INTRODUCTION ................................................................. 1 (171)

COMMITTEE REPORTS

Genetic constitution of chromosomes 1 and 2 (J.L. Hamerton and
P.J.L. Cook) .................................................................................. 3 (173)
Genetic constitution of autosomes other than chromosomes 1 and 2
(F.H. Ruddle and E.R. Giblett) ...................................................... 13 (183)
Genetic constitution of the X chromosome (P.L. Pearson, R. Sanger,
and J.A. Brown) ......................................................................... 20 (190)
Unassigned syntenic groups and theoretical considerations (V.A.
McKusick and J.H. Edwards) ..................................................... 26 (196)
Gene markers for mapping the human genome: the 1974 listing (T.B.
Shows) ...................................................................................... 29 (199)
Chromosome markers (J.L. Hamerton) ................................. 38 (208)
Terminology (E.R. Giblett) ..................................................... 40 (210)
Organization of future meetings (D. Bergsma) ...................... 41 (211)
References to the committee reports ................................. 43 (213)

SHORT REPORTS

K.C. Atwood, A.S. Henderson, D. Kacian, and E.M. Eicher
On the feasibility of mapping low-multiplicity genes by in situ hy
bridization ................................................................. 59 (229)

B. Bengtsson and W.F. Bodmer
The strategy of gene assignment using hybridization: the number of lines
needed to exclude chance associations .......................... 62 (232)
K. Berg, G. Beckman, and L. Beckman
A search for linkage between the Ag and dimeric superoxide dis-
mutase (SOD-1) loci ............................................................. 67 (237)
W.B. Bias, D.S. Borgiaonkar, R.S. Kucherlapati, and F.H. Ruddle
Lymphocytotoxicity inhibition: a reliable method for HL-A typing
of cultured cell lines .............................................................. 71 (241)
A.B. Bijnen, I. Schreuder, CM. Giles, W.R.T. Los, P. Meera Khan,
W.S. Volkers, and J.J. van Rood
A study of genetic markers in families with a recombination in the HL-A region ............................................................. 77 (247)
D.S. Borgaonkar, D.R. Bulling, C. Partridge, F.H. Ruddle, and V.A. McKusick
Chromosomal variation in man: catalog of chromosomal variants and anomalies ......................................................... 82 (252)
H. Bosker and L.E. Nijenhuis
Possible linkage between a gene causing reinsertion of molar I and blood group P .......................................................... 85 (255)
D.W. Buck and W.F. Bodmer
The human species antigen on chromosome 11 ..................... 87 (257)
Regional mapping of seven enzyme loci on human chromosome 1 by use of somatic cell hybridization .......................... 90 (260)
R.S.K. Chaganti, L.R. Weitkamp, J. Fleming, G. Miller, and J. German
Polymorphic chromosomes and gene assignment in man ..... 93 (263)
S. Chen, R.P. Creagan, E.A. Nichols, and F.H. Ruddle
Assignment of human esterase-D gene to chromosome 13 .... 99 (269)
E.H.Y. Chu, C.C. Chang, and N.C. Sun
Synteny of the human genes for Gal-1-PT, ACPDA MDH-I, and Gal+-Act and assignment to chromosome 2 ...................... 103 (273)
G.B. Côté and J.H. Edwards
Centromeric linkage in Down’s syndrome ......................... 107 (277)
R.P. Creagan, S. Chen, and F.H. Ruddle
Chromosome assignments of genes in man using mouse-human somatic cell hybrids: association of diphtheria toxin sensitivity with chromosome 5 ......................................................... 109 (279)
R.P. Creagan and F.H. Ruddle
The clone panel: a systematic approach to gene mapping using interspecific somatic cell hybrids .................................. 112 (282)
Assignment and regional localization of a gene coding for galactokinase to human chromosome 17q21-22 ..................... 117 (287)
R.C. Elston
An approximation for the prior probability of autosomal linkage 120 (290)
Mapping the Xg red blood cell antigen in human-Chinese hamster cell hybrids: the Xg locus is possibly located on the short arm of the X chromosome .......................................................... 123 (293)
M.A. Ferguson-Smith
Gene mapping by exclusion ................................................. 126 (296)
Centromeric linkage ............................................................... 130 (300)

U. Francke
Regional localization of the human genes for malate dehydrogenase-I and isocitrate dehydrogenase-II on chromosome 2 by interspecific hybridization using human cells with the balanced reciprocal translocation t(1;2)(q32;q13) ........................................... 138 (308)

U. Francke and N. Busby
Assignments of the human genes for lactate dehydrogenase-A and thymidine kinase to specific chromosomal regions............... 143 (313)

H. Galjaard, A. Hoogeveen, W. Keijzer, H.A. de Wit-Verbeek, and A.J.J. Reuser
Different gene mutations in variants of GMI- and GM2-gangliosidosis demonstrated by enzyme analysis of (single) somatic hybrid cells 150 (320)

T. Gedde-Dahl, Jr., P.J.L. Cook, M.K. Fagerhol, and J.A. Pierce
The Gm-Pi linkage: a summary estimate................................. 157 (327)

A new polymorphic enzyme, uridine monophosphate kinase: gene frequencies and a linkage analysis .............................. 159 (329)

K.-H. Grzeschik
Regional mapping of human chromosomes 1 and 11 ............ 172 (342)

J.L. Hamerton, T. Mohandas, P.J. McAlpine, and G.R. Douglas
Assignment of three human gene loci to regions of chromosome 2 176 (346)

J.L. Hamerton, T. Mohandas, P.J. McAlpine, and G.R. Douglas
Localization of gene loci on chromosome 12 and the X in man .. 179 (349)

V. van Heyningen, M. Bobrow, W.F. Bodmer, S. Povey, S.E. Gardiner, and D.A. Hopkinson
Assignment of the genes for human mitochondrial malate dehydrogenase to chromosome 7, for mannose phosphate isomerase and pyruvate kinase to chromosome 15, and, probably, for human esterase-D to chromosome 13 using man-mouse hybrids ....... 183 (353)

K.W. Jones, I. Purdom, J. Prosser, and G. Corneo
Localization of human satellite DNA I ................................. 188 (358)

A.P.M. Jongsma, A. Hagemeijer, and P. Meera Khan
Regional mapping of TPL, LDH-B, and Pep-B on chromosome 12
of man ......................................................... 189 (359)
R.S. Kucherlapati, R.M. Baker, and F.H. Ruddle
Ouabain as a selective agent in the isolation of somatic cell hybrids 192 (362)
R.S. Kucherlapati, R.P. Creagan, E.A. Nichols, D.S. Borgiaonkar, and F.H. Ruddle
Synteny relationships of four human genes: mannose phosphate isomerase to pyruvate kinase-3 and triose phosphate isomerase to lactate dehydrogenase-B ........................................ 194 (364)
P.J. McAlpine, T. Mohandas, L. Komarnicki, V. Niewczas-Late, A. Vust, and J.L. Hamerton
Further data on the assignment of the phosphoglucomutase \( PGM_2 \) gene locus to chromosome 4 in man .................. 198 (368)

Contents

P.J. McAlpine, T. Mohandas, L. Komarnicki, V. Niewczas-Late, A. Vust, and J.L. Hamerton
Tentative assignment of the peptidase-A (Pep-A) gene locus to the \( q_{21} \rightarrow q_{ter} \) region of chromosome 18 in man .......... 200 (370)
J.K. McDougall, S.M. Elsevier, R.S. Kucherlapati, and F.H. Ruddle
Regional localization of human genes in virus-induced uncoiler regions ......................................................... 202 (372)
P. Meera Khan, A. Westerveld, E.M. Wurzer-Figurelli, and D. Bootsma
\( \alpha \)-Galactosidase in man-Chinese hamster somatic cell hybrids ... 205 (375)
Linkage group I: multipoint mapping .............................. 211 (381)
C.W.H. Partridge and F.H. Ruddle
A computerized system for storage, retrieval, and analysis of gene mapping data ........................................... 220 (390)
P.M. Price and K. Hirschhorn
In situ hybridization for gene mapping ............................. 225 (395)
M.C. Rattazzi, J.A. Brown, R.G. Davidson, and T.B. Shows
Tay-Sachs and Sandhoff-Jatzkewitz diseases: complementation of hexosaminidase A deficiency by somatic cell hybridization . 232 (402)
R. Rebourcet, D. Weil, N. Van Cong, and J. Frézal
\( \alpha \)-Galactosidase: a dimeric enzyme dependent on a structural locus on the X chromosome .................................. 236 (406)
Linkage relationships of \( lqh \) to \( Amy, Fy, PGM_2 \), and \( Rh \) ...... 239 (409)
F.H. Ruddle and F.A. McMorris
Assignment of mannose phosphate isomerase to human chromosome \( 7 \); a retraction ..................................................... 248 (418)
T.B. Shows and J.A. Brown
Mapping chromosomes 1 and 2 employing a \( l/2 \) translocation in somatic cell hybrids .................................................. 251 (421)
T.B. Shows and J.A. Brown
Localization of genes coding for PGK, HPRT, and G6PD on the long arm of the X chromosome in somatic cell hybrids ........ 256 (426)

T.B. Shows and J.A. Brown
Segregation of esterase-D and adenine phosphoribosyl transferase in somatic cell hybrids: gene linkage or chromosome association? 260 (430)

D.M. Steffensen, W. Prensky, D. Mutton, and J.L. Hamerton
Mapping the human 5S RNA genes on chromosome 1 using translocations ..................................................... 264 (434)

J.E. Syrett, J.E. Gray, E. Grace, S.M. Bowser Riley, P.J.L. Cook, E.B. Robson, and P.W. Teesdale
Two informative lp translocation families ........................................ 269 (439)

N. Van Cong, D. Weil, R. Rebourcet, C. Pangalos, and J. Frézal Tay-Sachs and Sandhoff diseases: an hypothesis about the primary lesion based on hexosaminidase patterns in interspecific hybrids ... 272 (442)

L.R. Weitkamp, E.W. Lovrien, B. Olaisen, K. Fenger, T. Gedde-Dahl, Jr., S.A. Sorensen, P.M. Conneally, W.B. Bias, and J. Orr
Linkage relations of the loci for the MN blood group and red cell acid phosphatase ............................................... 276 (446)

L.R. Weitkamp, P.L. Townes, and E. Johnston
Linkage data on urinary pepsinogen and the Kell blood group ... 281 (451)

A. Westerveld, H.M.A. Beyersbergen van Hengouwen, and H. van Someren
Evidence for synteny between the human loci for galactose-1-phosphate uridyl transferase and aconitase in man-Chinese hamster somatic cell hybrids ................................................................. 283 (453)

A. Westerveld, H. van Someren, H.M.A. Beyersbergen van Hengouwen, and RA. Oosterbaan
Synteny relationship between the human loci for hexosaminidase-A, mannose phosphate isomerase, and pyruvate kinase-3, studied in man-Chinese hamster somatic cell hybrids.............................. 285 (455)

K. Willecke and F.H. Ruddle
Transfer of the gene for hypoxanthine-guanine phosphoribosyl-transferase of isolated human metaphase chromosomes into murine L-cells .............................................................. 288 (458)

G.J. Wullems and J. van der Horst
Electrophoretic pattern of hypoxanthine phosphoribosyltransferase produced in Chinese hamster cells following incorporation of human chromosomes .................................................. 292 (462)

APPENDICES

J.E. Anderson, Y.S. Teng, and E.R. Giblett
Stains for six enzymes potentially applicable to chromosomal assignment by cell hybridization.................................. 295 (465)

A.E. Greene, R.C. Miller, and L.L. Coriell
Cell cultures with chromosomal aberrations — July 1974 — available from the Human Genetic Mutant Cell Repository ......... 300 (470)

PARTICIPANTS
306 (476)