GENETIC MAPS

Locus Maps of Complex Genomes

BOOK 5

HUMAN MAPS

ıe Human Gene Map (Homo sapiens) (2N = 46) as of HGM10

Iva H. Cohen[1], Huey S. Chan[1], Rowena K. Track[1], and Kenneth K. Kidd[1,2]

(1) : Human Gene Mapping Library, 25 Science Park, New Haven, CT 06511

(2) : Department of Human Genetics, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510

The figures presented here represent the official gene map as compiled at the Tenth International Workshop on Human Gene Mapping (HGM10), and are based on data from the various committee reports of the Workshop proceedings (1). The correct citations for the scientific content of these figures are the committee reports from HGM10 (1). The figures have been produced as a joint effort by the staff of the Yale-HHMI Human Gene Mapping Library (HGML) and the staff of HGM10. Further information about the loci depicted below is available in the proceedings and/or the HGML on-line database.

Bars are used to indicate a region within which a locus or several loci have been mapped. In the figures, an effort has been made to place shorter bars closest to the chromosome, particularly those with a large number of loci mapped to them. A dagger (†) after a locus symbol indicates a tentative assignment based on weak evidence, while a double-dagger (‡) indicates an inconsistent assignment based on conflicting evidence. The symbols of genes mapped within the past year are underlined in the figures. Not included in the figures are those non-polymorphic anonymous DNA segments which have been given a status of D (that is, an assignment based only on the investigator's statement to the DNA Committee, for which no Chromosome Committee evaluation has occurred). An integrated alphabetical listing of loci on all chromosomes follows the figures. Equivalent to underlining in the figures, recently mapped genes are indicated by an asterisk in the table. Though present in the figures, anonymous DNA segments have been omitted from this listing. The DNA Committee Report (2) in the Workshop proceedings contains a sequential listing of all anonymous DNA segments.

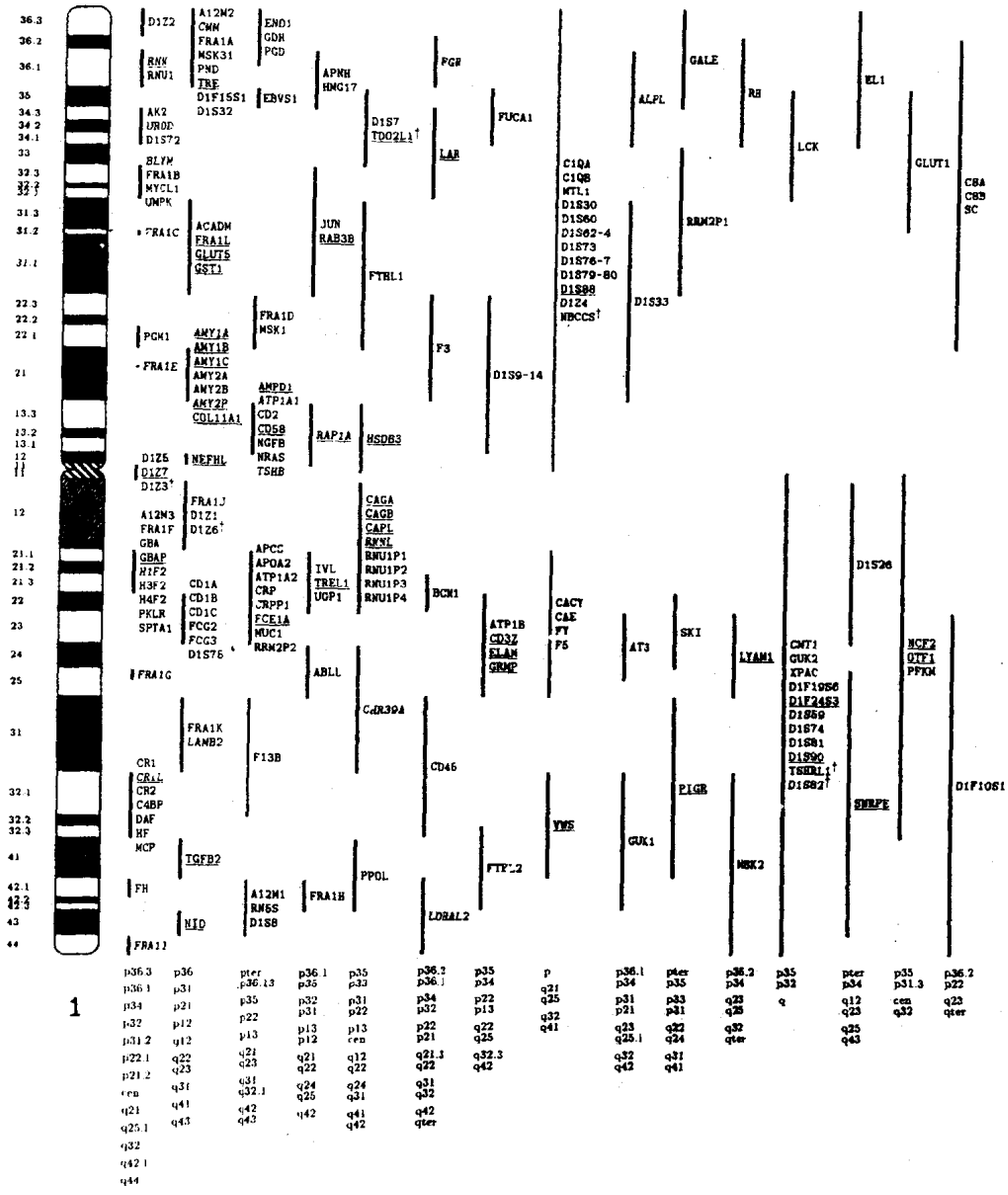
The Human Gene Mapping Library is an on-line resource for literature and data relevant to the human genetics research community. The information in the database and its components (LIT, MAP, RFLP, PROBE, and CONTACT) is fully available to members of the scientific community. The HGML does not currently charge for this service nor for its access via Telenet; however, some users may have to pay local telephone or non-U.S. computer network charges. Requests for information from the database, more detailed documentation on its contents and capabilities, and information on the hardware requirements and procedures for obtaining direct interactive access to the Library can be sent by post, by electronic mail, by telephone, or via facsimile to:

Yale-HHMI Human Gene Mapping Library
25 Science Park
New Haven, CT 06511
Tel: (203) 786-5515
FAX: (203) 786-5534
Email: GENEMAP@YALEVM.BITNET

References

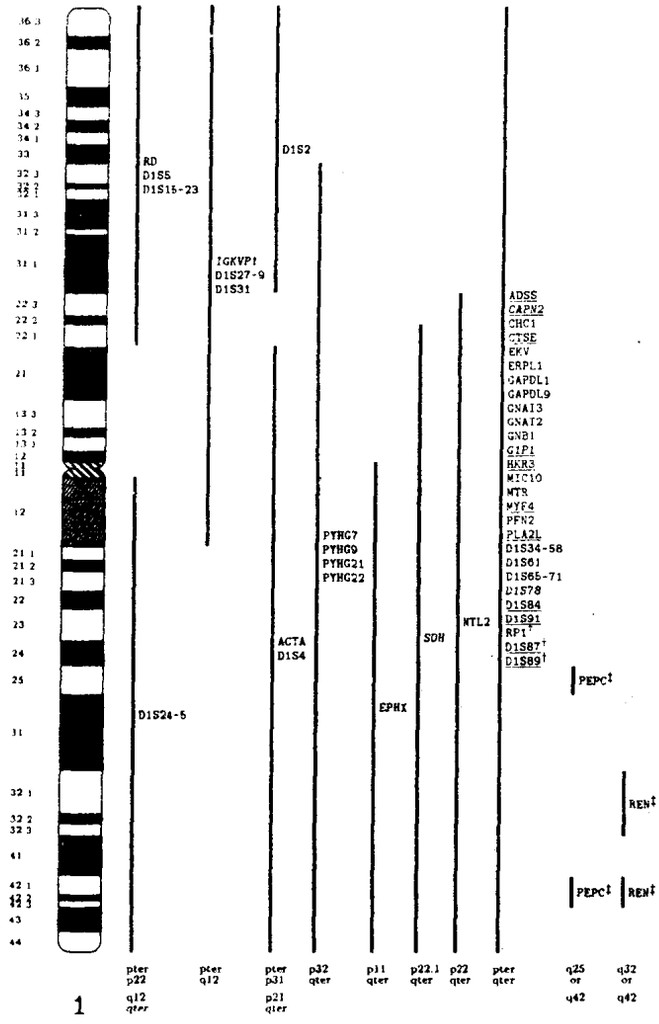
1. Human Gene Mapping 10 (1989): Tenth International Workshop on Human Gene Mapping. Cytogenet. Cell Genet. 51:1-1147.

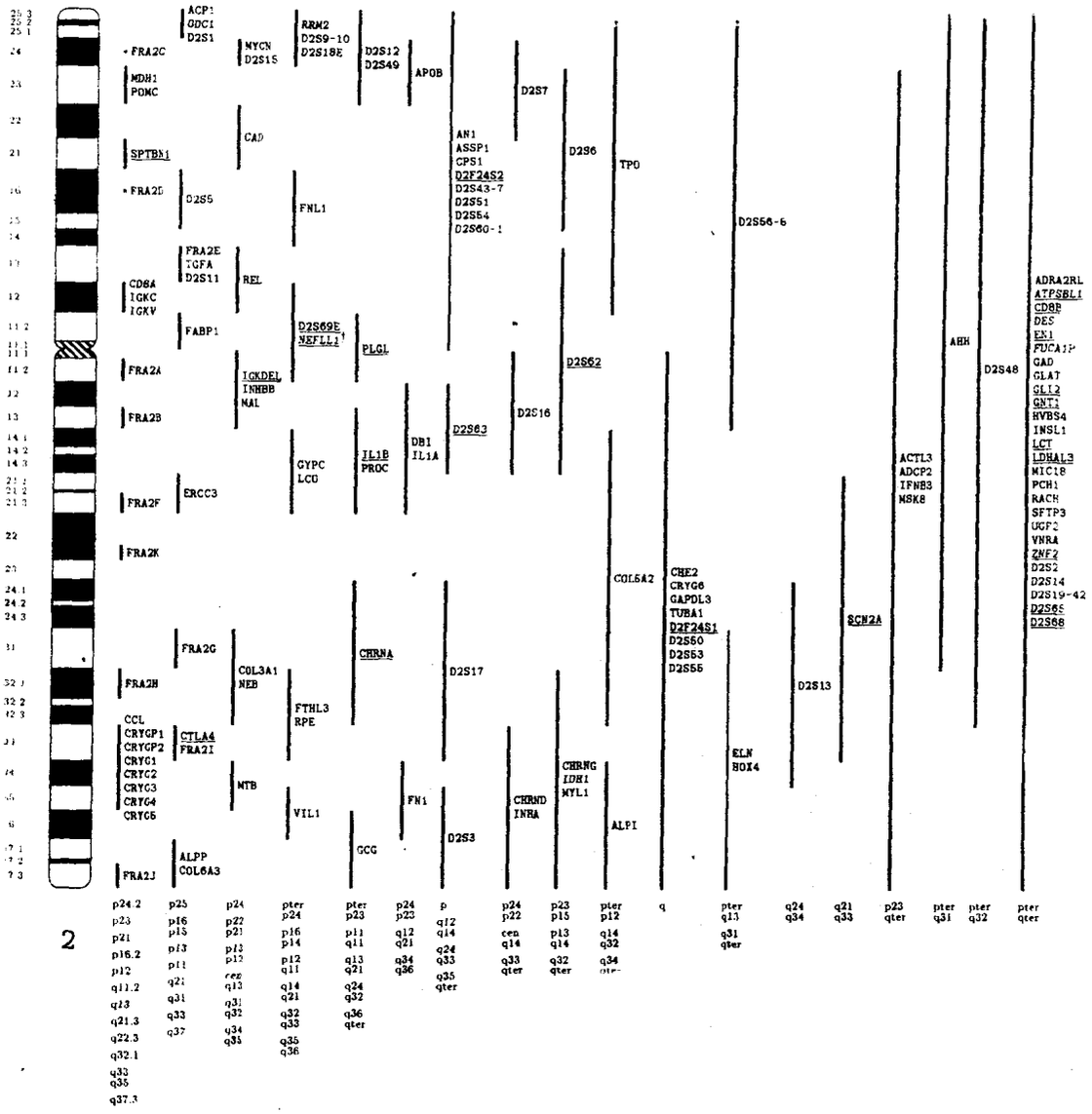
2. Kidd, K. K., Bowcock, A. M., Schmidtke, J., Track, R. K., Ricciuti, F., Hutchings, G., Bale, A., Pearson, P., and Willard, H. F. (1989) Cytogenet. Cell Genet. 51:622-947.

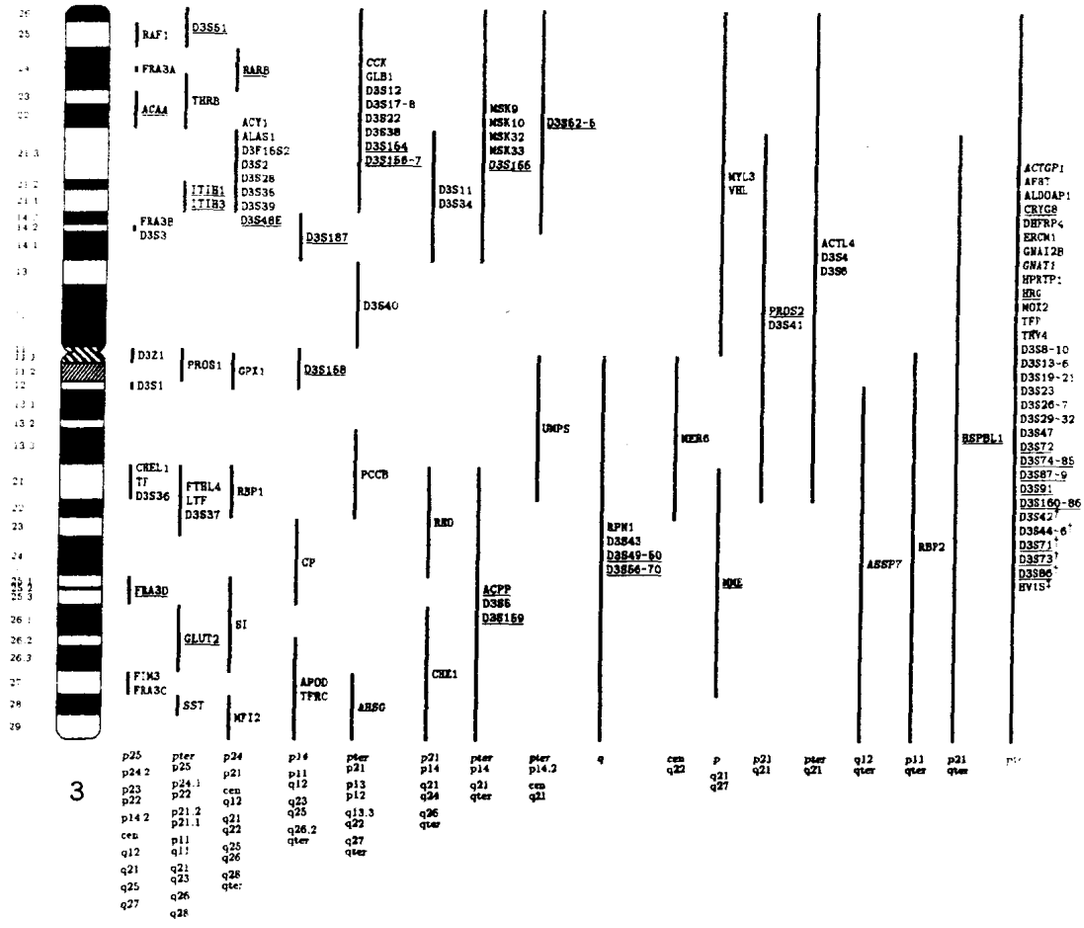


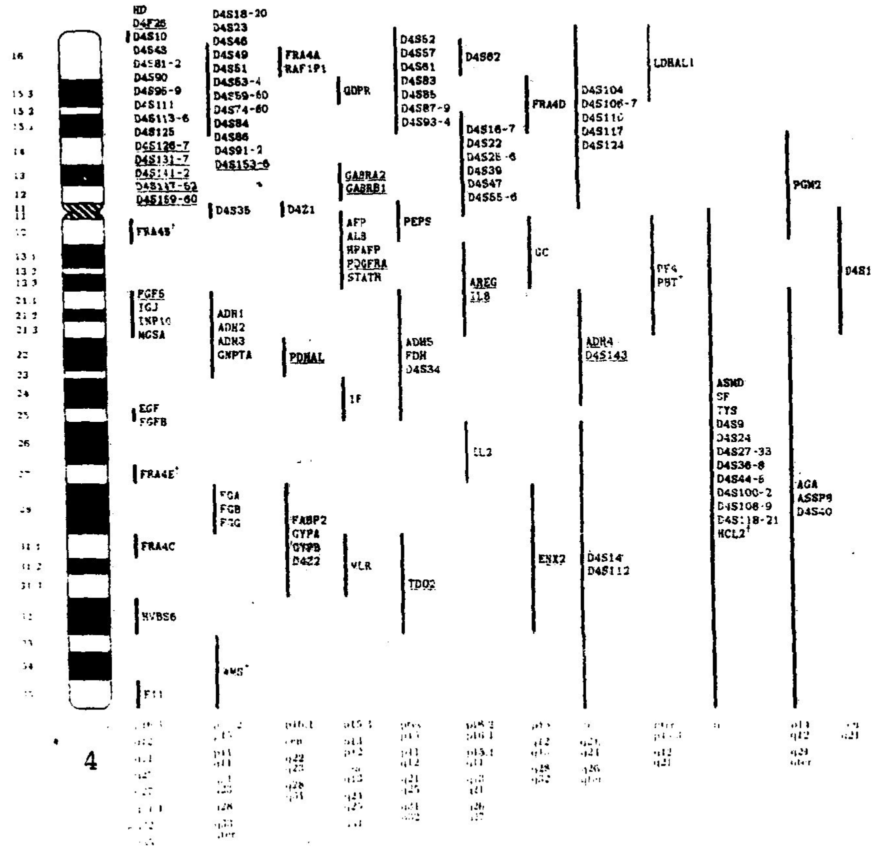
Continued next page

此为试读，需要完整PDF请访问：www.ertongbook.com

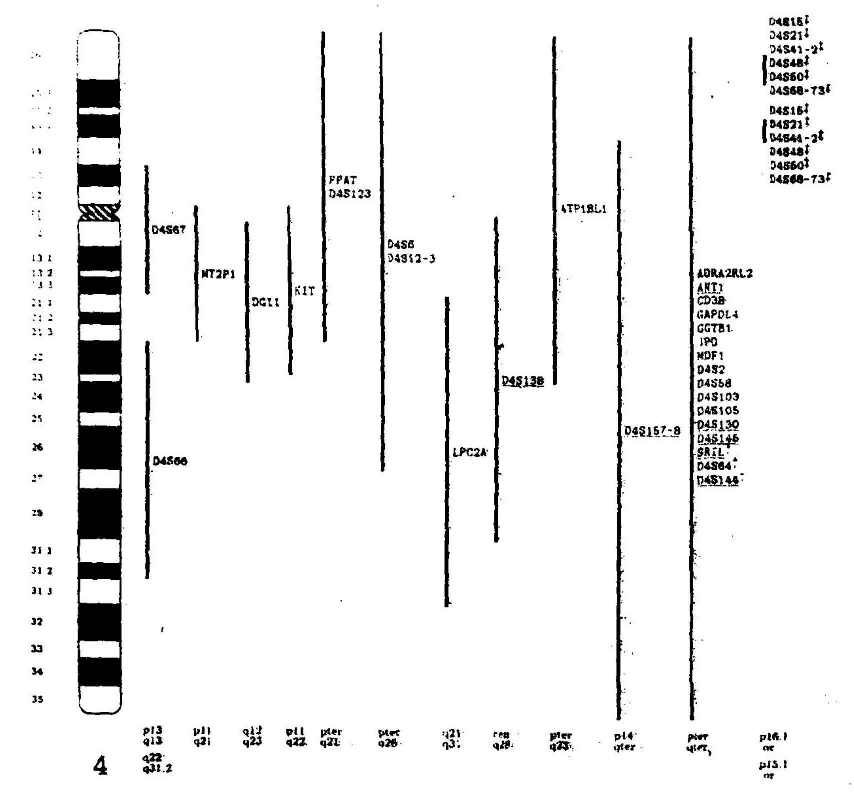

36.3
36.2
36.1
35
34.3
34.2
34.1
33
32.3
32.2
32.1
31.3
31.2
31.1
22.3
22.2
22.1
21
13.3
13.2
13.1
12
11
12
21.1
21.2
21.3
22
23
24
25
31
32.1
32.2
32.3
41
42.1
42.2
42.3
43
44
RD
D1S5
D1S15-23
D1S24-5
IGKVP†
D1S27-9
D1S31
D1S2
ACTA
D1S4
PYHG7
PYHG9
PYHG21
PYHG22
EPHX
SOH
NTL2
ADSS
CAPN2
CHC1
CTSE
EKV
ERPL1
GAPDL1
GAPDL9
GNAI3
GNAT2
GNB1
G1P1
HKR3
MIC10
NTR
MYF4
PFN2
PLA2L
D1S34-58
D1S61
D1S65-71
D1S78
D1S84
D1S91
RP1†
D1S87†
D1S89†
PEPC‡
REN‡
PEPC‡
REN‡
pter p22 q12 qter
pter q12
pter p31 p21 qter
p32 qter
p11 qter
p22.1 qter
p22 qter
pter qter
q25 or q42
q32 or q42
1

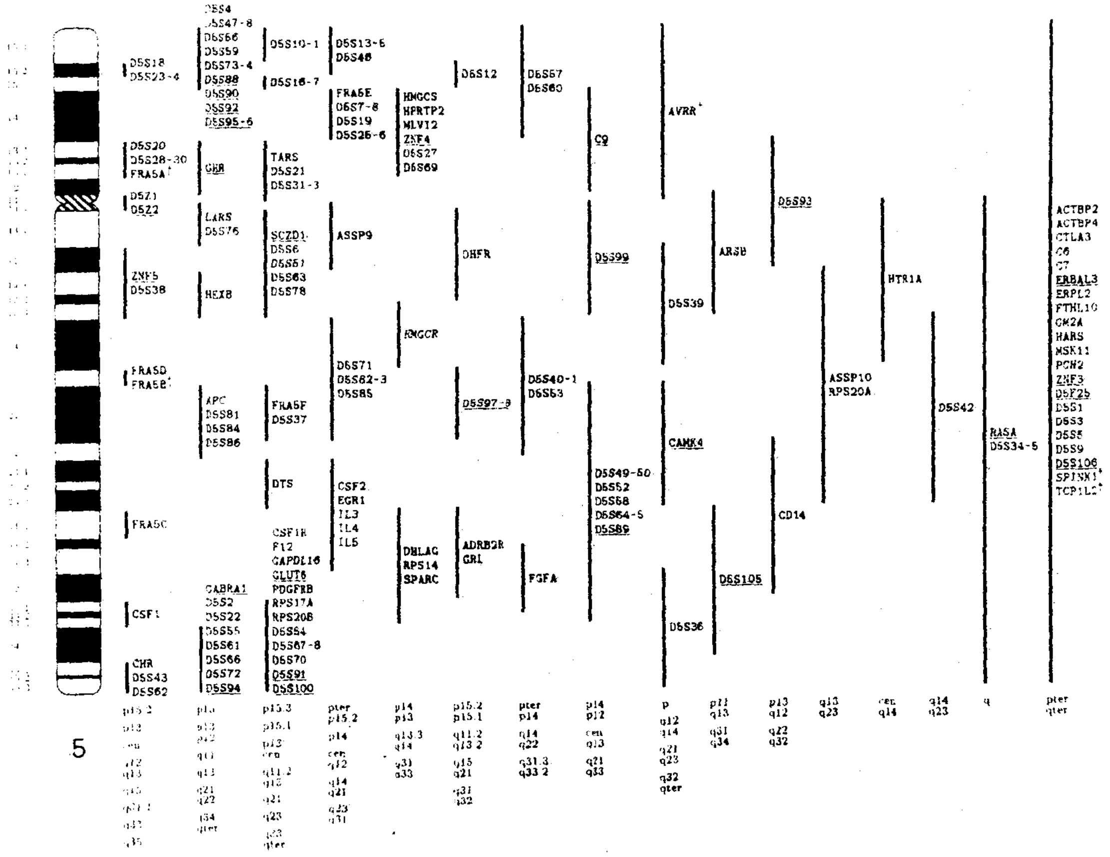

FRA2C
MDH1
PDHC
SPTBN1
FRA2D
CD8A
IGKC
IGKV
FRA2A
FRA2B
FRA2F
FRA2K
FRA2H
CCL
CRYGP1
CRYGP2
CRYG1
CRYC2
CRYG3
CRYG4
CRYG5
FRA2J
ACP1
GDC1
D2S1
D2S5
FRA2E
TGFA
D2S11
FABP1
FRA2G
ERCC3
CTLA4
FRA2I
ALPP
COL6A3
MYCN
D2S15
CAD
REL
IGKDEL
INHBB
MAL
COL3A1
NEB
MTB
RRM2
D2S9-10
D2S18E
FNL1
D2S69E
NEFLL1
GYPC
LCU
FTHL3
RPE
VIL1
D2S12
D2S49
PLGL
IL1B
PROC
CHRNA
GCG
APOB
DBI
IL1A
FN1
AN1
ASSP1
CPS1
D2F24S2
D2S43-7
D2S51
D2S54
D2S60-1
D2S63
D2S17
D2S3
D2S7
D2S16
CHRND
INHA
D2S6
D2S62
CHRNG
IDH1
MYL1
TPO
COL5A2
ALPI
CHE2
CRYG6
GAPDL3
TUBA1
D2F24S1
D2S50
D2S53
D2S55
D2S56-6
ELN
HOX4
D2S13
SCN2A
ACTL3
ADCP2
IFNB3
MSK8
AHH
D2S48
ADRA2RL
ATPSBL1
CDBB
DES
EX1
FUCA1P
GAD
GLAT
GL12
GNT1
HVBS4
INSL1
LCT
LDHAL3
MIC18
PCH1
RACH
SFTP3
UGP2
VNRA
ZNF2
D2S2
D2S14
D2S19-42
D2S65
D2S68
p24.2
p23
p21
p16.2
p12
q11.2
q13
q21.3
q22.3
q32.1
q33
q35
q37.3
p25
p16
p15
p13
p11
q21
q31
q33
q37
p24
p22
p21
p13
p12
cen
q13
q31
q32
q34
q35
pter
p24
p16
p14
p12
q11
q14
q21
q32
q33
q35
q36
pter
p23
p11
q11
q13
q21
q24
q32
q36
qter
p24
p23
q12
q21
q34
q36
p
q12
q14
q24
q33
q35
qter
p24
p22
cen
q14
q33
qter
p23
p15
p13
q14
q32
q32
qter
pter
p12
q14
q32
q34
q
pter
q13
q31
qter
q24
q34
q21
q33
p23
qter
pter
q31
pter
q32
pter
qter
2


3
RAF1
D3S51
FRA3A
RARB
ACAA
THRB
ACY1
ALAS1
D3F16S2
D3S2
D3S28
D3S36
D3S39
D3S48E
ITIH1
ITIH3
FRA3B
D3S3
D3S187
CCK
GLB1
D3S12
D3S17-8
D3S22
D3S38
D3S164
D3S166-7
D3S11
D3S34
MSK9
MSK10
MSK32
MSK33
D3S166
D3S62-6
MYL3
VEL
PROS2
D3S41
ACTL4
D3S4
D3S6
ACTGP1
AF87
ALDOAP1
CRYGB
DHFRP4
ERCM1
GNAI2B
GNAT1
HPRTP1
HRG
MOI2
TFF
TRV4
D3S8-10
D3S13-6
D3S19-21
D3S23
D3S26-7
D3S29-32
D3S47
D3S72
D3S74-85
D3S87-9
D3S91
D3S160-86
D3S42
D3S44-6
D3S71
D3S73
D3S86
HVIS
D3S40
D3Z1
PROS1
GPX1
D3S168
D3S1
UMPS
MER6
BSPBL1
CREL1
TF
D3S36
FTBL4
LTF
D3S37
RBP1
PCCB
RED
RPN1
D3S43
D3S49-50
D3S56-70
CP
ASSP7
RBF2
FRA3D
ACPP
D3S6
D3S159
NME
SI
GLUT2
FIM3
FRA3C
APOD
TFRC
ARSG
CHE1
SST
MFI2
p25
p24.2
p23
p22
p14.2
cen
q12
q21
q25
q27
pter
p25
p24.1
p22
p21.2
p21.1
p11
q11
q21
q23
q26
q28
p24
p21
cen
q12
q21
q22
q25
q26
q28
qter
p14
p11
q12
q23
q25
q26.2
qter
pter
p21
p13
p12
q13.3
q22
q27
qter
p21
p14
q21
q24
q26
qter
pter
p14
q21
qter
pter
p14.2
cen
q21
q
cen
q22
p
q21
q27
p21
q21
pter
q21
q12
qter
p11
qter
p21
qter

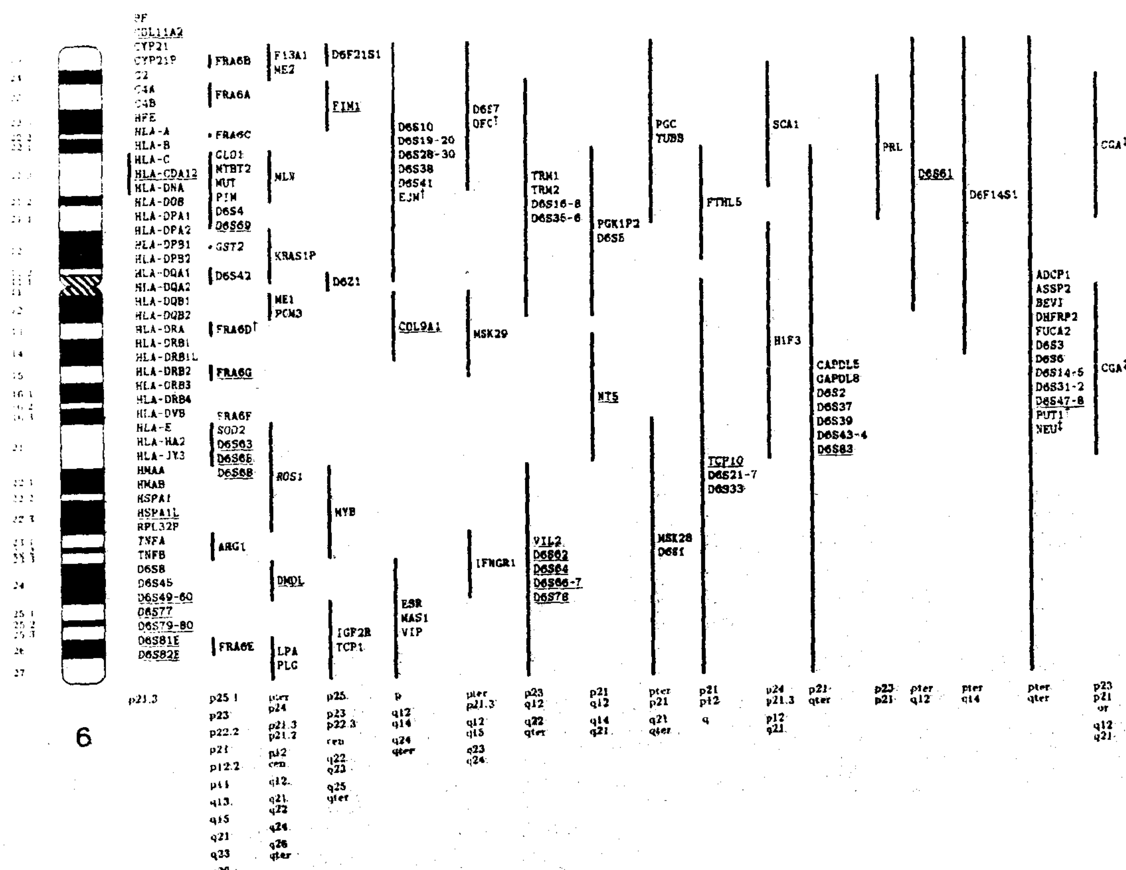

HD
D4F26
D4S10
D4S18-20
D4S23
FRA4A
RAF1P1
GDPR
D4S52
D4S62
LDHAL1
FRA4D
D4S104
D4S106-7
D4S110
D4S117
D4S124
D4S16-7
D4S22
GABRA2
GABRB1
PGM2
D4S35
D4Z1
PEPS
AFP
ALB
RPAFP
PDGFRA
STATH
GC
FRA4B
AREG
IL8
PF4
PBT
D4S1
FGF5
IGJ
INP10
MGSA
ADH1
ADH2
ADH3
GNPTA
ADH5
FDH
D4S34
ADH4
D4S143
PDHAL
IF
EGF
FGFB
IL2
FRA4E
ASMD
SF
TYS
D4S9
D4S24
FGA
FGB
FGG
FABP2
GYPA
GYPB
D4Z2
AGA
ASSP9
D4S40
FRA4C
VLR
TDO2
EDN2
D4S14
D4S112
HVBS6
F11
4

Continued

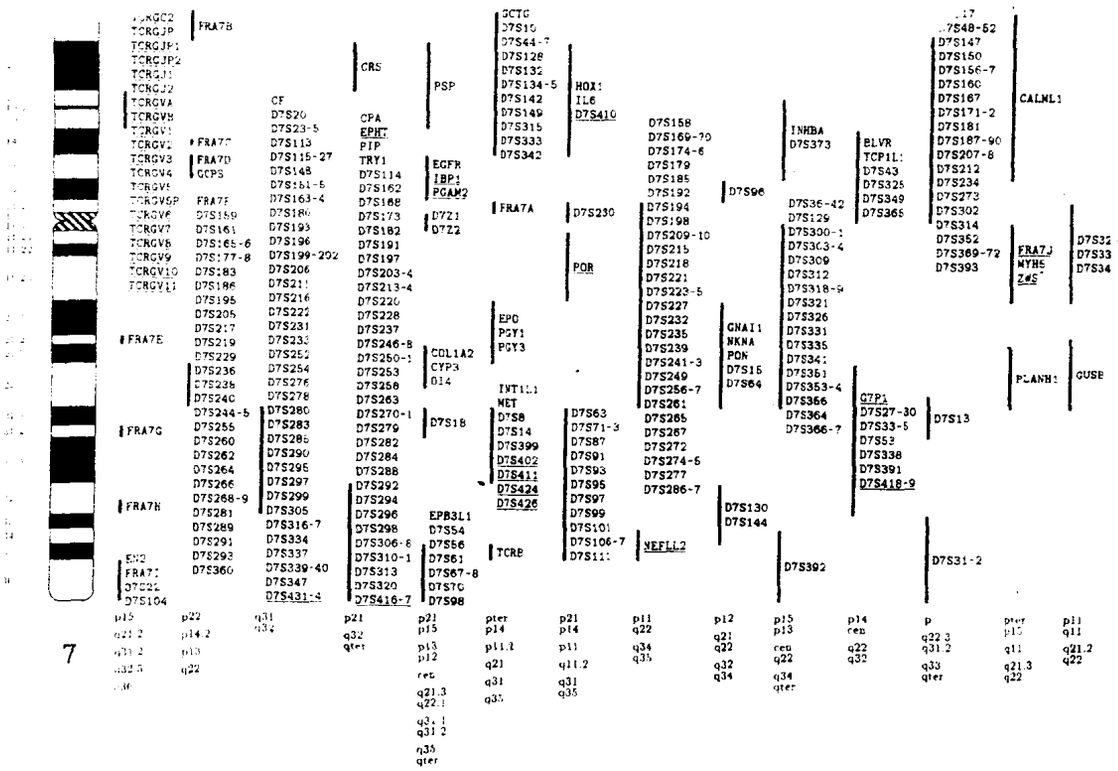

D4S67
MT2P1
DGI1
KIT
PPAT
D4S123
D4S6
D4S12-3
ATP1BL1
LPC2A
D4S138
D4S157-8
ADRA2RL2
ANT1
CD38
GAPDL4
GGTB1
IPO
MDF1
D4S2
D4S58
D4S103
D4S105
D4S130
D4S145
SRIL
D4S64
D4S144
D4S66
4

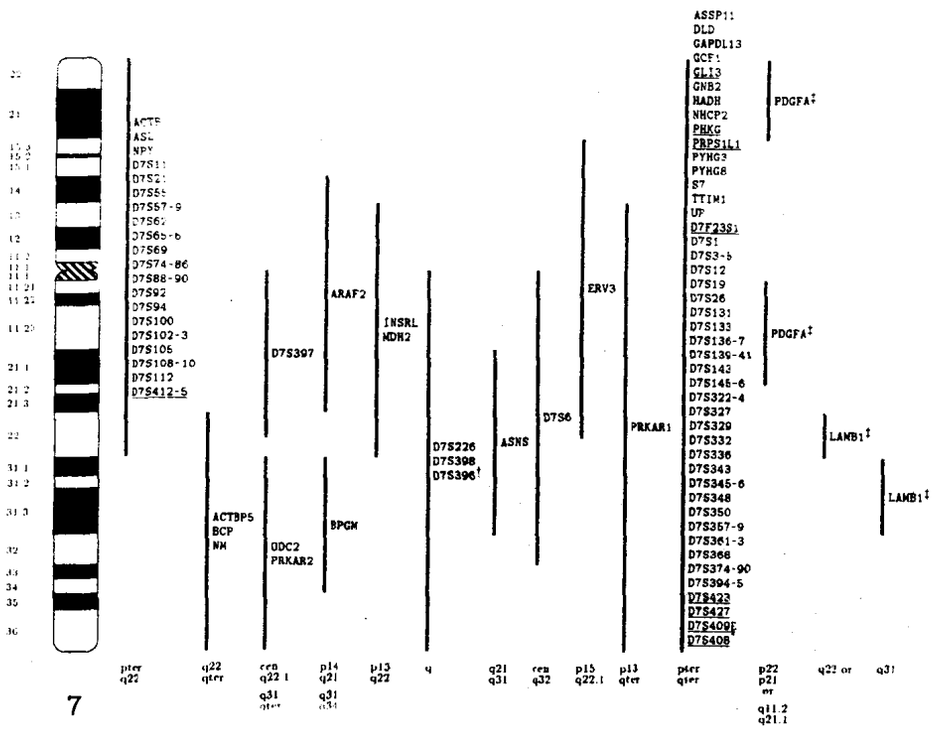

D5S18
D5S23-4
D5S20
D5S28-30
FRA5A
D5Z1
D5Z2
ZNF5
D5S38
FRA5D
FRA5E
FRA5C
CSF1
CHR
D5S43
D5S62
D5S4
D5S47-8
D5S66
D5S59
D5S73-4
D5S88
D5S90
D5S92
D5S95-6
GHR
LARS
D5S76
HEXB
APC
D5S81
D5S84
D5S86
GABRA1
D5S2
D5S22
D5S55
D5S61
D5S66
D5S72
D5S94
D5S10-1
D5S16-7
TARS
D5S21
D5S31-3
SCZD1
D5S6
D5S51
D5S63
D5S78
FRA5F
D5S37
DTS
CSF1R
F12
GAPDL16
GLUT6
PDGFRB
RPS17A
RPS20B
D5S54
D5S67-8
D5S70
D5S91
D5S100
D5S13-5
D5S46
FRA5E
D5S7-8
D5S19
D5S25-6
ASSP9
D5S71
D5S82-3
D5S85
CSF2
EGR1
IL3
IL4
IL5
HMGCS
HPRTP2
MLVI2
ZNF4
D5S27
D5S69
HMGCR
DHLAG
RPS14
SPARC
D5S12
DHFR
D5S97-8
ADRB2R
GRL
D5S57
D5S60
D5S40-1
D5S53
FGFA
C9
D5S99
D5S49-50
D5S52
D5S58
D5S64-5
D5S89
AVRR
D5S39
CAMK4
D5S36
ARSB
D5S105
D5S93
CD14
ASSP10
RPS20A
HTR1A
D5S42
RASA
D5S34-5
ACTBP2
ACTBP4
CTLA3
C6
C7
ERBAL3
ERPL2
FTHL10
GM2A
HARS
MSK11
PCN2
ZNF3
D5F25
D5S1
D5S3
D5S5
D5S9
D5S106
SPINK1
TCP1L2

5

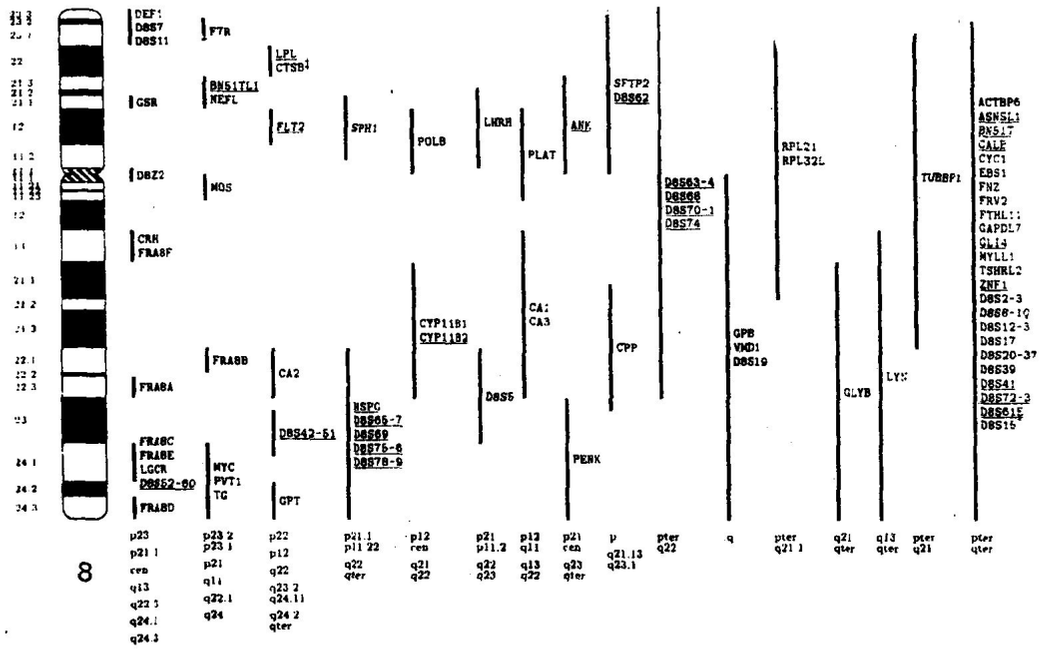

PF
COL11A2
CYP21
CYP21P
C2
C4A
C4B
HFE
HLA-A
HLA-B
HLA-C
HLA-CDA12
HLA-DNA
HLA-DOB
HLA-DPA1
HLA-DPA2
HLA-DPB1
HLA-DPB2
HLA-DQA1
HLA-DQA2
HLA-DQB1
HLA-DQB2
HLA-DRA
HLA-DRB1
HLA-DRB1L
HLA-DRB2
HLA-DRB3
HLA-DRB4
HLA-DVB
HLA-E
HLA-HA2
HLA-JY3
HMAA
HMAB
HSPA1
HSPA1L
RPL32P
TNFA
TNFB
D6S8
D6S45
D6S49-60
D6S77
D6S79-80
D6S81E
D6S82E
FRA6B
FRA6A
FRA6C
GLO1
MTBT2
MUT
PIM
D6S4
D6S69
GST2
D6S42
FRA6D
FRA6G
FRA6F
SOD2
D6S63
D6S65
D6S68
ARG1
FRA6E
F13A1
ME2
MLN
KRAS1P
ME1
PCM3
ROS1
DMDL
LPA
PLG
D6F21S1
FIM1
D6Z1
MYB
IGF2R
TCP1
D6S10
D6S19-20
D6S28-30
D6S38
D6S41
EJM
COL9A1
ESR
MAS1
VIP
D6S7
OFC
MSK29
IFNGR1
TRM1
TRM2
D6S16-8
D6S35-6
VIL2
D6S62
D6S64
D6S66-7
D6S78
PGK1P2
D6S5
MT5
PGC
TUBB
MSK28
D6S1
FTHL5
TCP10
D6S21-7
D6S33
SCA1
H1F3
GAPDL5
GAPDL8
D6S2
D6S37
D6S39
D6S43-4
D6S83
PRL
D6S61
D6F14S1
ADCP1
ASSP2
BEVI
DHFRP2
FUCA2
D6S3
D6S6
D6S14-5
D6S31-2
D6S47-8
PUT1
NEU
CGA

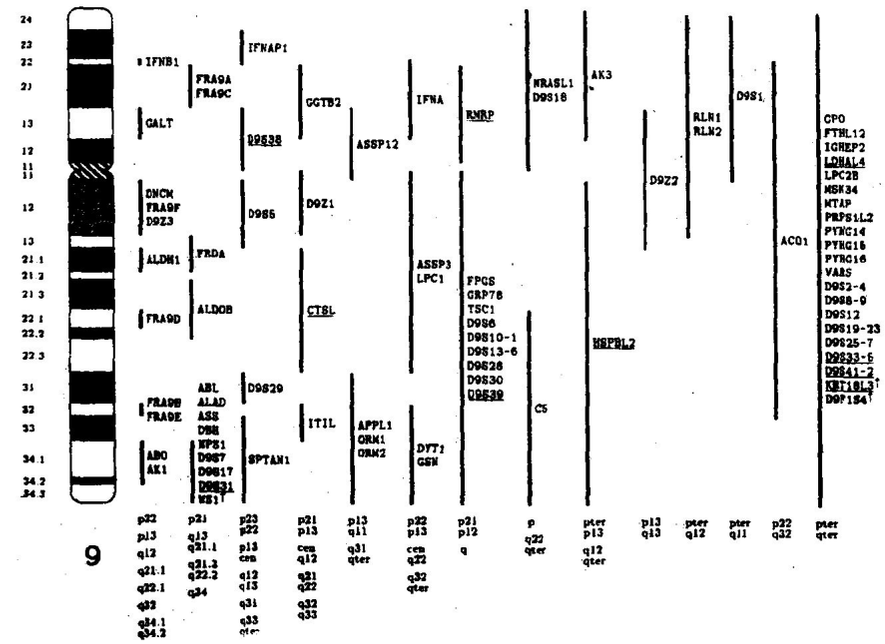
6

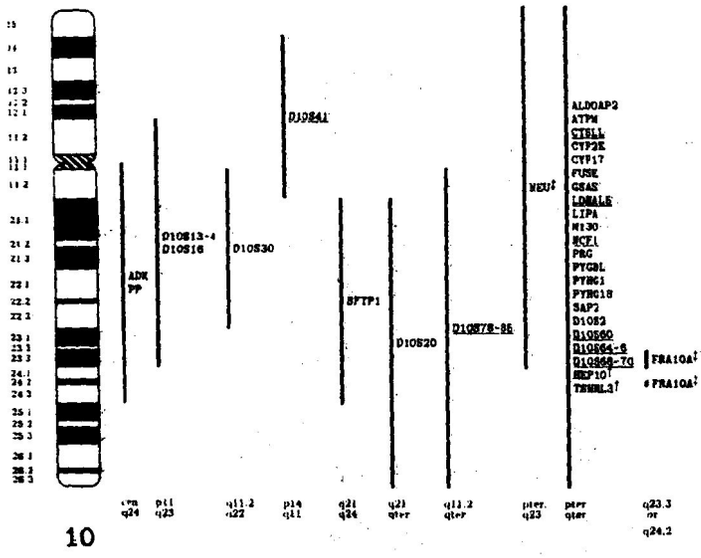


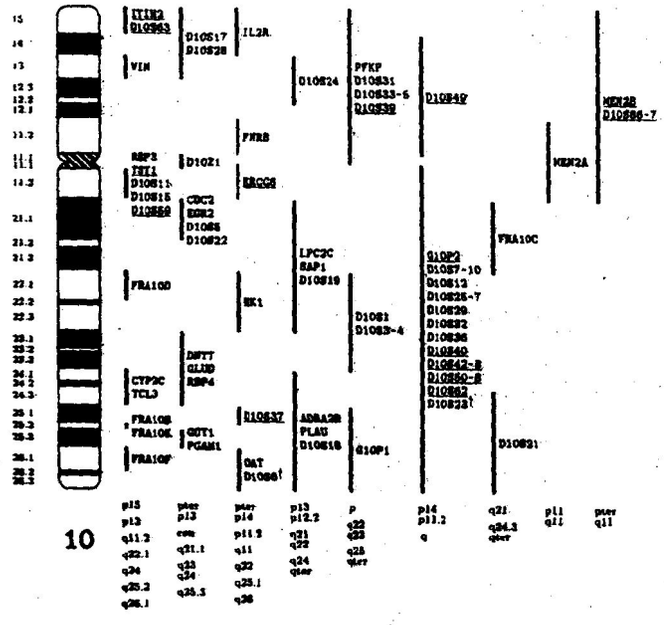


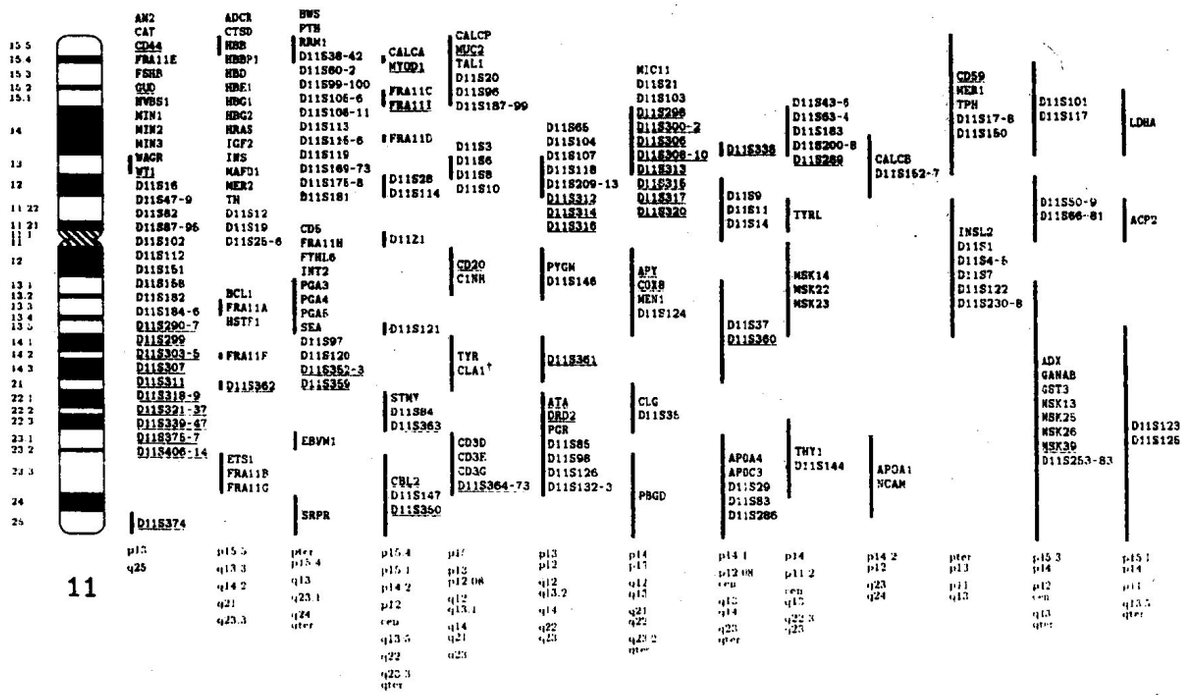
此为试读，需要完整PDF请访问：www.ertongbook.com

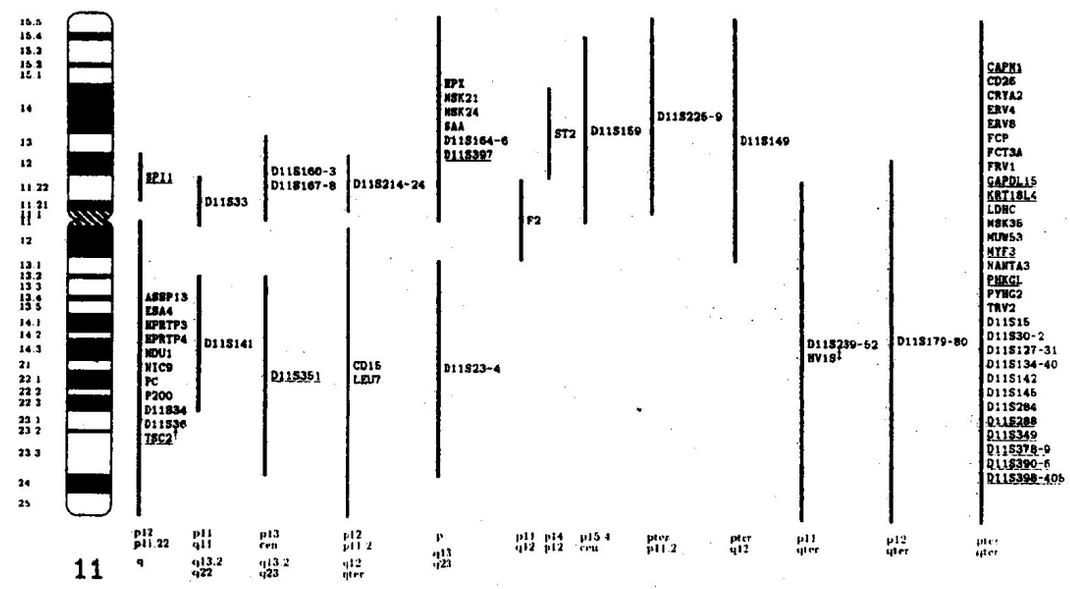

8
DEF1
D8S7
D8S11
GSR
D8Z2
CRH
FRA8F
FRA8A
FRA8C
FRA8E
LGCR
D8S52-60
FRA8D
FTR
RN51TL1
NEFL
MOS
FRA8B
MYC
PVT1
TG
LPL
CTSB
FLT2
CA2
D8S42-51
GPT
SPH1
NSPC
D8S65-7
D8S69
D8S76-8
D8S78-9
POLB
CYP11B1
CYP11B2
D8S5
LHRH
PLAT
CA1
CA3
ANK
PENK
SFTP2
D8S62
CPP
D8S63-4
D8S68
D8S70-1
D8S74
GPB
VMD1
D8S19
RPL21
RPL32L
GLYB
LYN
TUBBP1
ACTBP6
ASNSL1
RN517
CALE
CYC1
EBS1
FNZ
FRV2
FTHL11
GAPDL7
GL14
MYLL1
TSHRL2
ZNF1
D8S2-3
D8S8-10
D8S12-3
D8S17
D8S20-37
D8S39
D8S41
D8S72-3
D8S615
D8S16
p23
p21.1
cen
q13
q22.3
q24.1
q24.3
p23.2
p23.1
p21
q11
q22.1
q24
p22
p12
q22
q23.2
q24.11
q24.2
qter
p21.1
p11.22
q22
qter
p12
cen
q21
q22
p21
p11.2
q22
q23
p13
q11
q13
q22
p21
cen
q23
qter
p
q21.13
q23.1
pter
q22
q
pter
q21.1
q21
qter
q13
qter
pter
q21
pter
qter

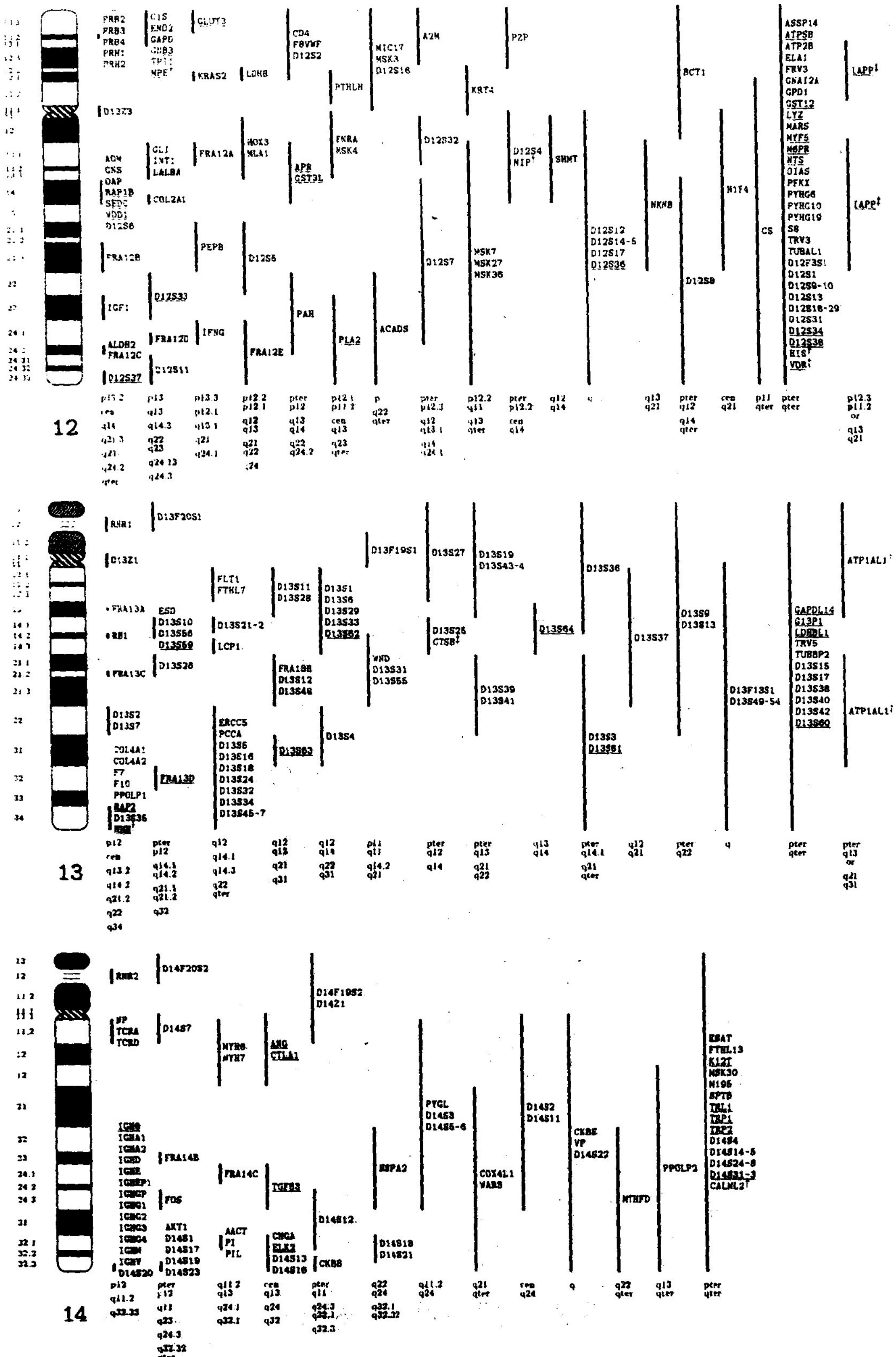

9
IFNB1
GALT
DNCK
FRA9F
D9Z3
ALDH1
FRA9D
ABO
AK1
FRA9A
FRA9C
FRDA
ALDOB
ABL
ALAD
ASS
DBH
KPS1
D9S7
D9S17
D9S31
WS1
IFNAP1
D9S38
D9S5
D9S29
SPTAN1
GGTB2
D9Z1
CTSL
ITIL
ASSP12
APPL1
ORM1
ORM2
IFNA
ASSP3
LPC1
DYT1
GSN
RMRP
FPGS
GRP78
TSC1
D9S6
D9S10-1
D9S13-6
D9S28
D9S30
D9S39
NRASL1
D9S18
C5
AK3
HSPBL2
D9Z2
RLN1
RLN2
D9S1
ACO1
CPO
FTHL12
IGHEP2
LDHAL4
LPC2B
MSK34
NTAP
PRPS1L2
PYNG14
PYRG15
PYRG16
VARS
D9S2-4
D9S8-9
D9S12
D9S19-23
D9S25-7
D9S33-6
D9S41-2
KRT18L3
D9F154
p32
p13
q12
q21.1
q22.1
q32
q34.1
q34.2
p21
q13
q21.1
q21.3
q22.2
q34
p23
p22
p13
cen
q12
q13
q31
q33
qter
p21
p13
cen
q12
q21
q22
q32
q33
p13
q11
q31
qter
p22
p13
cen
q22
q32
qter
p21
p12
q
p
q22
qter
pter
p13
q12
qter
p13
q13
pter
q12
pter
q11
p22
q32
pter
qter


10
ADK
PP
D10S13-4
D10S16
D10S30
D10S41
SFTP1
D10S20
D10S78-85
NEU
ALDOAP2
ATPM
CYSLL
CYP2E
CYP17
FUSE
GSAS
LDHALE
LIPA
MI30
MCF1
PRG
PYGBL
PYRC1
PYRC18
SAP2
D10S2
D10S60
D10S64-6
D10S69-70
SEP10
TSNRL3
FRA10A
FRA10A
ter
q24
p11
q23
q11.2
q22
p14
q11
q21
q24
q21
qter
q11.2
qter
pter.
q23
pter
qter
q23.3
or
q24.2


10
ITIH2
D10S63
D10S17
D10S28
IL2R
VIM
D10S24
PFKP
D10S31
D10S33-5
D10S39
D10S49
MEN2B
D10S86-7
FNRB
RBP3
D10Z1
MEN2A
TRT1
D10S11
D10S15
D10S50
ERCC6
CDC2
EGR2
D10S5
D10S22
FRA10C
LPC2C
SAP1
D10S19
FRA10D
SK1
D10S1
D10S3-4
D10P2
D10S7-10
D10S12
D10S25-7
D10S29
D10S32
D10S36
D10S40
D10S42-3
D10S50-3
D10S62
D10S23
DNTT
GLHD
RBP4
CYP3C
TCL3
D10S37
ADRA2B
PLAU
D10S18
FRA10B
FRA10E
GUT1
PGAM1
G10P1
D10S21
FRA10F
GAT
D10S6
p15
p13
q11.2
q22.1
q24
q25.2
q25.1
pter
p13
cen
q21.1
q23
q24
q25.5
pter
p14
p11.2
q11
q22
q25.1
q26
p13
p12.2
q21
q22
q24
qter
p
q22
q23
q25
qter
p14
p13.2
q
q21
q24.3
qter
p11
q11
pter
q11

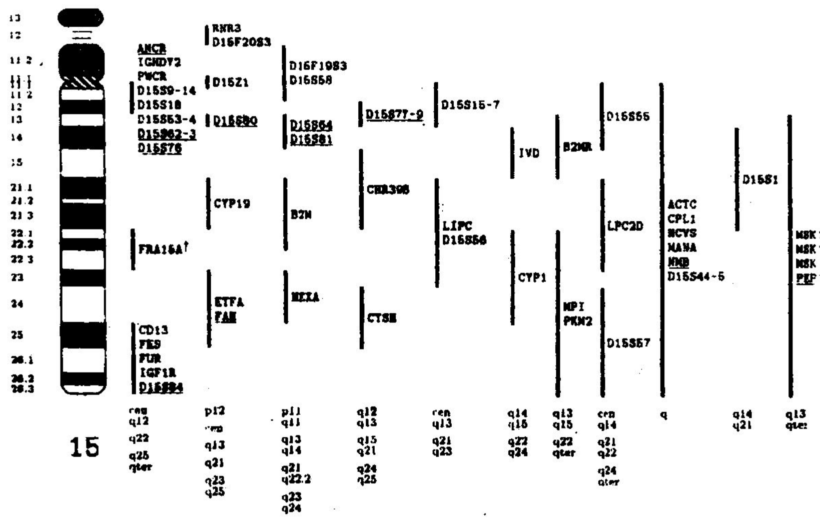

11
AM2
CAT
CD44
FRA11E
FSHR
GUD
HVBS1
MIN1
MIN2
MIN3
WAGR
WT1
D11S16
D11S47-9
D11S62
D11S87-96
D11S102
D11S112
D11S151
D11S158
D11S182
D11S184-6
D11S290-7
D11S299
D11S303-5
D11S307
D11S311
D11S318-9
D11S321-37
D11S339-47
D11S375-7
D11S406-14
D11S374
ADCR
CTSD
HBB
HBBP1
HBD
HBE1
HBG1
HBG2
HRAS
IGF2
INS
MAFD1
MER2
TH
D11S12
D11S19
D11S25-6
BCL1
FRA11A
HSTF1
FRA11F
D11S362
ETS1
FRA11B
FRA11G
BWS
PTH
RAM1
D11S38-42
D11S60-2
D11S99-100
D11S106-6
D11S108-11
D11S113
D11S126-6
D11S119
D11S169-73
D11S175-8
D11S181
CD5
FRA11H
FTHL6
INT2
PGA3
PGA4
PGA5
SEA
D11S97
D11S120
D11S352-3
D11S359
EBVM1
SRPR
CALCA
MYOD1
FRA11C
FRA11I
FRA11D
D11S28
D11S114
D11I21
D11S121
STMY
D11S84
D11S363
CBL2
D11S147
D11S350
CALCP
MUC2
TAL1
D11S20
D11S96
D11S187-99
D11S3
D11S6
D11S8
D11S10
CD20
C1NH
TYR
CLA1
CD3D
CD3E
CD3G
D11S364-73
D11S65
D11S104
D11S107
D11S118
D11S209-13
D11S312
D11S314
D11S316
PYGM
D11S146
D11S361
ATA
DRD2
PGR
D11S85
D11S98
D11S126
D11S132-3
MIC11
D11S21
D11S103
D11S298
D11S300-2
D11S306
D11S308-10
D11S313
D11S315
D11S317
D11S320
APY
COX8
MEN1
D11S124
CLG
D11S35
PBGD
D11S338
D11S9
D11S11
D11S14
D11S37
D11S360
APOA4
APOC3
D11S29
D11S83
D11S286
D11S43-6
D11S63-4
D11S183
D11S200-8
D11S248
TYRL
MSK14
MSK22
MSK23
THY1
D11S144
CALCB
D11S152-7
APOA1
NCAM
CD59
MER1
TPH
D11S17-8
D11S150
INSL2
D11S1
D11S4-5
D11S7
D11S122
D11S230-8
D11S101
D11S117
D11S50-9
D11S66-81
ADX
GANAB
GST3
MSK13
MSK25
MSK26
MSK39
D11S253-83
LDHA
ACP2
D11S123
D11S125
p13
q25
p15.5
q13.3
q14.2
q21
q25.3
pter
p15.4
q13
q23.1
q24
qter
p15.4
p15.1
p14.2
p12
cen
q13.5
q22
q25.3
qter
p15
p13
p12.08
q12
q13.1
q14
q21
q23
p13
p12
q12
q13.2
q14
q22
q23
p14
p15
q12
q13
q21
q22
q23.2
qter
p14.1
p12.08
cen
q13
q14
q23
qter
p14
p11.2
cen
q13
q22.3
q23
p14.2
p12
q23
q24
pter
p13
p11
q13
p15.3
p14
p12
cen
q13
qter
p15.1
p14
p11
q13.5
qter

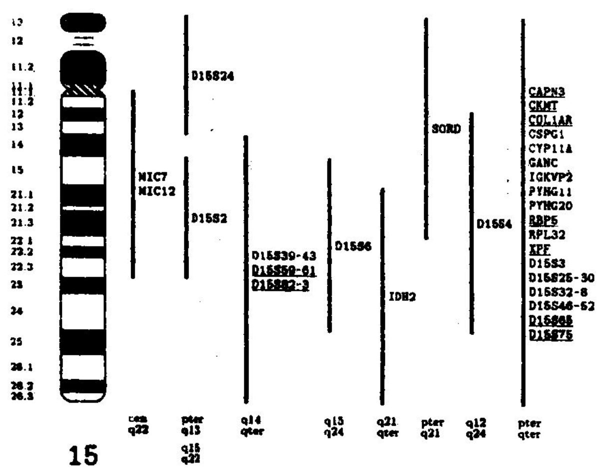

11
EPI1
D11S33
D11S160-3
D11S167-8
D11S214-24
EPX
MSK21
MSK24
SAA
D11S164-6
D11S397
F2
ST2
D11S159
D11S226-9
D11S149
D11S239-52
D11S179-80
ASBP13
ESA4
HPRTP3
HPRTP4
NDU1
NIC9
PC
P200
D11S34
D11S36
TSC2
D11S141
D11S351
CD15
LEU7
D11S23-4
CAPN1
CD26
CRYA2
ERV4
ERV8
FCP
FCT3A
FRV1
GAPDL15
KRT18L4
LDHC
MSK36
MUW53
MYF3
NAHTA3
PHKG1
PYMG2
TRV2
D11S15
D11S30-2
D11S127-31
D11S134-40
D11S142
D11S145
D11S284
D11S288
D11S349
D11S378-9
D11S390-6
D11S398-406
p12
p11.22
q
p11
q11
q13.2
q22
p13
cen
q13.2
q23
p12
p11.2
q12
qter
p
q13
q23
p11
q12
p14
p12
p15.4
cen
pter
p11.2
pter
q12
p11
qter
p12
qter
pter
qter

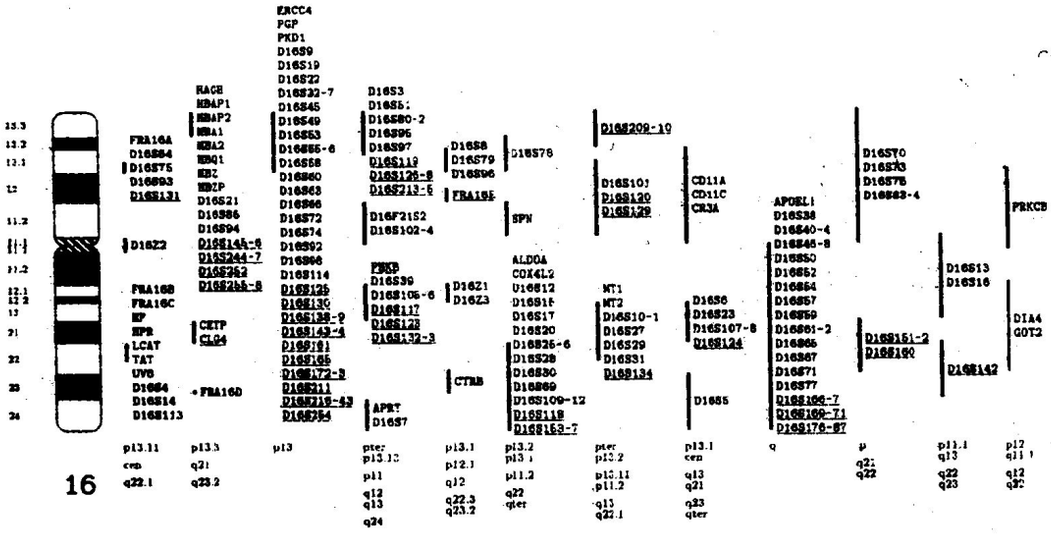

12
PRB2 PRB3 PRB4 PRH1 PRH2
C1S ENO2 GAPD GNB3 TPI1 NPE
GLUT3
KRAS2
LDHB
CD4 F8VWF D12S2
MIC17 MSK3 D12S16
A2M
PZP
BCT1
ASSP14 ATP5B ATP2B ELA1 FRV3 GNAI2A GPD1 GST12 LYZ MARS MYF5 M6PR NTS OIAS PFKX PYHG6 PYHG10 PYHG19 S8 TRV3 TUBAL1 D12F3S1 D12S1 D12S9-10 D12S13 D12S18-29 D12S31 D12S34 D12S38 RIS VDR
IAPP
PTHLH
KRT4
D12Z3
ACM CNS OAP RAP1B SEDC VDD1 D12S6
GLI INT1 LALBA
COL2A1
FRA12A
HOX3 MLA1
APR GST3L
FNRA MSK4
D12S32
D12S4 NIP
SHMT
NKNB
N1F4
CS
PEPB
D12S5
D12S12 D12S14-5 D12S17 D12S36
MSK7 MSK27 MSK36
D12S7
D12S8
FRA12B
IGF1
D12S33
FRA12D
IFNG
PAH
PLA2
ACADS
FRA12E
ALDH2 FRA12C
D12S37
D12S11
13
RNR1
D13F20S1
D13Z1
FLT1 FTHL7
D13S11 D13S28
D13S1 D13S6 D13S29 D13S33 D13S52
D13F19S1
D13S27
D13S19 D13S43-4
D13S36
D13S9 D13S13
ATP1AL1
FRA13A
ESD D13S10 D13S56 D13S59
D13S21-2
D13S25 CTSB
D13S64
D13S37
GAPDL14 G13P1 LDHBL1 TRV5 TUBBP2 D13S15 D13S17 D13S38 D13S40 D13S42 D13S60
RB1
LCP1
WND D13S31 D13S55
FRA13C
D13S26
FRA13B D13S12 D13S46
D13S39 D13S41
D13F13S1 D13S49-54
D13S2 D13S7
ERCC5 PCCA D13S5 D13S16 D13S18 D13S24 D13S32 D13S34 D13S45-7
D13S4
D13S3 D13S61
D13S63
COL4A1 COL4A2 F7 F10 PPOLP1
FRA13D
D13S35
14
RNR2
D14F20S2
D14F19S2 D14Z1
NP TCRA TCRD
D14S7
MYH6 MYH7
ANG CTLA1
ESAT FTHL13 K12T MSK30 N196 SPTB TRL1 TRP1 TRP2 D14S4 D14S14-5 D14S24-8 D14S31-3 CALML2
PYGL D14S3 D14S5-6
D14S2 D14S11
CKBE VP D14S22
IGHG IGHA1 IGHA2 IGHD IGHE IGHEP1 IGHGP IGHG1 IGHG2 IGHG3 IGHG4 IGHM IGHV D14S20
FRA14B
FRA14C
TGFB3
HSPA2
COX4L1 WARS
PPOLP2
MTHFD
FOS
AKT1 D14S1 D14S17 D14S19 D14S23
AACT PI PIL
CHGA ELK2 D14S13 D14S16
CKBB
D14S12
D14S18 D14S21

CF 9201/9

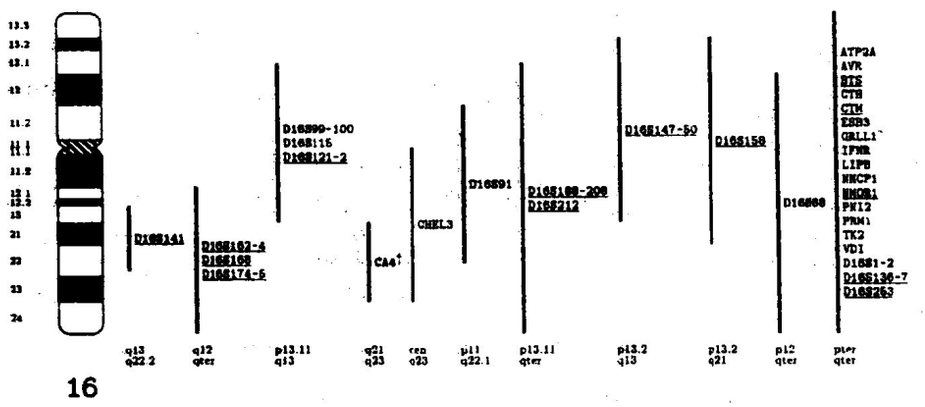
B 45


15
ANCR
IGHDY2
PWCR
D15S9-14
D15S18
D15S63-4
D15S62-3
D15S76
FRA15A
CD13
FES
FUR
IGF1R
D15S84
RNR3
D15F20S3
D15Z1
D15S80
CYP19
ETFA
FAH
D15F19S3
D15S58
D15S64
D15S81
B2M
HEXA
D15S77-9
CHR39B
CTSH
D15S15-7
LIPC
D15S56
IVD
CYP1
B2MR
MPI
PKM2
D15S55
LPC2D
D15S57
ACTC
CPL1
HCVS
MANA
NMB
D15S44-5
D15S1
PEP


15
MIC7
MIC12
D15S24
D15S2
D15S39-43
D15S59-61
D15S82-3
D15S6
IDH2
SORD
D15S4
CAPN3
CKMT
COL1AR
CSPG1
CYP11A
GANC
IGKVP2
PYHG11
PYHG20
RBP5
RPL32
XPF
D15S3
D15S25-30
D15S32-8
D15S46-52
D15S65
D15S75



Continued



此为试读，需要完整PDF请访问：www.ertongbook.com