

Evolution and Revolution

Drug delivery, much like drug discovery, is focused on improving health. Delivery mechanisms are complex, involving transport and metabolism in multiple tissues, and cellular and subcellular localization, to deliver drugs to sites of desirable actions, avoiding sites of undesirable actions as well as the complexities of the delivery system technologies. Success or failure is often gauged by achieving the desired enhancement in drug efficacy. However, much is often learned in pursuit of the ultimate delivery strategy. While achieving the “goal” is the ultimate target, *Molecular Pharmaceutics* will focus on the advances in mechanistic understanding underlying the potential achievement of that goal. Through a focus on the accumulating knowledge of delivery mechanisms, *Molecular Pharmaceutics* will contribute to the scientific advances in this drug delivery community, ultimately benefiting human health. Only through the combination of drug discovery and drug delivery can our most effective drugs be realized.

This issue of *Molecular Pharmaceutics* contains advances in our knowledge of prodrug activation, membrane transport pathways, metabolic stability, apoptosis, and solution structure of drug complexes, illustrating the advances in our understanding of delivery both biological and physicochemical. It is through the accumulation of knowledge of delivery mechanisms that *Molecular Pharmaceutics* will ultimately enhance human health.

This is an exciting new era, with a revolution occurring in methodologies and knowledge in the biological sciences, knowledge to which drug delivery research is, in part, contributing but most importantly adapting and advancing to focus on delivery goals. Our focus is on the ultimate goal of improving human health. Through proceeding stepwise in our mechanistic understanding of drug delivery, we will ultimately achieve this goal. I am confident that through evolution we will advance toward our goal, and should there be a revolution, we should, and will, do our best to recognize it.

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