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## More than just the powerhouse of the cell?

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*More than just the powerhouse of the cell?*

Danielle M. Colussi

Mitochondria are energy providing, cell fate deciding organelles with a yet to be fully understood signaling complexity. Calcium, the mineral we are told to consume to 'grow big and strong', is also a universal signalling atom within the body. Entry of ionized calcium ( $\text{Ca}^{2+}$ ) into mitochondria is tightly controlled through the mitochondrial  $\text{Ca}^{2+}$  uniporter (MCU) protein complex because it regulates key enzymes involved in energy production and can signal cell death. The MCU complex has an inhibitory subunit (MCUb), which lies at the heart of my research. How the structure and function of MCUb changes in normal and dysfunctional health is poorly understood, yet this question surrounds numerous diseases ranging from heart disease to cancer. This one small protein holds so much undiscovered promise for understanding physiology and disease and for therapeutic development. My work aims to power scientific discovery through studying unique aspects of the powerhouse of the cell.