The Promise of Combining Inhibition of PI3K and PARP as Cancer Therapy... 982
F.L. Rehman, C.J. Lord, and A. Ashworth
Commentary on Ibrahim et al., p. 1036, and Juvekar et al., p. 1048

Measuring Oncogenic Signaling Pathways in Cancer with PET: An Emerging Paradigm from Studies in Castration-Resistant Prostate Cancer... 985
M.J. Evans

Androgen Receptor Signaling in Circulating Tumor Cells as a Marker of Hormonally Responsive Prostate Cancer... 995

Integrative Epigenomic Analysis Identifies Biomarkers and Therapeutic Targets in Adult B-Acute Lymphoblastic Leukemia... 1004

Distinct Epigenetic Mechanisms Distinguish TMPRSS2-ERG Fusion-Positive and -Negative Prostate Cancers... 979
J.J. Alumkal and J.G. Herman

Fingerprinting Acute Leukemia: DNA Methylation Profiling of B-Acute Lymphoblastic Leukemia... 976
L. Cimmino and I. Aifantis

In The Spotlight
The Potential of Circulating Tumor Cells as a Liquid Biopsy to Guide Therapy in Prostate Cancer... 974
K. Pantel and C. Alix-Panabières

Commentary on Miyamoto et al., p. 995

Online
For more News and Research Watch, visit Cancer Discovery online at http://CDnews.aacrjournals.org.
Genome-wide DNA Methylation Events in TMPRSS2–ERG Fusion-Negative Prostate Cancers Implicate an EZH2-Dependent Mechanism with miR-26a Hypermethylation .......................... 1024

Précis: EZH2 overexpression is caused by miR-26a hypermethylation in prostate cancers lacking the TMPRSS2–ERG gene fusion, which have distinct DNA methylation profiles.

PI3K Inhibition Impairs BRCA1/2 Expression and Sensitizes BRCA-Pro proficient Triple-Negative Breast Cancer to PARP Inhibition .................. 1036

Précis: PI3K suppression represses BRCA1/2 expression and increases the sensitivity of BRCA-wild-type breast cancer cells to PARP inhibitors via ERK activation.

Combining a PI3K Inhibitor with a PARP Inhibitor Provides an Effective Therapy for BRCA1-Related Breast Cancer .................. 1048

Précis: PI3K inhibition synergizes with PARP inhibitors in vivo to decrease the growth of BRCA1-mutant breast tumors, revealing a role for PI3K in the DNA damage response.

Miyamoto and colleagues noninvasively assayed androgen receptor (AR) signaling activity in patients with prostate cancer by measuring levels of prostate-specific antigen (PSA) and prostate-specific membrane antigen (PSMA) in single circulating tumor cells (CTC). The CTCs of untreated patients showed an “AR-on” (PSA+/PSMA−) signature that switched to an “AR-off” (PSA−/PSMA+) signature after androgen deprivation therapy, but the CTCs of patients with castration-resistant prostate cancer (CRPC) were heterogeneous and had “AR-on,” “AR-off,” and “AR-mixed” (PSA+/PSMA+) signatures. The presence of “AR-mixed” CTCs was associated with a poor response to abiraterone acetate, suggesting that monitoring of AR signaling in CTCs may guide use of secondary hormonal therapies in patients with CRPC. For details, please see the article by Miyamoto and colleagues on page 995.