WHAT WE’RE READING

1223  A Sampling of Highlights from the Literature

CANCER IMMUNOLOGY AT THE CROSSROADS

1224  Lessons Learned from Checkpoint Blockade Targeting PD-1 in Multiple Myeloma
Alexander M. Lesokhin, Susan Bai, and Ashraf Z. Badros

CANCER IMMUNOLOGY MINIATURES

1230  Intrinsic Resistance to Immune Checkpoint Blockade in a Mismatch Repair–Deficient Colorectal Cancer
This case of PD-1 blockade resistance, despite microsatellite instability-high (MSI-H) molecular features, suggests that other biomarkers should be considered. Loss of β2-microglobulin expression and infiltration of NK cells and M2 macrophages may be informative in therapy selection.

PRIORITY BRIEF

1237  Systemic Interferon-γ Increases MHC Class I Expression and T-cell Infiltration in Cold Tumors: Results of a Phase 0 Clinical Trial
Interferon-γ, an FDA approved drug, can drive inflammation of non-inflamed cancers, potentially facilitating immunotherapy with PD-1 inhibitors. A multicenter trial sponsored by the Cancer Immunotherapy Trials Network is based on these results.

1244  Disrupting LILRB4/APOE Interaction by an Efficacious Humanized Antibody Reverses T-cell Suppression and Blocks AML Development
Xun Gui, Mi Deng, Hao Song, Yuanzhi Chen, Jingjing Xie, Zanling Li, Lica He, Fangfang Huang, Yixiang Xu, Yasuaki Anami, Hai Yu, Chenyi Yu, Leike Li, Zhao Yuan, Xiaoying Xu, Qiuhui Wang, Yan Chai, Tao Huang, Yi Shi, Kyoji Tsuchikama, X. Charlene Liao, Ningshao Xia, George F. Gao, Ningyang Zhang, Cheng Cheng Zhang, and Zhiqiang An
When LILRB4 on acute myeloid leukemia cells (AML) binds to its ligand APOE, T-cell activation is suppressed. A humanized mAb to LILRB4 blocks LILRB4/APOE interaction and, through multiple modes of action, blocks AML development in mouse models.

1258  IRF1 Inhibits Antitumor Immunity through the Upregulation of PD-L1 in the Tumor Cell
IFN signaling can mediate antitumor responses, with transcription factor IRF1 involved in tumor suppression. Tumor cell–expressed IRF1 was found to upregulate PD-L1, aiding tumor escape. Thus, tumor cell–specific targeting of IRF1 may be important in immunotherapy.

1267  An Improved Patient-Derived Xenograft Humanized Mouse Model for Evaluation of Lung Cancer Immune Responses
Ismail M. Meraz, Mounad Majidi, Feng Meng, RuiPing Shao, Min Jin Jia, Shinya Seri, Bingliang Fang, Steven H. Lin, Peggy T. Tinkey, Elizabeth J. Shipall, Jeffrey Morris, and Jack A. Roth
Often drugs tested in preclinical models fail in the clinic. An improved humanized mouse model derived from nonexpanded CD34+ stem cells from cord blood allowed for robust engraftment and the testing of non-HLA–matched patient tumors with immune therapies.
### Table of Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1280</td>
<td>High Numbers of Circulating CD57⁺ NK Cells Associate with Resistance to HER2-Specific Therapeutic Antibodies in HER2⁺ Primary Breast Cancer</td>
</tr>
<tr>
<td>1293</td>
<td>Enriched HLA-E and CD94/NKG2A Interaction Limits Antitumor CD8⁺ T Lymphocyte Responses</td>
</tr>
<tr>
<td>1307</td>
<td>Activating KIRs on Educated NK Cells Support Downregulation of CD226 and Inefficient Tumor Immunosurveillance</td>
</tr>
<tr>
<td>1318</td>
<td>Histone Deacetylase Inhibition Sensitizes PD1 Blockade–Resistant B-cell Lymphomas</td>
</tr>
<tr>
<td>1332</td>
<td>The E3 Ubiquitin Ligase Asb2α in T Helper 2 Cells Negatively Regulates Antitumor Immunity in Colorectal Cancer</td>
</tr>
<tr>
<td>1345</td>
<td>Tumor Lymphatic Function Regulates Tumor Inflammatory and Immunosuppressive Microenvironments</td>
</tr>
<tr>
<td>1359</td>
<td>Efficient Tumor Clearance and Diversified Immunity through Neoepitope Vaccines and Combinatorial Immunotherapy</td>
</tr>
<tr>
<td>1371</td>
<td>Anti–CTLA-4 Activates Intratumoral NK Cells and Combined with IL15/IL15Rz Complexes Enhances Tumor Control</td>
</tr>
<tr>
<td>1381</td>
<td>Correction: Automated Analysis of Lymphocytic Infiltration, Tumor Budding, and Their Spatial Relationship Improves Prognostic Accuracy in Colorectal Cancer</td>
</tr>
</tbody>
</table>

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ABOUT THE COVER

Primary breast cancer biopsy tissue is not always available to assess the degree of immune-cell infiltration into HER2⁺ breast cancer tumors. Thus, one goal for cancer diagnostics is to find reliable measures based on circulating immune cells. Muntasell and Servitja et al. measure the absolute number of circulating CD57⁺ NK cells before treatment with HER2-specific antibodies and find that the higher the number of NK cells before treatment, the worse the patient's response to treatment. High amounts of CD57⁺ NK cells in the blood inversely correlate with their density in tumors, suggestive of a tumor-homing or proliferative deficiency. Indeed, the authors find that CD57⁺ NK cells in the peripheral blood have both reduced tumor-homing chemokine receptor expression and low proliferation upon activation. The amount of these circulating cells could be used as a diagnostic marker of response to HER2 antibodies. Read more in this issue on page 1280. Original image from Fig. 3B. Artwork by Lewis Long.