

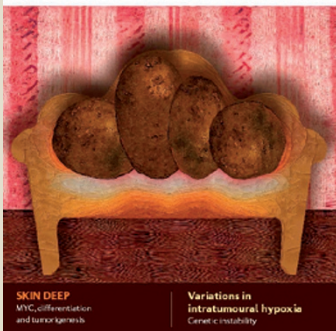


nature publishing group

nature
REVIEWS

MARCH 2008 | VOLUME 8 | 157

CANCER

SKIN DEEP
MYC differentiation
and tumor growthVariations in
intratumoural hypoxia
affect metastasis

► COVER: 'Couch potatoes' by Manuel Enriquez Ramirez, inspired by the Review on p205.



EZZIE HUTCHINSON



NICOLA MCCARTHY



SARAH SETON-ROGERS



GEMMA ALDERTON

Since the isolation of the MYC oncogene in the early 1980s, numerous concepts that try to explain how this transcription factor contributes to tumorigenesis in so many different types of cancer have been postulated. However, new ideas about MYC-dependent responses and how these might be involved in tumorigenesis are still emerging. For example, the focus of MYC research has primarily been its role as a transactivator of genes associated with cell proliferation, whereas recent data point toward activities of MYC that are independent of this role.

This current excitement surrounding MYC in the cancer research field has prompted us to produce a series of specially commissioned articles that discuss some of the key issues and new insights surrounding MYC and cancer — from strategies that target MYC-mediated tumorigenesis for therapeutic intervention to an expansion of the repertoire of signalling pathways that are induced downstream of MYC activation, such as DNA damage response signalling.

Key concepts implicit in the consideration of how MYC might function as an oncogene are also likely to be relevant to other oncogenes and transcription factors — for example, MYC target genes do not appear to change according to cell type, although the biological outcome does. Also, the strength and duration of MYC activation, which can be regulated in part by MYC cofactors, can also determine the biological outcome of MYC activation. Such concepts are exemplified in the first article of the MYC series: a Perspective by Fiona Watt and colleagues on page 234, which discusses how MYC induces differentiation in epidermal stem cells, a paradox to the traditional view of MYC as a promotor of cell proliferation and tumorigenesis.

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: Ezzie Hutchinson
SENIOR EDITOR: Nicola McCarthy
ASSOCIATE EDITORS: Sarah Seton-Rogers,
Gemma Alderton

ASSISTANT EDITOR: Patrick Goymer
COPY EDITOR: Isobel Barry
ART EDITOR: Manuel Enriquez Ramirez
EDITORIAL SUPPORT MANAGER:
Elinor Faulkner

ART CONTROLLER: Susanne Harris
SENIOR ART EDITORS: Vicky Askew,
Patrick Morgan

MANAGING PRODUCTION EDITOR:
Judith Shadwell

DEPUTY PRODUCTION EDITOR: Simon Fenwick
PRODUCTION CONTROLLER: Natalie Smith

EDITORIAL ASSISTANTS: Laura Firman,
Robert Monk
WEB PRODUCTION MANAGER, UK:
Alexander Thurrell
MARKETING MANAGERS: Kellie Lane,
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: Sheryl Ocampo
PUBLISHER: Hugh Blackbourn
MANAGING DIRECTOR: Steven Inchcoombe
EDITOR-IN-CHIEF, NATURE PUBLICATIONS:
Philip Campbell

ASSOCIATE DIRECTORS:
Jenny Henderson, Tony Rudland
EDITORIAL PRODUCTION DIRECTOR:
James McQuat

PRODUCTION DIRECTOR:

Yvonne Strong
DIRECTOR, WEB PUBLISHING:
Timo Hannay
HEAD OF WEB PRODUCTION:
Jeremy Macdonald

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
DIRECTOR OF NEW TECHNOLOGY:
Greg Suprock

HEAD OF WEB SERVICES:
Anthony Barrera

NATUREJOBS PUBLISHER: Ben Crowe
**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:
Takeshi Murakami
INDIA SA/12 Ansari Road, Daryaganj,
New Delhi 110 002, India
Tel/Fax: +91 11 2324 4186
SALES AND MARKETING MANAGER, INDIA:
Harpal Singh Gill

Copyright © 2008 Nature Publishing Group
Research Highlight images courtesy of
Getty Images unless otherwise credited.
Printed in Wales by Cambrian Printers
on acid-free paper