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Johan Gabrielsson (Swedish University)16. Microdialysis to assess free drug concentration in brain / William Kielbasa (Lilly)17. Imaging technique for CNS drug discovery / Lei Zhang (Pfizer Inc.)Modulating Brain Penetration of Leads During Drug Discovery18. Designing CNS drugs for optimal brain exposure / Zoran Rankovic (Lilly)19. Case studies of CNS drug optimization - medicinal chemistry and CNS biology perspectives / Kevin J. Hodgetts (Harvard NeuroDiscovery Center)20. Designing peripheral drugs for minimal brain exposue / Peter Bungay (Pfizer)21. Case studies of non-CNS drugs to minimize brain penetration - Nonsudative antihistamines / Andrew Crowe (Curtin University)Case Studies in CNS Drug Discovery22. Case study 1 on discovery of a successful CNS drug - Fycompa (AMPA Receptor Antagonist) / Andrew Satlin and Antonio Laurenza (Eisai)23. Case study 2 on discovery of a successful CNS drug - Vortioxetine (Serotonin Modulator and Stimulator) / Benny Bang-Andersen (Lundbeck)Drug Delivery Techniques to CNS24. Brain delivery using nanotechnology / Xinguo Jiang (Fudan University)25. Intranasal delivery to CNS / Lisbeth Illum (University of Nottingham)Future Prospective in Blood Brain Barrier Advancement26. Conclusion Remarks / Joan Abbott (King's College).

Sommario/riassunto

"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"--Provided by publisher.