CANCER DISCOVERY

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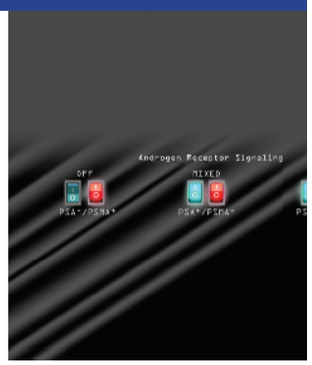

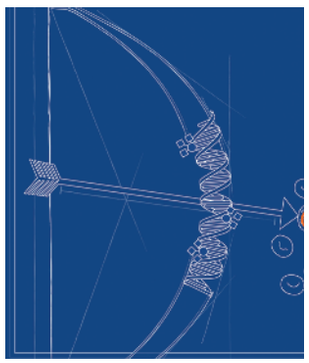

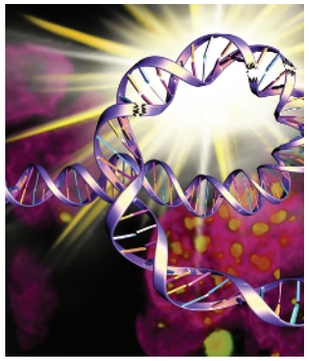

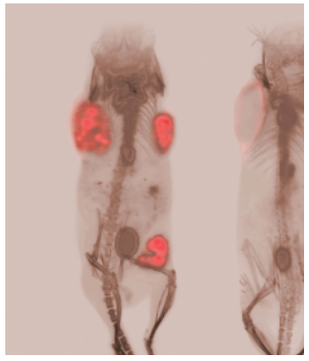

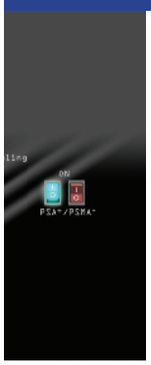

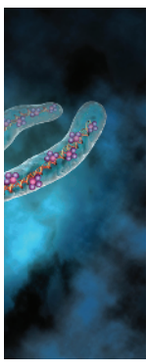

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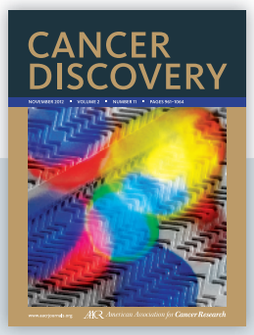

ON THE COVER Miyamoto and colleagues noninvasively assayed androgen receptor (AR) signaling activity in patients with prostate cancer by measuring levels of prostate-specific antigen (PSA) and prostate-specific membrane antigen (PSMA) in single circulating tumor cells (CTC). The CTCs of untreated patients 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.