



## Mitochondrial 'flashes': a radical concept repHined

Submitted by Emmanuel Lemoine on Thu, 02/12/2015 - 13:11

Titre	Mitochondrial 'flashes': a radical concept repHined
Type de publication	Article de revue
Auteur	Schwarzländer, Markus [1], Murphy, Michael P [2], Duchen, Michael R. [3], Logan, David [4], Fricker, Mark D [5], Halestrap, Andrew P [6], Müller, Florian L [7], Rizzuto, Rosario [8], Dick, Tobias P. [9], Meyer, Andreas J [10], Sweetlove, Lee J [11]
Editeur	Elsevier
Type	Article scientifique dans une revue à comité de lecture
Année	2012
Langue	Anglais
Date	2012/10
Numéro	10
Pagination	503 - 508
Volume	22
Titre de la revue	Trends in Cell Biology
ISSN	0962-8924
Mots-clés	cpYFP [12], mitochondria [13], pH transients [14], superoxide flashes [15]
Résumé en anglais	Mitochondrial free radicals and redox poise are central to metabolism and cell fate. Their measurement in living cells remains a major challenge and their in vivo dynamics are poorly understood. Reports of 'superoxide flashes' in single mitochondria have therefore been perceived as a major breakthrough: single mitochondria expressing the genetically encoded sensor circularly permuted yellow fluorescent protein (cpYFP) display spontaneous flashes of fluorescence that are responsive to metabolic changes and stressors. We critically review the evidence that underpins the interpretation of mitochondrial cpYFP flashes as bursts of superoxide production and conclude that flashes do not represent superoxide bursts but instead are caused by transient alkalinisation of the mitochondrial matrix. We provide a revised framework that will help to clarify the interpretation of mitochondrial flashes.
URL de la notice	<a href="http://okina.univ-angers.fr/publications/ua7848">http://okina.univ-angers.fr/publications/ua7848</a> [16]
DOI	10.1016/j.tcb.2012.07.007 [17]
Lien vers le document	<a href="http://dx.doi.org/10.1016/j.tcb.2012.07.007">http://dx.doi.org/10.1016/j.tcb.2012.07.007</a> [17]

---

### Liens

- [1] [http://okina.univ-angers.fr/publications?f\[author\]=12563](http://okina.univ-angers.fr/publications?f[author]=12563)
- [2] [http://okina.univ-angers.fr/publications?f\[author\]=12564](http://okina.univ-angers.fr/publications?f[author]=12564)
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=21057](http://okina.univ-angers.fr/publications?f[author]=21057)

- [4] <http://okina.univ-angers.fr/david.logan/publications>
- [5] [http://okina.univ-angers.fr/publications?f\[author\]=12567](http://okina.univ-angers.fr/publications?f[author]=12567)
- [6] [http://okina.univ-angers.fr/publications?f\[author\]=12568](http://okina.univ-angers.fr/publications?f[author]=12568)
- [7] [http://okina.univ-angers.fr/publications?f\[author\]=12569](http://okina.univ-angers.fr/publications?f[author]=12569)
- [8] [http://okina.univ-angers.fr/publications?f\[author\]=12570](http://okina.univ-angers.fr/publications?f[author]=12570)
- [9] [http://okina.univ-angers.fr/publications?f\[author\]=12571](http://okina.univ-angers.fr/publications?f[author]=12571)
- [10] [http://okina.univ-angers.fr/publications?f\[author\]=11783](http://okina.univ-angers.fr/publications?f[author]=11783)
- [11] [http://okina.univ-angers.fr/publications?f\[author\]=12572](http://okina.univ-angers.fr/publications?f[author]=12572)
- [12] [http://okina.univ-angers.fr/publications?f\[keyword\]=12189](http://okina.univ-angers.fr/publications?f[keyword]=12189)
- [13] [http://okina.univ-angers.fr/publications?f\[keyword\]=984](http://okina.univ-angers.fr/publications?f[keyword]=984)
- [14] [http://okina.univ-angers.fr/publications?f\[keyword\]=12190](http://okina.univ-angers.fr/publications?f[keyword]=12190)
- [15] [http://okina.univ-angers.fr/publications?f\[keyword\]=12191](http://okina.univ-angers.fr/publications?f[keyword]=12191)
- [16] <http://okina.univ-angers.fr/publications/ua7848>
- [17] <http://dx.doi.org/10.1016/j.tcb.2012.07.007>

Publié sur *Okina* (<http://okina.univ-angers.fr>)