CANCER DISCOVERY
MAY 2012  •  VOLUME 2  •  NUMBER 5

IN THIS ISSUE
Highlighted research articles..........................377

NEWS IN BRIEF
Important news stories affecting the community........380

NEWS IN DEPTH
Q&A: Michael Pellini on Cancer Diagnostics ..........382
The States of Research ..................383
Cancer Stem Cells in the Crosshairs ....................384

RESEARCH WATCH
Selected highlights of recent articles of exceptional significance from the cancer literature ..........385

ONLINE
For more News and Research Watch, visit Cancer Discovery online at http://CDnews.aacrjournals.org.

IN THE SPOTLIGHT

Making Sense of MEK1 Mutations in Intrinsic and Acquired BRAF Inhibitor Resistance ..................390
K.H.T. Paraíso and K.S.M. Smalley
Commentary on Shi et al., p. 414

Beta-Testing of PI3-Kinase Inhibitors: Is Beta Better? ....393
P.R. Shepherd and W.A. Denny
Commentary on Ni et al., p. 425

Circulating Endothelial Progenitors and Tumor Resistance to Vascular-Targeting Therapies ............395
M. De Palma and S. Nucera
Commentary on Taylor et al., p. 434

RESEARCH BRIEFS

Occupy EGFR ..................398
J.H. Park and M.A. Lemmon
Commentary on Barkovich et al., p. 450 and Vivanco et al., p. 458

In Focus


REVIEW
Emerging Epigenetic Targets and Therapies in Cancer Medicine ..................405
R. Popovic and J.D. Licht

Preexisting MEK1 Exon 3 Mutations in Melanomas Do Not Confer Resistance to BRAF Inhibitors ...........414
Précis: Mutation of the downstream BRAF effector MEK1 is not a mechanism of innate resistance to targeted BRAF inhibitors.

Functional Characterization of an Isoform-Selective Inhibitor of PI3K-p110β as a Potential Anticancer Agent ..................425
Précis: A selective small-molecule inhibitor of the p110β isoform of PI3K is effective in a subset of PTEN-deficient tumor cell lines and xenografts.
Reversing Resistance to Vascular-Disrupting Agents by Blocking Late Mobilization of Circulating Endothelial Progenitor Cells .......... 434
Précis: Vascular-disrupting agents induce a late surge in circulating endothelial progenitor cells that can be blocked by antiangiogenic agents.

Kinetics of Inhibitor Cycling Underlie Therapeutic Disparities between EGFR-Driven Lung and Brain Cancers ......................... 450
Précis: The glioma-derived EGFRVIII mutant releases erlotinib more quickly than non-small cell lung cancer–derived EGFR-mutant alleles.

Differential Sensitivity of Glioma-versus Lung Cancer–Specific EGFR Mutations to EGFR Kinase Inhibitors ...................... 458
Précis: Glioma cells with extracellular domain EGFR mutations are selectively sensitive to type II EGFR inhibitors that stabilize the inactive kinase conformation.

For more News and Research Watch, visit Cancer Discovery online at http://CDnews.aacrjournals.org. Online-only News stories include the following:
• Annotated Cell-Line Resources Speed Discovery
• Phase II Trial for Lymphoma Gives Promising Early Results
• Targeted Combo Effective for Refractory Ewing Sarcoma
• Novel PI3K Inhibitors Enter Human Studies
• AnEMPaCTon Minority Recruitment
• MEK Inhibition Aids in Serous Ovarian Cancer

ON THE COVER
Vivanco and colleagues demonstrated that glioma-specific EGFR extracellular domain mutants were more sensitive to type II EGFR inhibitors (e.g., lapatinib) that stabilize an inactive kinase conformation than type I EGFR inhibitors (e.g., erlotinib) that target the active kinase conformation more commonly found in EGFR-mutant lung cancers. In a related article, Barkovich and colleagues found that the rapid release of erlotinib by glioma-specific EGFR mutants rendered them less sensitive to erlotinib than lung cancer–derived EGFR mutants. Together, these studies provide explanations for the limited success of first-generation EGFR inhibitors in treatment of EGFR-mutant gliomas and suggest alternative EGFR inhibition strategies may work best in these tumors. For details, please see the article by Vivanco and colleagues on page 458 and the article by Barkovich and colleagues on page 450.
Cancer Discovery 2012;2:OF7-471.

Updated version
Access the most recent version of this article at:
http://cancerdiscovery.aacrjournals.org/content/2/5

E-mail alerts
Sign up to receive free email-alerts related to this article or journal.

Reprints and Subscriptions
To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at pubs@aacr.org.

Permissions
To request permission to re-use all or part of this article, contact the AACR Publications Department at permissions@aacr.org.