1. Record Nr. UNINA9910789629003321 Autore Stockwell Brent R Titolo The quest for the cures [[electronic resource]]: the science, stories and struggles behind the next generation of medicines // Brent R. Stockwell New York,: Columbia University Press, 2011 Pubbl/distr/stampa **ISBN** 1-283-07277-7 9786613072771 0-231-52552-4 Descrizione fisica 1 online resource (289 p.) Disciplina 615 615.19 Soggetti Drug development Drugs - Design Proteins - Metabolism Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Front matter -- Contents -- List of Illustrations -- Preface --Acknowledgments -- Abbreviations -- Part One. The Vanishing Cures -- 1. The Drug Discovery Crisis -- 2. A New Science of Molecules -- 3. The Birth of the First Cancer Drugs -- 4. A New Company Creating Drug Combinations -- 5. The Undruggable RAS Protein -- 6. The Druggable Genome -- Part Two. The Path to the Next Generation of Medicines -- 7. Peering Inside Proteins -- 8. The Nature of Interactions Between Proteins -- 9. From Protein- Protein Interactions to Personalized Medicines -- 10. A Revolution in Peptide Synthesis -- 11. A Vast Array of Drug Candidates -- 12. Moving Outside the Small Molecule Box -- 13. Accelerating the Arrival of Next- Generation Drugs -- Notes -- Glossary -- Index After more than fifty years of blockbuster drug development, skeptics Sommario/riassunto are beginning to fear we are reaching the end of drug discovery to combat major diseases. In this engaging book, Brent R. Stockwell, a

leading researcher in the exciting new science of chemical biology, describes this dilemma and the powerful techniques that may bring

drug research into the twenty-first century. Filled with absorbing stories of breakthroughs, this book begins with the scientific achievements of the twentieth century that led to today's drug innovations. We learn how the invention of mustard gas in World War I led to early anti-cancer agents and how the efforts to decode the human genome might lead to new approaches in drug design. Stockwell then turns to the seemingly incurable diseases we face today, such as Alzheimer's, many cancers, and others with no truly effective medicines, and details the cellular and molecular barriers thwarting scientists equipped with only the tools of traditional pharmaceutical research. Scientists such as Stockwell are now developing methods to combat these complexities technologies for constructing and testing millions of drug candidates, sophisticated computational modeling, and entirely new classes of drug molecules all with an eye toward solving the most profound mysteries of living systems and finding cures for intractable diseases. If successful, these methods will unlock a vast terrain of untapped drug targets that could lead to a bounty of breakthrough medicines. Offering a rare, behind-the-scenes look at this cutting-edge research, The Quest for the Cure tells a thrilling story of science, persistence, and the quest to develop a new generation of cures.