



Sup. 1 The Raman image and spectra of RGC-5 cells using 589 nm excitation light. The Raman image on the left is constructed by the very weak 750 cm<sup>-1</sup> peak as labelled in the spectra on the right. Even at where the cytochrome peaks are the strongest (the black arrow in the left figure and the solid spectra), the 750 cm<sup>-1</sup> peak and the other cytochrome peaks (labelled in green) are substantially weaker under 589 nm excitation than 532 nm excitation (Fig. 1F), indicating that these peaks are resonance-enhanced Raman bands from mitochondrial cytochromes. In this figure, we also provide the nucleus spectra of RGC-5 cells (dotted arrow in the left figure and dotted spectra) to prove that the nucleus spectra is the same both under 589 nm and 532 nm (Fig. 2) excitation.