



nature publishing group



► **COVER:** 'Powerhouse' by Simon Bradbrook, inspired by the Review on p389.



LUCY BIRD



OLIVE LEAVY



KIRSTY MINTON



YVONNE BORDON



MARIA PAPTRIANTAFYLLO

We hope that regular readers will have been inspired by our content to read an article outside the 'comfort zone' of their normal area of interest. This blurring of the boundaries between research disciplines has led to huge new fields of

interest, such as immunometabolism. Of course, our physiological systems have been multitasking and sharing functions throughout evolutionary history.

Mitochondria provide a prime example of this. Recent research has added immunology to the metabolic and cell death interests of these intracellular organelles. As Sankar Ghosh and colleagues discuss on p389, mitochondria also function as signalling platforms and sources of reactive oxygen species for the coordination of innate immune responses to viruses and bacteria with the energy requirements of mounting an immune response and the necessity to regulate programmed cell death.

On p427, Erica Herzog and colleagues propose that fibrocytes should be given greater attention in the study of chronic inflammation. These mesenchymal cells are derived from monocyte precursors and share the pro-inflammatory properties of macrophages and the pro-fibrotic properties of fibroblasts. The association of fibrocytes with disorders such as autoimmunity and asthma has not yet been defined at the functional level, and the authors suggest that these 'boundary-pushing' cells warrant further study.

Nearly two decades ago, it was discovered that sphingosine-1-phosphate (S1P) can regulate cellular proliferation in response to external stimuli. Since then, study of this signalling molecule in the immune system has shown that it has important roles in controlling lymphocyte trafficking. New research is now hinting that S1P might have broader 'interests', in that it can also function as an intracellular second messenger and as part of a nuclear co-repressor complex (p403).

EDITORIAL OFFICES

LONDON NatureReviews@nature.com
The Macmillan Building, 4 Crinan Street,
London N1 9XW, UK

Tel: +44 (0)20 7843 3620;
Fax: +44 (0)20 7843 3629

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MANAGEMENT OFFICES

LONDON nature@nature.com

The Macmillan Building, 4 Crinan Street,
London N1 9XW, UK

Tel: +44 (0)20 7833 4000;

Fax: +44 (0)20 7843 4596/7

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NEW YORK nature@natureny.com

Nature Publishing Group,

75 Varick Street, 9th floor, New York,

NY 10013-1917, USA

Tel: +1 212 726 9200;

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Tel: +81 3 3267 8751; Fax: +81 3 3267 8746

ASIA-PACIFIC PUBLISHER: Antoine E. Bocquet

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Tel/Fax: +91 11 2324 4186

SALES AND MARKETING MANAGER, INDIA:

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