Acquired Resistance to the TRK Inhibitor Entrectinib in Colorectal Cancer


Précis: Analyses of liquid biopsies and xenotransplanted patient tumors identify point mutations in the catalytic domain of TRKA as a mechanism of acquired resistance to the pan-TRK kinase inhibitor entrectinib.

See commentary, p. 14

MECP2 Is a Frequently Amplified Oncogene with a Novel Epigenetic Mechanism That Mimics the Role of Activated RAS in Malignancy


Précis: The MECP2 oncogene is amplified in multiple tumor types, promotes transformation by binding to epigenetically modified cytosines, and has functional redundancy with oncogenic KRAS.

Combination Therapy Targeting Ribosome Biogenesis and mRNA Translation Synergistically Extends Survival in MYC-Driven Lymphoma


Précis: Dual treatment with an mTORC1 inhibitor and rDNA transcription inhibitor induces apoptosis via distinct mechanisms and is more effective than single-agent therapy in MYC-driven lymphoma.
Cancer Immunotherapy with Immunomodulatory Anti-CD137 and Anti–PD-1 Monoclonal Antibodies Requires BATF3-Dependent Dendritic Cells


Précis: BA TF3 is essential for dendritic cell cross-priming of CD8\(^{+}\) T cells and synergizes with anti-CD137 and anti-PD1 monoclonal antibodies for effective immunostimulatory immunotherapy.

See commentary, p. 17

ON THE COVER

Sánchez-Paulete and colleagues showed that basic leucine zipper transcription factor, ATF-like 3 (BATF3)-dependent dendritic cells (DC) are required for the basal cross-priming of tumor antigens to CTLs and upregulation of programmed cell death 1 (PD-1) and CD137 by CTLs, thereby improving CTL sensitivity to immunostimulatory mAbs. Batf3\(^{-/-}\) mice were resistant to treatment with anti–PD-1 or anti-CD137 mAbs, whereas enhancement of BATF3-dependent DC expansion and activation increased the surface expression of PD-1 and CD137 on antigen-specific CD8\(^{+}\) tumor-infiltrating lymphocytes and synergistically promoted the antitumor activity of anti-CD137 and anti–PD-1 immunotherapy. These findings suggest that strategies to increase BATF3-dependent DC cross-priming may potentiate the clinical efficacy of mAb tumor immunotherapy. For details, please see the article by Sánchez-Paulete and colleagues on page 71.
CANCER DISCOVERY

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