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Nota di contenuto	Zebrafish: Methods for Assessing Drug Safety and Toxicity; Contents; Preface; Contributors; Acknowledgments; 1. The Reproductive Biology and Spawning of Zebrafish in Laboratory Settings; 1.1 Introduction; 1.2 Overview of Zebrafish Reproductive Biology and Behavior; 1.3 Spawning Techniques and Technology; 1.4 Determining Factors for Reproduction in Laboratory Stocks of Zebrafish; 1.5 Conclusions; References; 2. Developmental Toxicity Assessment in Zebrafish; 2.1 Introduction; 2.2 Methods; 2.3 Results; 2.4 Discussion; References; 3. Use of Emerging Models for Developmental Toxicity Testing 3.1 Importance of Assessing Developmental Toxicity3.2 Current Methods for Assessing Developmental Toxicity; 3.3 Use of Emerging Models for Developmental Toxicity Testing; 3.4 New Guidelines for Chemical Testing Using Zebrafish; 3.5 Conclusions; References; 4. Assessment of Drug-Induced Cardiotoxicity in Zebrafish; 4.1

Introduction; 4.2 Zebrafish Heart; 4.3 Summary of Cardiotoxicity Study Design and Results; 4.4 Materials and Methods; 4.5 Results; 4.6 Conclusions; References; 5. Cardiotoxicity Studies in Zebrafish; 5.1 Introduction; 5.2 Repolarization Toxicity
5.3 Initial Screening: Bradycardia5.4 High-Resolution Assays of Repolarization; 5.5 Future Directions; References; 6. In Vivo Recording of the Adult Zebrafish Electrocardiogram; 6.1 Introduction; 6.2 Optimization of Zebrafish Electrocardiogram Recording; 6.3 Basic Intervals; 6.4 Drug Effects; 6.5 Conclusions; References; 7. Hematopoietic and Vascular System Toxicity; 7.1 Introduction; 7.2 Hematopoiesis and Vascular Development in the Zebrafish; 7.3 Morphological and Functional Assays to Assess Toxicity; 7.4 Summary; Acknowledgment; References; 8. Hepatotoxicity Testing in Larval Zebrafish
8.1 Introduction: The Larval Zebrafish Model8.2 Liver Development; 8.3 Hepatic Gene Knockdown and Mutation; 8.4 Hepatotoxicity Testing in Drug Discovery; 8.5 Phenotypic-Based Larval Zebrafish Hepatotoxicity Screens; 8.6 Secondary and Mechanistic Liver Assays; 8.7 Conclusions; References; 9. Whole Zebrafish Cytochrome P450 Assay for Assessing Drug Metabolism and Safety; 9.1 Introduction; 9.2 Background and Significance; 9.3 Materials and Methods; 9.4 Results; 9.5 Conclusions; Acknowledgment; References; 10. Methods for Assessing Neurotoxicity in Zebrafish; 10.1 Introduction
10.2 Limitations of Current Neurotoxicity Testing10.3 Assessing Neurotoxicity in Zebrafish; 10.4 Summary; Acknowledgments; References; 11. Zebrafish: A Predictive Model for Assessing Cancer Drug-Induced Organ Toxicity; 11.1 Introduction; 11.2 Materials and Methods; 11.3 Results; 11.4 Conclusions; Reference; 12. Locomotion and Behavioral Toxicity in Larval Zebrafish: Background, Methods, and Data; 12.1 Introduction; 12.2 Background; 12.3 Locomotion; 12.4 Zebrafish Models; 12.5 Analyzing Larval Locomotion; 12.6 Chemical Effects on Larval Locomotion; 12.7 Conclusions; Acknowledgments; References
13. Zebrafish: A Predictive Model for Assessing Seizure Liability

Sommario/riassunto

Zebrafish: Methods for Assessing Drug Safety and Toxicity offers a practical guide for using zebrafish as a tool for toxicology studies. Consolidating key protocols and approaches to help researchers navigate the important and evolving field of zebrafish models for toxicity screening, this new title describes the methods for using the zebrafish as a model organism to assess compound-induced toxicity on all major organs. Individual chapters that concentrate on assays for each organ system are included and various analytical tools including microscopy, microplate readers, high content