Contents

| 70 Measuring transgene expression | 5 Sex determination |
|--|-------------------------------------|
| D. Consideration of the Consid | LiThe X and Y chromosomes |
| PREFACE | iiiv he Sry gene and Sxr miceises |
| | coffow sexual differentiation occ |
| PART I - INTRODUCTION | 104 little about cell migration |
| 3C References | ar References |
| 1 Overview | 7 Further reading |
| What is a transgenic mammal? | 4 |
| | |
| Procedures that do not involve transgen | |
| The foreign DNA is genetically manipul | |
| Generation of transgenic mammals | Octomiparental expression |
| Transgene expression | 12 Uniparental gene expression as |
| Some conclusions | 15 X-chromosome inactivation |
| | 21 Global methylation during dev |
| References onen earnelerantlythen | 61 Inactivation of the cytosine-5-r |
| | |
| 2 Why employ transgenic animals? | 71 References |
| Properties of many cell types change rap | oidly when cultured |
| Some genes behave differently when tra | nsfected into cells and as |
| mammalian transgenes MAMMAM | OLE LIL TEVENICE THE TAIL |
| Complex processes, cell-cell and tissue- | tissue interactions 21 |
| An evample | 21 |
| References | mamman dalah transgenic mamm |
| References | Vectors |
| 107 | Pronuclear microinjection |
| PART II - BACKGROUND | rdma to noitsoilibour almona 27 |
| | |
| 3 Mouse reproduction and develop | |
| Meiosis | 92 References |
| Oogenesis | ggibaer reading |

2 s Further reading

4 Mouse husbandry and genetics

| Spermatogenesis | 34 |
|---|---------------------------------|
| Fertilisation | 36 |
| Early development | 38_ |
| References | 2709700 44 |
| Further reading | 46 |
| 4 Mouse husbandry and genetics | 47 |
| Husbandry | 47 |
| Genetics | 49 |
| Laboratory mouse strains | 50 |
| Genetic background | 51 |
| Breeding programmes: backcrossing and int | |
| Gene mapping | 53 |
| References | 65 |
| Further reading | 66 |
| 5 Sex determination | 67 |
| The X and Y chromosomes | 67 |
| The Sry gene and Sxr mice | 40 A 33 67 |
| How sexual differentiation occurs | 72 |
| | TOUGOSTUI - ITSI75 |
| References | 76 |
| Further reading | Weivrey 78 |
| | |
| 6 Uniparental expression, X-inactivation | and DNA methylation 79 |
| | 08 The foreign DNA is genetic |
| Uniparental expression | 28 Generation of transgenic to |
| Uniparental gene expression and gametic in | nprinting |
| X-chromosome inactivation | 16 Some conclusions |
| Global methylation during development | 26 Ethical issues |
| Inactivation of the cytosine-5-methyltransfe | |
| RNA | 1 Road, 96 |
| References | 76 Why employ transgeni |
| es change rapidly when cut gniber returned and as | 201 roperties of many cell type |
| PART III - TRANSGENIC MAMMAL | Somegeneral maillanument 103 |
| | Complex processes, cell-ce |
| 7 Making transgenic mammals | 105 |
| Vectors | 105 |
| Pronuclear microinjection | 107 |
| Genomic modification of embryonic stem c | ells 109 |
| Transfer of diploid somatic nuclei | 116 |
| | 021 louse reproduction ar |
| References | 2 20 2124 |
| Further reading | 130 |

| 8 Random DNA integration | 131 |
|--|------------|
| Design of DNA constructs | 132 - |
| Integration of foreign DNA | 134 |
| Transgenic founders and transgenic lines | 145 |
| Insertional mutation and gene trapping | 145 /4 |
| References | 155 |
| Further reading | 162 |
| 9 DNA Integration by homologous recombination | 163 |
| Transgene integration | 164 |
| Site-specific recombination | 179 // |
| References | 193 |
| 10 Expression of transgenes | 199 |
| RNA synthesis and processing | 199 |
| Protein synthesis | 210 |
| Measuring transgene expression | 213 |
| Genetic background om al managmi won al absorage oling | 215 |
| The effect of introns on transgene expression | 218 |
| Chromosomal position effect of the change of the state of | 222 |
| Switching genes off or on strap it about and gruingo lead and | 228 29 |
| References vgoloid latmagabnut to nave agbelword avistre | 236 |
| ns. Thus, this book attempts both to summarise the subject area | |
| 11 Transgenic livestock wingue of oals box alammen sin | 249 |
| Pronuclear microinjection as off salam of behinger not same | |
| o other texts. The first chapter, Overview gnitsquise to | 253 4 |
| no References in the broadest terms with the min esone region | 253 |
| Further reading agents a statistic outset what constitutes a transgering individual of | sio of 255 |
| | |
| Glossary in Jahw no essention memmals focuses on what in grants of transgenic memmals focuses on what in grants of the control | 257 |
| aspects of the subject, all of which ultimately bexsbnI the | |
| | |
| expression requires an understanding of alternative transgene | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |