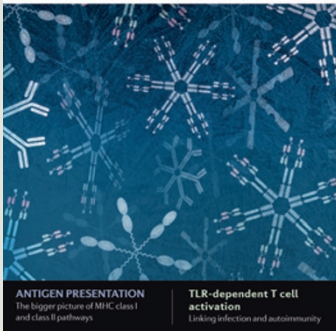




nature publishing group

nature
REVIEWSDecember 2011 volume 11 no. 12
www.nature.com/reviews

IMMUNOLOGY

ANTIGEN PRESENTATION
The bigger picture of MHC class I
and class II pathwaysTLR-dependent T cell
activation
Linking infection and autoimmunity

► **COVER:** 'Snowfall' by Simon Bradbrook, inspired by the Reviews in this issue.



LUCY BIRD



OLIVE LEAVY



KIRSTY MINTON



YVONNE BORDON



MARIA PAPTRIANTAFYLLOU

'T was the night before Christmas, and deep in the house
There were trillions of creatures astir in the mouse.
The immune system handled the microbes with care;
PGRPs would soon see them there. (p837)

The T cells were nestled all snug in their node;
An influx of DCs made their numbers explode.
On MHC molecules, thanks partly to TAP,
Peptides had settled to prompt an attack. (p823)

When in the lymph node there arose such a clatter,
CTLA4 tried to resolve this matter. (p852)

But the activated T cells flew like a flash,
Tore into the microbes and turned them to mash.

The systems biology tools we now know
Show the lustre of all the immune cells below. (p873)

But when to our wondering eyes will appear
The vaccines we need for the century now here? (p865)

The little old driver was lively and quick;
I was startled to learn that he was arthritic.
More rapid than eagles his symptoms they came;
Did TLR triggering of T cells bring pain? (p807)

A wink of his eye and a twist of his head
Soon gave me to know all our Highlights he'd read.

So now, from the team, 'fore we leave to go write,
"Happy Christmas to all, and to all a good-cite!"

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

CHIEF EDITOR: Lucy Bird

ACTING CHIEF EDITOR: Olive Leavy

SENIOR EDITOR: Kirsty Minton

ASSOCIATE EDITORS: Yvonne Bordon,

Maria Papatriantafyllou

COPY EDITOR: Isabel Woodman

SENIOR COPY EDITORS: Yukie Ozawa,

Catriona Rodwell, Man Tsuey Tse, Lucie Wootton

COPY EDITING MANAGER: Lewis Packwood

ART EDITOR: Simon Bradbrook

ART CONTROLLER: Susanne Harris

SENIOR ART EDITORS: Vicky Summersby,

Patrick Morgan, Kirsten Lee

MANAGING PRODUCTION EDITOR:

Judith Shadwell

SENIOR PRODUCTION EDITOR: Simon Fenwick

PRODUCTION CONTROLLER: Natalie Smith

SENIOR EDITORIAL ASSISTANT: Laura Corrs

EDITORIAL ASSISTANT: Ella Lines

WEB PRODUCTION MANAGER: Deborah Anthony

MARKETING MANAGERS: Tim Redding,
Leah Rodriguez

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

OFFICE MANAGER: Laura Lee

MANAGING EDITOR: Suzanne Farley

PUBLISHER: James Butcher

MANAGING DIRECTOR: Steven Inchcoombe

EDITOR-IN-CHIEF, NATURE PUBLICATIONS:

Philip Campbell

ASSOCIATE DIRECTORS: Jenny Henderson,

Dominic Pettit

EDITORIAL PRODUCTION DIRECTOR:

James McQuat

PRODUCTION DIRECTOR:

Yvonne Strong

DIRECTOR, WEB PUBLISHING:

Dan Pollock

HEAD OF WEB PRODUCTION:

Alexander Thurrell

NEW YORK nature@natureny.com

Nature Publishing Group,

75 Varick Street, 9th floor, New York,

NY 10013-1917, USA

Tel: +1 212 726 9200;

Fax: +1 212 696 9006

CHIEF TECHNOLOGY OFFICER:

Howard Ratner

HEAD OF INTERNAL SYSTEMS DEVELOPMENT:

Anthony Barrera

HEAD OF SOFTWARE SERVICES:

Luigi Squillante

GLOBAL HEAD OF ADVERTISING AND

SPONSORSHIP: Dean Sanderson

HEAD OF NATURE RESEARCH & REVIEWS

MARKETING: Sara Girard

TOKYO nature@natureasia.com

Chiyoda Building 5F, 2-37-1 Ichigayatamachi,

Shinjuku-ku, Tokyo 162-0843, Japan

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

ASIA-PACIFIC PUBLISHER: Antoine E. Bocquet

MANAGER: Koichi Nakamura

ASIA-PACIFIC SALES DIRECTOR:

Kate Yoneyama

SENIOR MARKETING MANAGER:

Peter Yoshihara

MARKETING/PRODUCTION MANAGER:

Takesh Murakami

INDIA 5A/12 Ansari Road, Daryaganj,

New Delhi 110 002, India

Tel/Fax: +91 11 2324 4186

SALES AND MARKETING MANAGER, INDIA:

Harpal Singh Gill

Copyright © 2011 Nature Publishing Group

Research Highlight images courtesy of

Getty Images unless otherwise credited.

Printed in Wales by Cambrian Printers

on acid-free paper