

Contents

Symposium on New perspectives on mitochondrial biology, held at the Novartis Foundation, London, 28–30 November 2006

Editors: Derek J. Chadwick (Organizer) and Jamie Goode

This symposium is based on a proposal by Michael Duchen

David G. Nicholls Chair's introduction 1

Albert Neutzner, Richard J. Youle and Mariusz Karbowski
Outer mitochondrial membrane protein degradation by the proteasome 4
Discussion 14

Sarah E. Haigh, Gilad Twig, Anthony A. J. Molina, Jakob D. Wikstrom, Motti Deutsch and Orian S. Shirihai PA-GFP: a window into the subcellular adventures of the individual mitochondrion 21
Discussion 36

Luca Scorrano Multiple functions of mitochondria-shaping proteins 47
Discussion 55

Bruce M. Spiegelman Transcriptional control of mitochondrial energy metabolism through the PGC1 coactivators 60
Discussion 63

Charles Affourtit, Paul G. Crichton, Nadeene Parker and Martin D. Brand
Novel uncoupling proteins 70
Discussion 80

Cecilia Giulivi Mitochondria as generators and targets of nitric oxide 92
Discussion 100

György Hajnóczky, Masao Saotome, György Csordás, David Weaver and Muqing Yi Calcium signalling and mitochondrial motility 105
Discussion 117

- Anna Romagnoli, Paola Aguiari, Diego De Stefani, Sara Leo, Saverio Marchi, Alessandro Rimessi, Erika Zecchini, Paolo Pinton and Rosario Rizzuto** Endoplasmic reticulum/mitochondria calcium cross-talk 122
Discussion 131
- Brian O'Rourke, Sonia Cortassa, Fadi Akar and Miguel Aon** Mitochondrial ion channels in cardiac function and dysfunction 140
Discussion 152
- Paolo Bernardi and Michael Forte** The mitochondrial permeability transition pore 157
Discussion 164
- Dominic James, Philippe A. Parone, Olivier Terradillos, Safa Lucken-Ardjomande, Sylvie Montessuit and Jean-Claude Martinou** Mechanisms of mitochondrial outer membrane permeabilization 170
Discussion 176
- M. Flint Beal** Mitochondria and neurodegeneration 183
Discussion 192
- Mügen Terzioglu and Nils-Göran Larsson** Mitochondrial dysfunction in mammalian ageing 197
Discussion 208
- Eric A. Schon and Salvatore DiMauro** Mitochondrial mutations: genotype to phenotype 214
Discussion 226
- Contributor Index** 234
- Subject index** 236