

Introduction

The broad goal of this special issue is to focus on recent developments using genetic modifications as a pharmacological approach to the study of behavior. Individual differences in behavior are clearly influenced by genetic factors, and it is becoming increasingly evident that susceptibility to the effects of drugs on behavior also depends in part on genes. By using genetic tools, researchers have documented the role of genetic substances on individual differences in sensitivity to the acute and chronic effects of a number of drugs. Several recent technological advances offer powerful new opportunities to evaluate the link between specific genes and specific drug responses.

Contributions to this special issue cover a wide range of genetic approaches to investigating responses to drugs. We believe that these papers exemplify the particular strengths of the several methods employed. For example, historical approaches include the use of selective breeding. This method is genetically powerful, producing animals with extremes of sensitivity to drug effects, but the selected lines

offer no direct path to the specific genes involved. Also presented in this issue are approaches from quantitative trait locus analysis and the use of congenic strains to define genetic locations more discretely, to recent advances using mutant mice genetically engineered to lack a neurotransmitter receptor subtype of interest. Animal models include not only the mouse and the rat, but also *Drosophila melanogaster* and Zebra fish. While there is an interesting and diverse range to the techniques used in these papers (which accurately gave some sense of the broad range of methods currently utilized in the scientific community as a whole), all contributions focus on genetic modification as a pharmacological approach to the study of behavior. We hope that you find it an interesting collection of articles and enjoy this special issue.

Finally, we would like to thank the many reviewers who evaluated the submissions for us, often on short notice.

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Guest Editors