Inhibition of Antitumor Immunity by B Cells

To the Editor:

In the August issue of Cancer Research, Inoue et al. reported a mechanism by which B cells inhibit the immune response against tumors. Their results support a model whereby B cell stimulation via CD40 leads to diminished CD8 and natural killer cell-mediated IFN-γ secretion and thereby attenuates antitumor immunity (1).

Their results are in line with findings previously published in 2005 in our own article entitled “Increased Rejection of Primary Tumors in Mice Lacking B Cells: Inhibition of Antitumor CTL and TH1 Cytokine Responses by B Cells” (2).

In that study, we reported that B cell–deficient mice (BCDM) have greater immunologic resistance to tumor, and that the increased resistance is associated with an enhanced antitumor Th1 cytokine and CTL response.

We used the MC38 tumor model to show that B cells inhibited secretion of IFN-γ from T cells in vitro in a CD40-dependent manner. However, there was no difference in tumor growth in an adoptive transfer experiment in which BCDM were reconstituted with either wild-type or CD40−/− B cells, indicating that CD40 may play a lesser role in inhibiting antitumor T cell response in vivo.

Using the EL-4 tumor model, Inoue et al. showed that IL-10 production from B cells might be responsible for decreased IFN-γ response seen in vitro.

Because we saw discordant results when comparing IFN-γ response in vitro to the effects of B cell reconstitution in vivo, it remains to be seen whether IL-10–producing B cells are responsible for the inhibition of antitumor Th1 and CTL response seen in vivo.

In conclusion, the study by Inoue along with ours (1, 2) and other studies (3, 4) point to an important role for B cells in the modulation and shaping of antitumor response. These studies suggest that B cell depletion, using antibodies such as rituximab, may have a potential role in cancer immunotherapy and could be employed to further augment an antitumor response by T cells.

Joseph Rosenblatt
Yu Dana Zhang
Tamar Tadmor
Microbiology and Immunology,
Division of Hematology-Oncology,
University of Miami Miller School of Medicine,
Miami, Florida

References
Inhibition of Antitumor Immunity by B Cells
Joseph Rosenblatt, Yu Dana Zhang and Tamar Tadmor


Updated version
Access the most recent version of this article at:
http://cancerres.aacrjournals.org/content/67/10/5058

Cited articles
This article cites 4 articles, 3 of which you can access for free at:
http://cancerres.aacrjournals.org/content/67/10/5058.full#ref-list-1

E-mail alerts
Sign up to receive free email-alerts related to this article or journal.

Reprints and Subscriptions
To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at pubs@aacr.org.

Permissions
To request permission to re-use all or part of this article, contact the AACR Publications Department at permissions@aacr.org.