

Laboratory

animals

limited

LABORATORY ANIMAL HANDBOOKS NO. 14

The Design of Animal Experiments

Reducing the use of animals
in research through better
experimental design

Michael F.W. Festing
Philip Overend
Rose Gaines Das
Mario Cortina Borja
Manuel Berdoy

Published for
Laboratory Animals Ltd
by Royal Society of

M
616.0273
D4



The ROYAL
SOCIETY of
MEDICINE
PRESS Limited

Contents

	Acknowledgements	iv
	Preface	v
1	Basic principles of the design of animal experiments	1
2	Choice of animals	17
3	Understanding and controlling variation	29
4	The design of experiments	38
5	The determination of sample size	71
6	Presenting and interpreting the results and making decisions	84
7	Concluding remarks: putting the project together	95
	Appendix 1: Brief notes on statistical packages	100
	Appendix 2: Further reading	103
	References	107
	Index	111

laboratory
animals
limited

HKU Libraries



X46246545

ANIMAL HANDBOOKS NO. 14

The Design of Animal Experiments

Where there is no alternative to the use of experimental animals in biomedical research, it is important that experiments are well designed and correctly analysed in order to maximize the chance of getting scientifically valid results. Experiments that use too few animals may fail to pick up biologically important effects, while those that use too many or use them incorrectly may be subjecting them to unnecessary pain, distress or lasting harm.

This book is aimed at all research scientists who use laboratory animals, with the aim of helping them to design their own experiments more effectively and/or to improve their ability to communicate with professional statisticians when designing more complex experiments. It covers many aspects of experimental design, such as choice of experimental animal, which are not considered by most statistics textbooks. Conversely, it does not cover the more advanced designs or statistical methods, so it should, ideally, be used in conjunction with more conventional statistics textbooks.

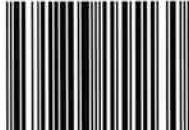
Links to useful related information on experimental design and analysis for studies that use animals can be found at
<http://www.lal.org.uk/hbook14.htm>



The ROYAL
SOCIETY of
MEDICINE
PRESS Limited

www.rsmppress.co.uk

ISBN 1-85315-513-6



9 781853 155130 >