Editorial

Toward a New Era in Cancer Treatment: Message from the New Editor-in-Chief

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I am honored for the opportunity to lead the journal and build upon the strong success of the past decade under the founding Editor-in-Chief, Dr. Dan Von Hoff, his Deputy and Senior Editors, and the Editorial Board. Since its launch in late 2001, Molecular Cancer Therapeutics (MCT) has grown in stature, impact, and respect among cancer researchers interested in experimental therapeutics discovery and preclinical development. With a focus on preclinical studies of cancer therapeutics, the journal has been and will continue to be nicely positioned between AACR’s 2 broad-based publications, Cancer Research, which focuses on basic mechanisms of cancer biology, and Clinical Cancer Research, which focuses on clinical and translational research.

Going forward, MCT will continue to place most of its emphasis on the research topics of discovery and preclinical development of novel therapeutic agents for oncology, preclinical studies of approved therapeutics, mechanisms of drug action, mechanisms of drug resistance, biomarkers of drug response, and occasional studies of drug toxicity mechanisms. The scope of therapeutics covered by the journal will continue to include both small molecules and large molecules (protein drugs and nucleic acid drugs) but not cell-based therapies, gene therapies, or vaccines. However, going forward, we will make some organizational changes to the categories of articles that appear in the pages of the journal. These organizational changes represent a response to the transformation that has occurred in the field of cancer experimental therapeutics in recent years.

Targeted cancer therapies are proliferating at a historic pace. In 1980, fewer than 10 new cancer drugs were in development worldwide. Today, more than 1,500 cancer therapeutics are in the clinical pipeline. Genomics technologies, particularly next-generation DNA sequencing, are rapidly changing the world of oncology, forecasting a day when cancers will be categorized by the mutations they harbor, rather than the organs from which they emerged. And yet, oncology drug development continues to pose challenges, with phase III failure rates approximately twice as high as those in other therapeutic areas. This high failure rate is surely attributable to the enormous heterogeneity of cancers with histologically indistinguishable features. As a reaction to this unsustainable failure rate, today, nearly all cancer therapeutics are developed in conjunction with companion diagnostics aimed at identifying subpopulations of patients for whom the medicine is most likely to be beneficial. Questions foremost on the minds of cancer drug developers are what types of cancer are likely to respond to their new candidate medicines, and what existing drugs should be used in combination with their new agent?

In the next decade, MCT has the opportunity to restructure its content and refine its mission to become the leading forum where these opportunities and challenges in cancer drug discovery and development will be vetted. As a first attempt at restructuring the journal to reflect the times, the journal will be organized into the following categories of articles:

1. Chemical (Small Molecule) Therapeutics Discovery & Preclinical Development. This section will be devoted to discovery and preclinical evaluation of novel (not yet approved) experimental cancer therapeutics that are composed of chemical, small-molecule compounds. Novel formulations and conjugates that improve small-molecule drug delivery or in vivo targeting, including nanoparticles, also are appropriate for this section.

2. Large Molecule Therapeutics Discovery & Preclinical Development. This section will be devoted to discovery and preclinical evaluation of novel (not yet approved) experimental cancer therapeutics that are composed of proteins, antibodies, or nucleic acids (i.e., large molecules).

3. Cancer Therapeutics Insights. This section will focus on preclinical (and possibly some limited clinical) studies of anticancer drugs that are already approved for patient use in the United States, Europe, or Japan. Articles will address issues such as mechanism-of-action studies, mechanisms of...
resistance, and preclinical analysis of innovative combinations. To the extent that clinical studies are included, the orientation of these articles will be distinct from those appearing in Clinical Cancer Research and will not be focused on clinical responses and patient outcomes but rather on the goal to obtain novel insights into the ways in which these approved medicines work at a molecular level and how to use them in new ways.

4. Companion Diagnostics and Cancer Biomarkers. This section will be devoted to original work on discovery and validation of pharmacodynamic biomarkers that report target engagement by targeted anticancer therapeutics (approved or experimental) and on discovery and validation of molecular signatures and biomarkers, genomic or otherwise, that may identify tumors that are likely to respond to a particular anticancer medicine, approved or experimental. Most articles will focus on preclinical validation of these pharmacodynamic biomarkers and stratification (response) biomarkers using animal models, thus distinguishing the niche of MCT from that of Clinical Cancer Research. In vivo imaging agents and their preclinical validation in animal models will also be included in this section.

5. Cancer Drug Development Tools & Technologies. This section will be devoted to introducing novel research tools and technologies that aid in the evaluation and preclinical development of anticancer agents to the research community. Examples of these will include novel animal models of cancer, in which the focus is on creating and using models for evaluating specific types of targeted anticancer agents, rather than on elucidating basic biologic mechanisms of tumor pathogenesis and progression, thus distinguishing the mission of MCT from that of Cancer Research. Also appropriate for this section are novel cell culture systems for evaluating the activity and mechanisms of action of anticancer drugs, such as 3-dimensional tumor cultures and culture systems that attempt to mimic the tumor microenvironment (e.g., mixed cell culture systems that contain both cancer cells and various types of cells from the tumor microenvironment). Technologies for analysis of circulating tumor cells represent another research topic that would be appropriate for this section of MCT, especially with respect to the use of circulating tumor cells to assess target engagement by therapeutics in vivo or for assessment of target expression for patient selection. Finally, novel contributions in the field of regulatory sciences will be covered in this section, such as innovative technologies for assessing the safety profiles of experimental therapeutics with an oncology focus.

MCT will also continue to publish review articles. Manuscripts submitted after August 1, 2012, will be placed into one of the above categories. We also plan to gradually add other types of contributions that are likely to be useful to the community of cancer researchers who work on oncology experimental therapeutics, probably calling it “Cancer Community Communications.” This section will include brief reports on topics such as special grant funding opportunities offered by the U.S. National Cancer Institute or other major funders of research on experimental cancer therapeutics and updates from the U.S. Food and Drug Administration, European Medicines Agency, or Japanese Food and Drug Administration about evolving criteria for regulatory evaluation and approval of cancer therapeutics and companion diagnostics. We welcome your suggestions for this section.

Finally, I wish to thank the dedicated scientists and physicians who have served MCT so successfully during its first decade of publication, and I offer my deep appreciation to the incoming Deputy and Senior Editors and Editorial Board members who have agreed to serve going forward. The initial list of Deputy and Senior Editors is included in this month’s masthead. We plan to expand the senior team further, and the new Editorial Board listing will appear in next month’s issue. By working together with the research community, we can achieve our goal to make MCT the premier forum for publications on the preclinical evaluation and development of oncology therapeutics.

Sincerely,

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