
Preface

Mood and anxiety disorders are common brain diseases that affect over 15% of the world population. Included in this group of diseases are major depression and bipolar disorder and generalized anxiety, panic, obsessive compulsive, and posttraumatic stress disorders. Recent years have seen a tremendous increase in our understanding of the pathogenesis and pathophysiology of mood and anxiety disorders. This increased knowledge parallels a remarkable growth in the use of the laboratory mouse as a tool to both understand the biological and genetic basis of diseases, including those of a psychiatric origin, and to develop improved treatments. While it is not possible to reproduce fully human mood or anxiety disorders in mice, the study of behavioral phenotypes modeling aspects of these diseases provides invaluable insights into potential disease and treatment mechanisms. For this reason, the application of mouse models will increase as additional underlying susceptibility genes are discovered, new targets for medications are identified, and clinical studies reveal novel neurobiological markers that may be translated between humans and mice.

This book provides an overview of behavioral approaches that are utilized in the characterization of mood and anxiety disorder-related behaviors in mice. Additionally, many of the chapters describe behavioral assays that are commonly used – both in industry and academia – to assess the potential antidepressant and anxiolytic efficacy of novel compounds. The contributing authors to this book are world-renowned scientists with broad experience in the development and application of behavioral tasks in mice. The book is intended first as a resource for scientists actively pursuing or interested in establishing behavioral protocols in their laboratories. It can also serve as a reference for those students, scientists, and practitioners who have an interest in better understanding the preclinical behavioral methods used in mood and anxiety research. As a cautionary note, there are a number of subtleties in mouse husbandry, handling, and testing procedures that cannot be acquired solely from following a book. Thus, those inexperienced with techniques used to test behavior in mice are encouraged to seek collaboration with an experienced behavioral neuroscientist to help address these underappreciated but significant experimental issues.

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Characterization Using Behavioral Tests

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