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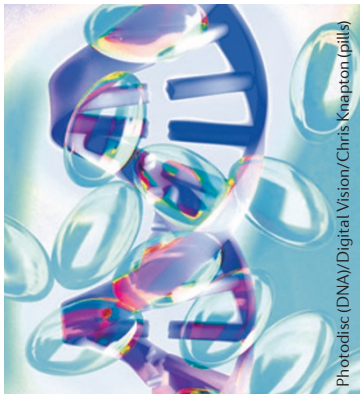

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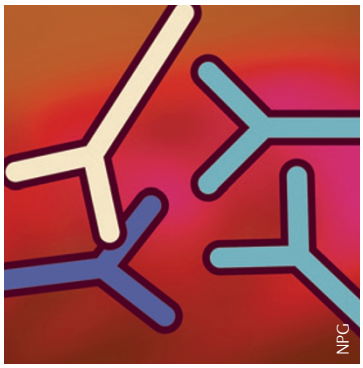

Targeting immunomodulatory signalling p130

Pharmacogenetics has the potential to improve predictions of drug efficacy and safety and therefore help expedite the development of novel agents. However, most cases where pharmacogenetic information has been used to aid optimization of the benefit–risk profile of a drug have so far been based on research conducted after regulatory approval. In their Perspective, Paulmichl and colleagues describe and compare current guidelines from the European Medicines Agency, the US Food and Drug Administration and the Japanese Pharmaceutical and Medical Devices Agency for the use of pharmacogenetics during drug development, highlighting crucial issues in the application and clinical translation of pharmacogenetic data. Our reviews this month all address immunotherapeutic approaches. The clinical success of inhibitors of tumour necrosis factor (TNF) in reducing inflammation associated with autoimmune disorders has generated significant interest in the therapeutic potential of additional members of the TNF superfamily and their receptors. Croft and colleagues discuss key targets within the TNF and TNF receptor superfamilies for the treatment of inflammatory diseases, cancer, osteoporosis and pain, and assess the current range of biologics under development. Meanwhile, Chen and colleagues focus on the roles of various signalling molecules on the surface of immune cells, such as cytotoxic T lymphocyte antigen 4 and programmed cell death protein 1, discussing strategies and agents designed to target such molecules in autoimmune diseases and cancer. Finally, Rothenberg and colleagues describe the pathogenic actions of eosinophils, which can accumulate in the blood and tissue in inflammatory and infectious diseases to regulate local immune and inflammatory responses. Recent advances in the development of eosinophil-targeted agents and innovative new therapeutic approaches are also presented.

EDITORIAL OFFICE

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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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

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EDITORS


PETER KIRKPATRICK


ALEXANDRA FLEMMING


CHARLOTTE HARRISON


SARAH CRUNKHORN


ASHER MULLARD


MAN TSUEY TSE