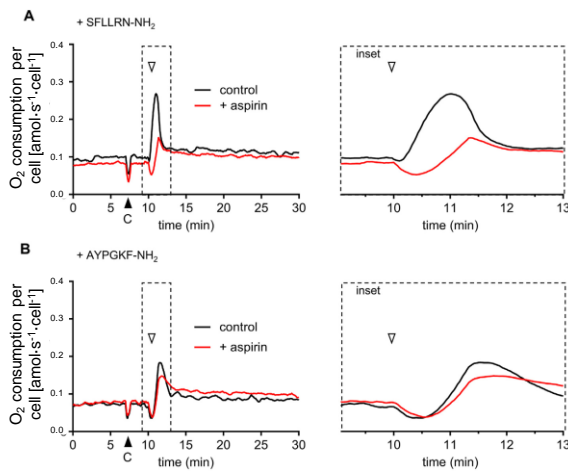


## Rapid kinetics of changes in oxygen consumption rate in thrombin-stimulated platelets measured by high-resolution respirometry

Alice P. Sowton <sup>a,b</sup>, Sarah L. Millington-Burgess <sup>a</sup>, Andrew J. Murray <sup>b</sup>, Matthew T. Harper <sup>a,\*</sup>



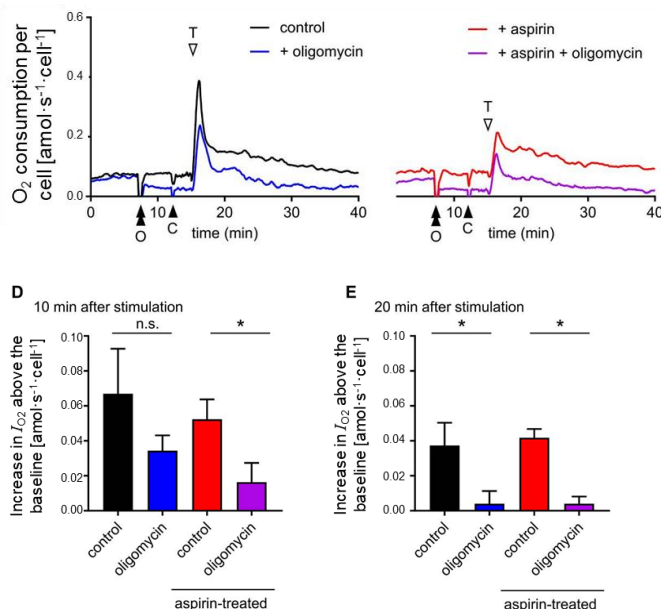
### High-resolution respirometry of platelets



**Figure 1.** Protease-activated receptor agonist peptides trigger a rapid increase in  $I_{O_2}$ . The traces represent the mean signal ( $n = 5$ ) for platelets treated with aspirin or vehicle control. The black and white arrowheads indicate respectively addition of  $CaCl_2$  and the agonist peptide (SFLLRN-NH<sub>2</sub>, a PAR1 agonist in A or AYPGKF-NH<sub>2</sub>, a PAR4 agonist in B). The dashed area is shown expanded as an inset panel to the right.

**High-resolution respirometry can be used to investigate the kinetics of changes in  $O_2$  consumption rate in stimulated platelets, across a timescale that is relevant to the rapid activation of platelets**

### High-resolution respirometry and transient increase of respiration in platelets



**Fig. 2.** Oligomycin inhibits  $O_2$  flow ( $I_{O_2}$ ) in unstimulated and stimulated platelets. The traces show mean signal ( $n = 5$ ) from control platelets (DMSO 0.1%) or aspirin-treated (300 mM). The platelets were treated with oligomycin (2.5 mM) or its vehicle (ethanol, 0.05%) as control (double black arrowhead, 'O').  $CaCl_2$  was then added (black arrowhead, 'C') followed by thrombin (white arrowhead, 'T'). The increases in  $I_{O_2}$  10 or 20 min after thrombin addition are shown in D or E, respectively.

**Following stimulation of platelets,  $O_2$  is rapidly consumed in a COX-dependent manner, as previously reported. However, the high-resolution of this approach shows that other pathways of  $O_2$  consumption are also rapidly activated**

Reference: Sowton AP, Millington-Burgess SL, Murray AJ, Harper MT (2018) Rapid kinetics of changes in oxygen consumption rate in thrombin-stimulated platelets measured by high-resolution respirometry. *Biochem Biophys Res Commun* 503:2721-27.

Text slightly modified based on the recommendations of the COST Action MitoEAGLE CA15203. [Doi:10.26124/mitofit:190001.v6](https://doi.org/10.26124/mitofit:190001.v6)

O2k-brief communicated by LF Garcia-Souza  
Oroboros Instruments