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Editorial

Advanced Drug Delivery Reviews: Advancing science, improving therapy

I am pleased to provide an update on three recent developments in ADDR that would further elevate its stature and increase its value as a resource in your drug delivery research and product development. These developments are: surge in the impact factor, harnessing the input of the Editorial Advisory Board, and redefining the "Editor's Choice" issue.

1. Surge in impact factor

After a decade-long steady rise from 2.406 in 2000 to 8.287 in 2009, the impact factor of ADDR reached an all-time high of 11.957 in 2010. A follow-up bibliometric analysis revealed that this dramatic increase was not due to a few exceptionally highly cited articles. Rather, the quality of all articles has increased across the board. In addition, ranked number 5 in the ISI "Pharmacology and Pharmacy" category, the number of citations for ADDR in 2007 and 2008 outpaced the increase in number of articles in 2009. Moreover, only 3% of the articles in ADDR were un-cited, compared with the category average of 27%. There were very few self-citations in ADDR.

This profile of ADDR is the outcome of a process anchored on quality. ADDR prides itself in its signature theme format, which enables a concise, critical analysis of state-of-the-art science and technology of an advanced drug delivery endeavor, whenever possible, from a multidisciplinary perspective. Quality assurance of the journal begins with prioritization by the editorial team of theme topics from various sources. The next critical step is to select an expert scientist deemed to have the scientific acumen, collaborative research network, energy and commitment to excellence to lead the development of a cohesive theme issue in a timely manner.

2. Harnessing the input of the Editorial Advisory Board

The Editorial Advisory Board, comprising 30 leading scientists across disciplinary and geographical boundaries, plays an important behind-the-scene role in quality assurance. Specifically, they are consulted by the Executive Editors to resolve conflicting reviews, to suggest pertinent theme topics and nominate prospective theme editors, and of course to serve as theme editors themselves. The Board was reorganized at the beginning of this year to ensure that the modern science and technology driving the next wave of innovations in advanced drug delivery is well represented. We will continue to expand the Board to accelerate the pace of translation of mechanistic research into delivery modalities that would improve therapeutics.

On behalf of the editorial team, I wish to thank the outgoing advisory board members for their exemplary service to the journal and the drug delivery community for almost a decade. They are: S. Farr, P. Low, H. Lennernas, S. Charman, P. Smith, T. Okano, A. Fasano, B. Gander, P. Sinko, D. Scherman, C. Pouton, and M.C. Davies. At the same time, I am pleased to welcome 10 new board members to the team. They are S.M. Moghimi, S.N. Bhatia, T. Desai, T. Minko, D. Putnam, R. Satchi-Fainaro, W. Hennink, R. Mahato, Y.H. Matsumura, and I.C. Kwon. The research expertise of new board members will be detailed in future issues of ADDR.

3. Redefining the "Editor's Choice" issue

A brainchild of the 2006 editorial team, "Editor's Choice" was founded with two broad objectives in mind. One objective was to serve as a platform for expert opinions on emerging concepts in science or technology capable of charting a new direction in advanced drug delivery and revolutionizing healthcare. The other objective was to take a critical look at one or more aspect of a long standing drug delivery concept or technology with a special focus on lessons learned from both triumphs and setbacks.

Seven articles were selected from a pool of 32 to comprise this year's Editor's Choice, as follows:

1. P. Amornphimoltham, A. Masedunskas, and R. Weigert. "Intravital microscopy as a tool to study drug delivery in preclinical studies." *Advanced Drug Delivery Reviews* (October 2010): 1–10. http://www.ncbi.nlm.nih.gov/pubmed/20933026.
2. L. Bildstein, C. Dubernet, and P Couvreur. "Prodrug-based intracellular delivery of anticancer agents." *Advanced Drug Delivery Reviews* (January 2011). http://www.ncbi.nlm.nih.gov/pubmed/21237228.
3. B. Forbes, B. Asgharian, LA Dailey, D. Ferguson, P. Gerde, M. Gumbleton, L. Gustavsson, et al. "Challenges in inhaled product development and opportunities for open innovation." *Advanced Drug Delivery Reviews* (December 2010). http://www.ncbi.nlm.nih.gov/pubmed/21144875.
4. M. Gumbleton, G. Al-Jayyoussi, A. Crandon-Lewis, D. Francombe, C. J. Kreitmeyr, K. Morris, and M.W Smith. "Spatial expression and functionality of drug transporters in the intact lung: Objectives for further research." *Advanced Drug Delivery Reviews* (September 2010): 1–9. http://www.ncbi.nlm.nih.gov/pubmed/20868712.
5. F. Li and R.I. Mahato. "RNA interference for improving the outcome of islet transplantation." *Advanced Drug Delivery Reviews* (December 2010). http://www.ncbi.nlm.nih.gov/pubmed/21156190.
6. M. Mahmoudi, S. Sant, B. Wang, S. Laurent, and T. Sen. "Superparamagnetic iron oxide nanoparticles (SPIONs): Development, surface modification and applications in chemotherapy." *Advanced Drug Delivery Reviews* (May 2010). http://www.ncbi.nlm.nih.gov/pubmed/20685224.
7. R.W. Niven. "Toward managing chronic rejection after lung transplant: The fate and effects of inhaled cyclosporine in a

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complex environment." *Advanced Drug Delivery Reviews* (October 2010). http://www.ncbi.nlm.nih.gov/pubmed/20950661.

The intravital microscopy described by Amornphimoltham et al. (Paper #1) is an example of a proven technology in basic science that holds promise in improving the sophistication of advanced drug delivery systems. Intravital microscopy refers to an ensemble of molecular imaging techniques for illuminating the drug target and its microenvironment as well as for evaluating the performance of prototype advanced drug delivery systems. Theoretically, intravital microscopy should be of benefit in mapping the complexity of the microenvironment encountered by the inhaled cyclosporine formulation in the respiratory tract, as described by Niven (Paper #7); and in mapping the spatial expression of drug transporters in the lung, as articulated by Gumbleton et al. (Paper #4) The prodrug and nanotechnology approaches described, respectively, by Bildstein et al. (Paper #2) and by Mamouldi et al. (Paper #6) offered yet another dimension of how knowledge of the subcellular architecture of the drug targets may improve the probability of success in optimizing chemotherapy. The review by Feng and Mahato (Paper #5) on RNA interference to improve the outcome of islet transplantation is an excellent example of an (unconventional) innovative application of drug delivery.

The Commentary by Forbes et al. on "Challenges in inhaled product development and opportunities for open innovation" (Paper #3) deserves special mention. It calls for a drastic fundamental change in the culture of drug discovery and delivery. Although the commentary addresses specifically drug delivery in the lung, several aspects are applicable to drug delivery in general. To paraphrase, "……For these drugs to be developed as inhaled medicines, a better understanding of their fate in the lungs and how this might be modified is required. Harmonised approaches based on 'best practice' are advocated for dosimetry and safety studies; this would provide coherent data to help product developers and regulatory agencies differentiate new inhaled drug products. …… Recommendations are made for (i) better industry-academia-regulatory co-operation, (ii) sharing of pre-competitive data, and (iii) open innovation through collaborative research in key topics such as lung deposition, drug solubility and dissolution in lung fluid, adaptive responses in safety studies, biomarker development and validation, the role of transporters in pulmonary drug disposition, target localisation within the lung and the determinants of local efficacy following inhaled drug administration."

4. The way forward

The high ranking of ADDR in the peer-reviewed scientific literature is not only a compliment on the journal's vigilance for scientific excellence, but also a tribute to the calibre of scientists whose work contributes to the journal's excellence and high scientific standing. To sustain the journal's excellence and the clout of drug delivery in decision making and research resource allocation, your support as proposed theme editors and authors committed to showcase the best science and technology in drug delivery is essential.

Although the record-high 2009 impact factor is the recurring theme of this editorial, the mission of ADDR is more than an endless chase of increasing the impact factor. ADDR's mission is to provide a forum where future leaders in advanced drug delivery are nurtured, where their creative energies are translated into future breakthroughs in therapeutics, and where the standards of advanced drug delivery research are kept eternally high. Setting the gold standard in drug delivery research that is the cornerstone of life-saving personalized medicine is our vision for ADDR.

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