WHAT WE'RE READING

159 A Sampling of Highlights from the Literature

IN THE SPOTLIGHT

160 Macrophages Instruct Aberrant Glycosylation in Colon Cancer by Chemokine and Cytokine Signals
Vincenzo Bronte
See related article, p. 167

CANCER IMMUNOLOGY AT THE CROSSROADS

161 Immunotherapy of Pediatric Solid Tumors: Treatments at a Crossroads, with an Emphasis on Antibodies
Dana L. Casey and Nai-Kong V. Cheung

RESEARCH ARTICLES

167 Cross-talk between Colon Cells and Macrophages Increases ST6GALNAC1 and MUC1-sTn Expression in Ulcerative Colitis and Colitis-Associated Colon Cancer
Michael Kvorjak, Yasmine Ahmed, Michelle L. Miller, Raahul Sriram, Claudia Coronnello, Jana G. Hashash, Douglas J. Hartman, Cheryl A. Telmer, Natasa Miskov-Zivanov, Olivera J. Finn, and Sandra Cascio

Posttranslational modifications of oncoproteins can promote tumor development, yet it is unclear what induces these alterations. In UC and CACC, M2-like macrophages produce CCL17 and IL13, which increases ST6GALNAC1 glycosyltransferase, leading to glycosylated MUC1 in colon cancer cells.

See related Spotlight, p. 160

179 Targeting CMTM6 Suppresses Stem Cell–Like Properties and Enhances Antitumor Immunity in Head and Neck Squamous Cell Carcinoma
Lei Chen, Qi-Chao Yang, Yi-Cun Li, Lei-Lei Yang, Jian-Feng Liu, Hao Li, Yao Xiao, Lin-Lin Bu, Wen-Feng Zhang, and Zhi-Jun Sun

Elevated CMTM6 in patients with HNSCC predicted poor prognosis. Without CMTM6, cancer stem cell features and the proportion of exhausted T cells decrease, concomitantly improving antitumor immunity. Thus, CMTM6 may have potential as a therapeutic target.

192 Impact of TCR Diversity on the Development of Transplanted or Chemically Induced Tumors
Karim Schreiber, Theodore G. Karrison, Steven P. Wolf, Kazuma Kiyotani, Madeline Steiner, Eric R. Littmann, Eric G. Pamer, Thomas Kammertoens, Hans Schreiber, and Matthias Leisegang

Sibling mice from the same parental breeding pair and with similar microbiomes exhibit differing TCR repertoires. Thus, rejection of inoculated or chemically induced tumors differs, highlighting the important role of T-cell diversity in response to cancer.

203 Self-Maintaining CD103⁺ Cancer-Specific T Cells Are Highly Energetic with Rapid Cytotoxic and Effector Responses
Megat Abd Hamid, Huw Colin-York, Nasullah Khalid-Alham, Molly Browne, Lucia Cerundolo, Ji-Li Chen, Xuan Yao, Samara Rosendo-Machado, Craig Waugh, David Maldonado-Perez, Emma Bowes, Clare Verrill, Vincenzo Cerundolo, Christopher P. Conlon, Marco Fritzschke, Yanchun Peng, and Tao Dong

Antigen-specific CD103⁺ CD8⁺ T cells can self-regulate their CD103 expression by producing active TGFβ1 and have better TCR antigen sensitivity and enhanced effector functions versus CD103⁻ populations. However, this population undergoes increased death with prolonged exposure to tumor cells.

217 Aggressive Mammary Cancers Lacking Lymphocytic Infiltration Arise in Irradiated Mice and Can Be Prevented by Dietary Intervention
Coral Omene, Lin Ma, Jade Moore, Haoxu Ouyang, Irineu Illa-Bochaca, William Chou, Manan S. Patel, Christopher Sebastian, Sandra Demaria, Jian-Hua Mao, Kubra Karagöz, Michael L. Gatzka, and Mary Helen Barcellos-Hoff

Systemic effects of whole-body irradiation can fuel carcinogenesis by repressing antitumor immunity in a mouse model of breast cancer. Aggressive tumors lacking lymphocytic infiltrate can be prevented by dietary intervention with a nontoxic, immunomodulatory agent known as CAPE.
CD40 Enhances Type I Interferon Responses Downstream of CD47 Blockade, Bridging Innate and Adaptive Immunity

Suresh de Silva, George Fromm, Casey W. Shuptrine, Kelsey Johannes, Arpita Patel, Kyung Jin Yoo, Kaiwen Huang, and Taylor H. Schreiber


Intratumoral Plasmid IL12 Electroporation Therapy in Patients with Advanced Melanoma Induces Systemic and Intratumoral T-cell Responses

Samantha K. Greaney, Alain P. Algazi, Katy K. Tsai, Kathryn T. Takamura, Lawrence Chen, Christopher G. Twitty, Li Zhang, Alan Paciorek, Robert H. Pierce, Mai H. Le, Adil I. Daud, and Lawrence Fong

Systemic IL12 use is limited due to toxicity, yet intratumoral administration of an IL12 plasmid via electroporation is safe and efficacious, even at distant sites. In melanoma patients, this treatment induces local and systemic antigen-specific T-cell responses.

MicroRNAs in Tumor Exosomes Drive Immune Escape in Melanoma

Virginie Vignard, Maureen Labbé, Nadège Marec, Gwennan André-Grégoire, Nicolas Jouand, Jean-François Fonteneau, Nathalie Labarrière, and Delphine Fradin

CD8⁺ T cells not only interact with tumor exosomes but also internalize them, providing a route by which miRNAs encapsulated in exosomes contribute to immune escape mechanisms.

Immunoregulation and Clinical Implications of ANGPT2/TIE2  M-MDSC Signature in Non-Small Cell Lung Cancer

Elodie Lauret Marie Joseph, Caroline Laheurte, Marine Jary, Laura Boulerot, Kamal Asgarov, Éléonore Gravelin, Adeline Bouard, Laurie Rangan, Magalie Dosset, Christophe Borg, and Olivier Adotévi

Tumor immune evasion in NSCLC is promoted by overexpression of angiopoietin-2 (ANGPT2) and overaccumulation of M-MDSCs that express the ANGPT2-receptor, TIE2. The ANGPT2/TIE2  M-MDSC axis could be useful for stratification of NSCLC patients and for therapy decisions.

Correction: All-Trans Retinoic Acid Prevents Osteosarcoma Metastasis by Inhibiting M2 Polarization of Tumor-Associated Macrophages

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