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V211D Mutation in MEK1 Causes Resistance to MEK Inhibitors in Colon Cancer 1182
Précis: A previously uncharacterized mutation in mitogen-activated protein kinase 1 (MEK1) is activating and resistant to allosteric MEK inhibitors, but sensitive to ATP-competitive inhibitors.

RESEARCH ARTICLES
Immune Checkpoint Blockade Enhances Shared Neoantigen-Induced T-cell Immunity Directed against Mutated Calreticulin in Myeloproliferative Neoplasms 1192
C. Cimen Bozkus, V. Roudko, J.P. Finnigan, J. Mascarenhas, R. Hoffman, C. Iancu-Rubin, and N. Bhardwaj
Précis: Myeloproliferative neoplasm-associated calreticulin mutations elicit T-cell responses that can be promoted by immune checkpoint blockadewith pembrolizumab.

Interferon Signaling Is Diminished with Age and Is Associated with Immune Checkpoint Blockade Efficacy in Triple-Negative Breast Cancer 1208
Précis: Immune dysfunction associated with age in a mouse model of TNBC leads to lack of response to immune checkpoint blockade treatment that can be rescued by the addition of a STING agonist.

Loss of EZH2 Reprograms BCAA Metabolism to Drive Leukemic Transformation 1228
Précis: Knockout of the PRC2 component EZH2 and activating NRAS mutations cooperate to cause MPN progression to leukemia by upregulating the BCAA-metabolism enzyme BCAT1.

See commentary, p. 1158

Glioma Stem Cell–Specific Superenhancer Promotes Polyunsaturated Fatty-Acid Synthesis to Support EGFR Signaling


Précis: Glioma stem cells upregulate the polyunsaturated synthesis enzyme ELOVL2, which alters cell-membrane properties and composition to maintain EGFR signaling.

See commentary, p. 1161

Oncogenic KRAS Induces NIX-Mediated Mitophagy to Promote Pancreatic Cancer


Précis: Activating Kras mutations cause upregulation of the mitophagy-promoting protein NIX, which alters mitochondrial function and enhances redox capacity to support progression of pancreatic cancer.

Innate αβ T Cells Mediate Antitumor Immunity by Orchestrating Immunogenic Macrophage Programming


Précis: Innate αβ T cells are a significant component of the tumor microenvironment in pancreatic ductal adenocarcinoma and delay tumor growth in mouse and human models.

See commentary, p. 1164

PTEN Methylation by NSD2 Controls Cellular Sensitivity to DNA Damage


Hundeyin, Kurz, and colleagues discovered that innate αβ T cells (αβ Ts) were a substantial part of the T-lymphocyte population in human and mouse pancreatic ductal adenocarcinoma (PDA) tumors. These tumor-infiltrating αβ Ts were highly activated, had a phenotype markedly different from those in the periphery, and were protective against PDA progression in mice. Demonstrating the relevance of these findings to human disease, treatment of patient-derived organotypic PDA tumor spheroids with autologous αβ Ts led to conventional T-cell activation. The mechanism involved activation of CCR5, which induced immunogenic macrophage polarization. Collectively, these findings suggest that αβ T-based cell therapies should be investigated for the treatment of PDA. For details, please see the article by Hundeyin, Kurz, and colleagues on page 1288.
# CANCER DISCOVERY

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*Cancer Discov* 2019;9:OF6-1323.

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