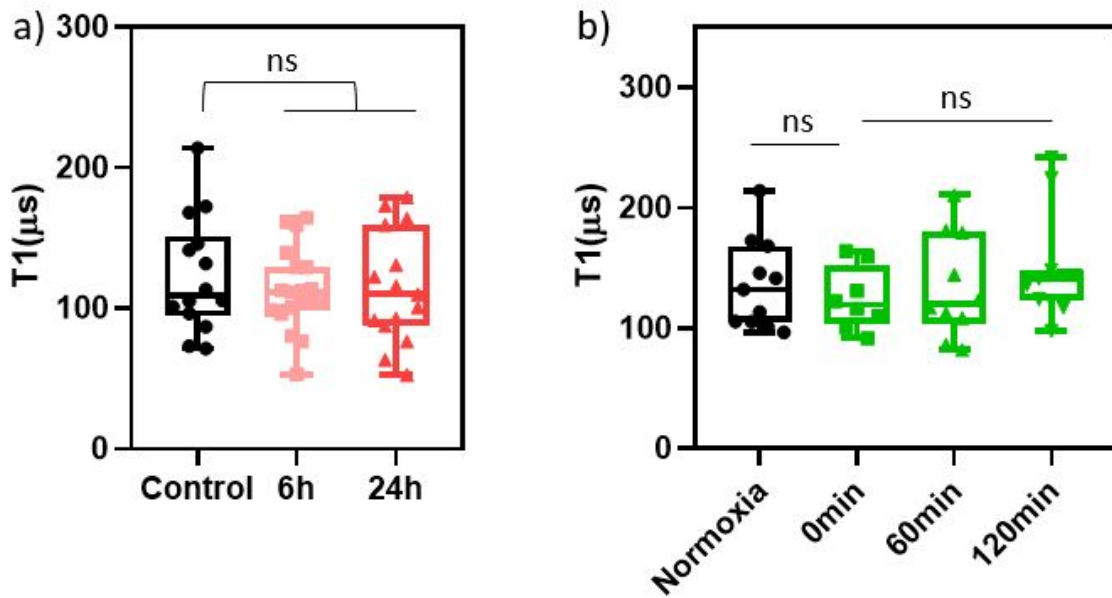


Figure S3 Non-targeted bare FNDs were used to do T1 measurement in H9c2 cells under a) different hypoxic conditions and b) different reoxygenation conditions. Data between each group were analyzed by one-way-anova analysis: ns=no significant difference.

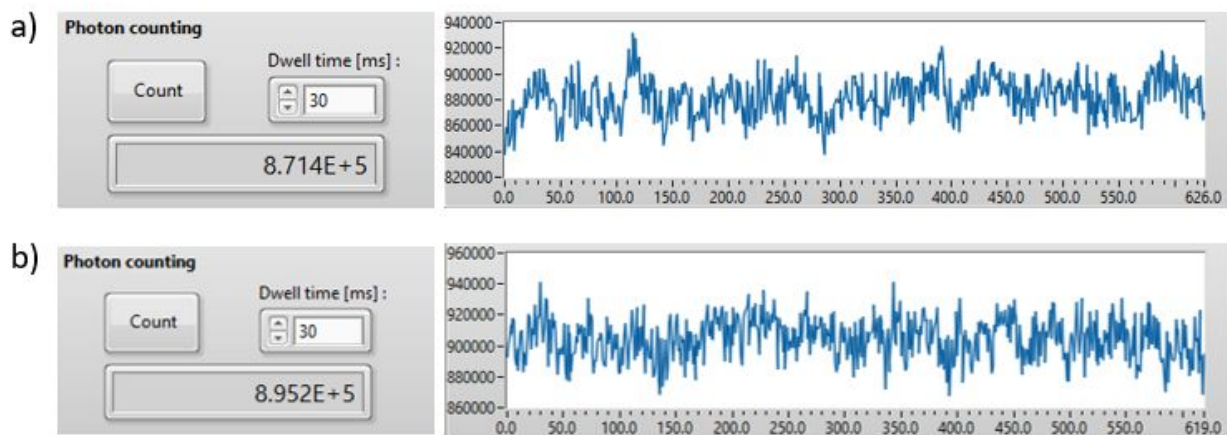


Figure S4 Representative photostability test of a single nanodiamond . x axis: time (s/100), y axis: The counted photons. a) Before T1 measurement; b) after 3h T1 measurement. The recorded photon numbers remained stable within the tracking window. Also, after 3h of T1 measurement, the photon numbers didn't decrease, which indicated the photostability of nanodiamonds.

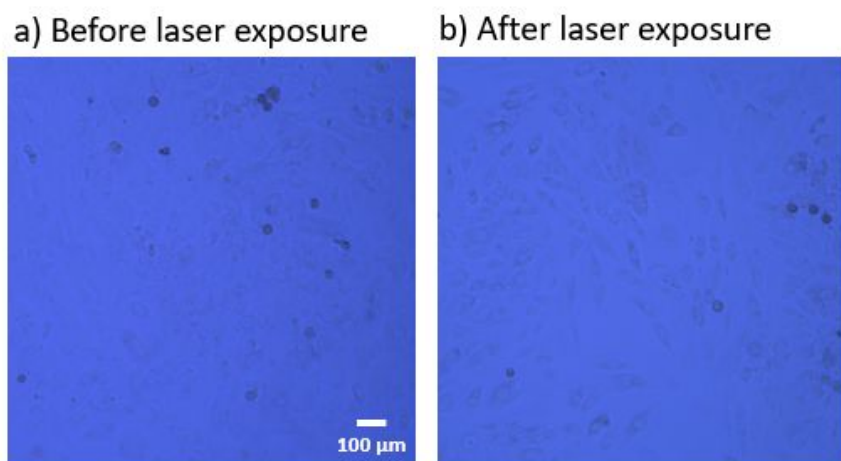


Figure S5 Images of 1% trypan blue stained H9c2 cells a) before and b) after the 50 μ W laser exposure over a period of 3 hours. No significant cell death was observed in the groups after laser exposure.