Blood-Brain Barrier in Drug Discovery: Optimizing Brain Exposure of CNS Drugs and Minimizing Brain Side Effects for Peripheral Drugs

Li Di (Editor), Edward H. Kerns (Editor)

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DESCRIPTION

Focused on central nervous system (CNS) drug discovery efforts, this book educates drug researchers about the blood-brain barrier (BBB) so they can affect important improvements in one of the most significant – and most challenging – areas of drug discovery.

- Written by world experts to provide practical solutions to increase brain penetration or minimize CNS side-effects
- Reviews state-of-the-art in silico, in vitro, and in vivo tools to assess brain penetration and advanced CNS drug delivery strategies
- Covers BBB physiology, medicinal chemistry design principles, free drug hypothesis for the BBB, and transport mechanisms including passive diffusion, uptake/efflux transporters, and receptor-mediated processes
- Highlights the advances in modelling BBB pharmacokinetics and dynamics relationships (PK/PD) and physiologically-based pharmacokinetics (PBPK)
- Discusses case studies of successful CNS and non-CNS drugs, lessons learned and paths to the market
ABOUT THE AUTHOR

Li Di is an associate research fellow in the Pharmacokinetics, Dynamics, and Drug Metabolism Department at Pfizer Global Research and Development and has extensive experience in the pharmaceutical industry. She has over 100 publications, presented over 70 invited lectures, and teaches an American Chemical Society short course on drug-like properties.

Edward Kerns worked in pharmaceutical research and development for over 30 years, was associate director at Wyeth and Bristol-Myers Squibb, then was at the NIH-National Center for Advancing Translational Sciences. He published over 90 journal papers or book chapters and 3 books, and teaches an American Chemical Society short course on drug-like properties.

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