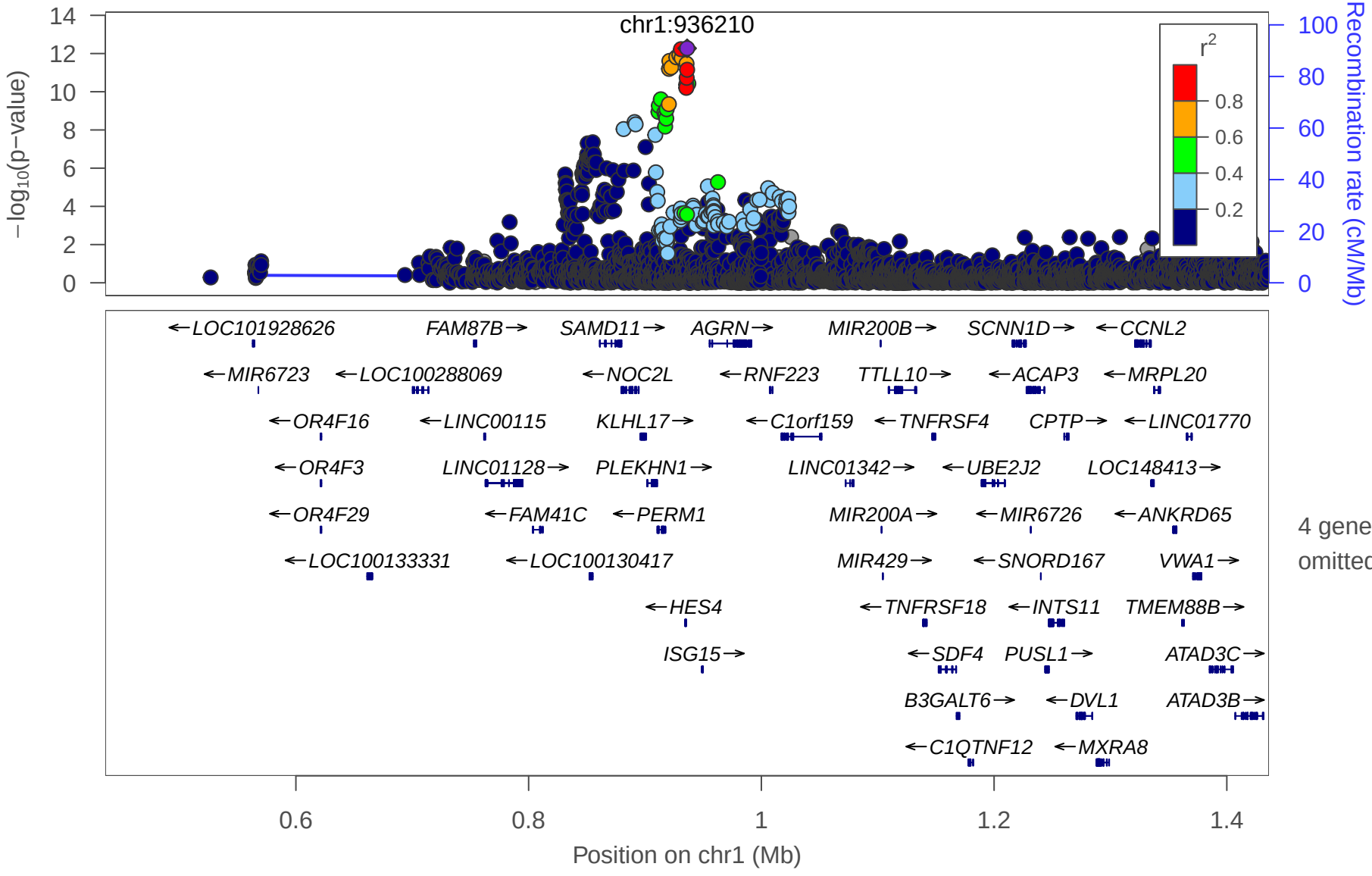
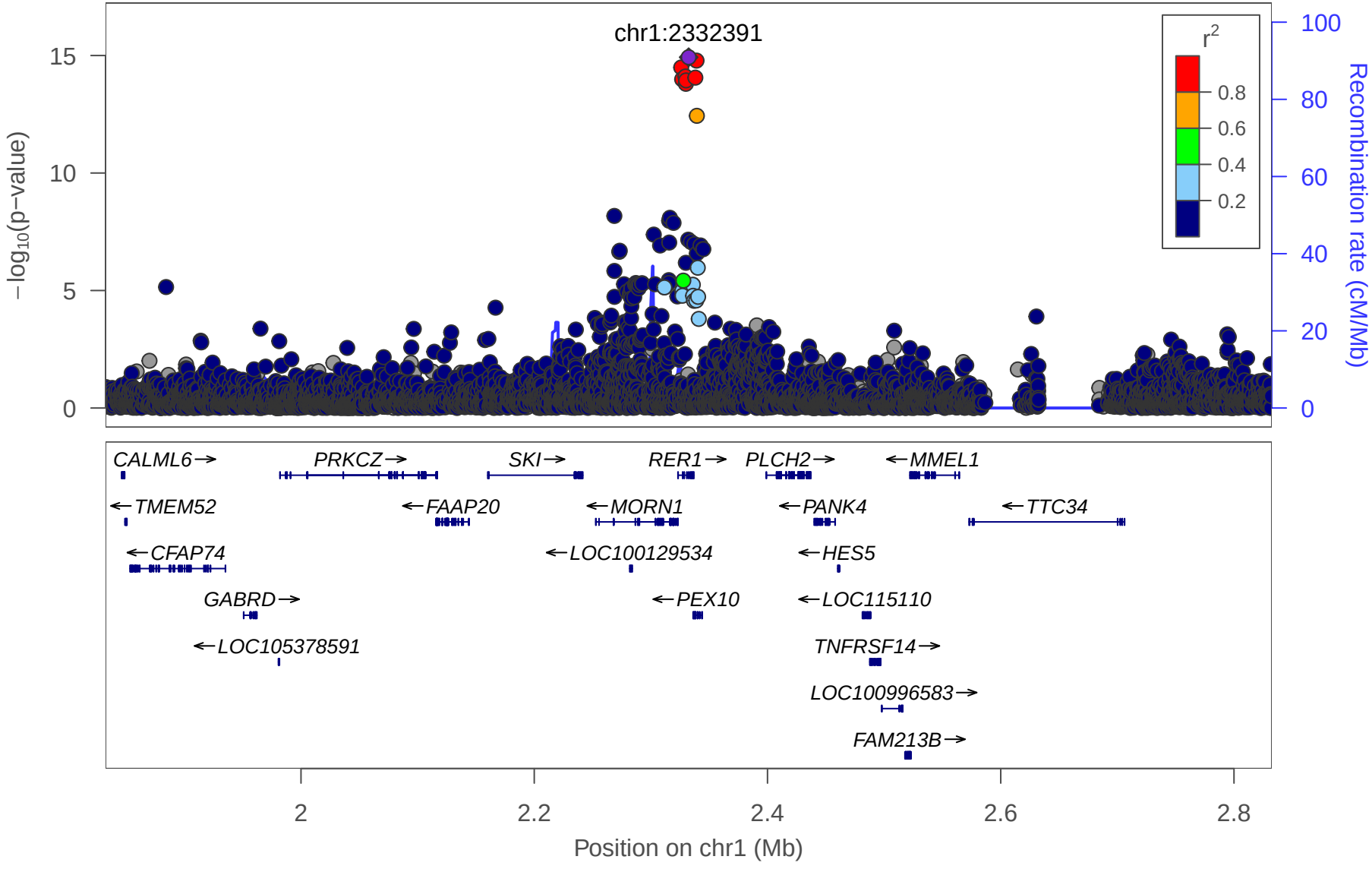
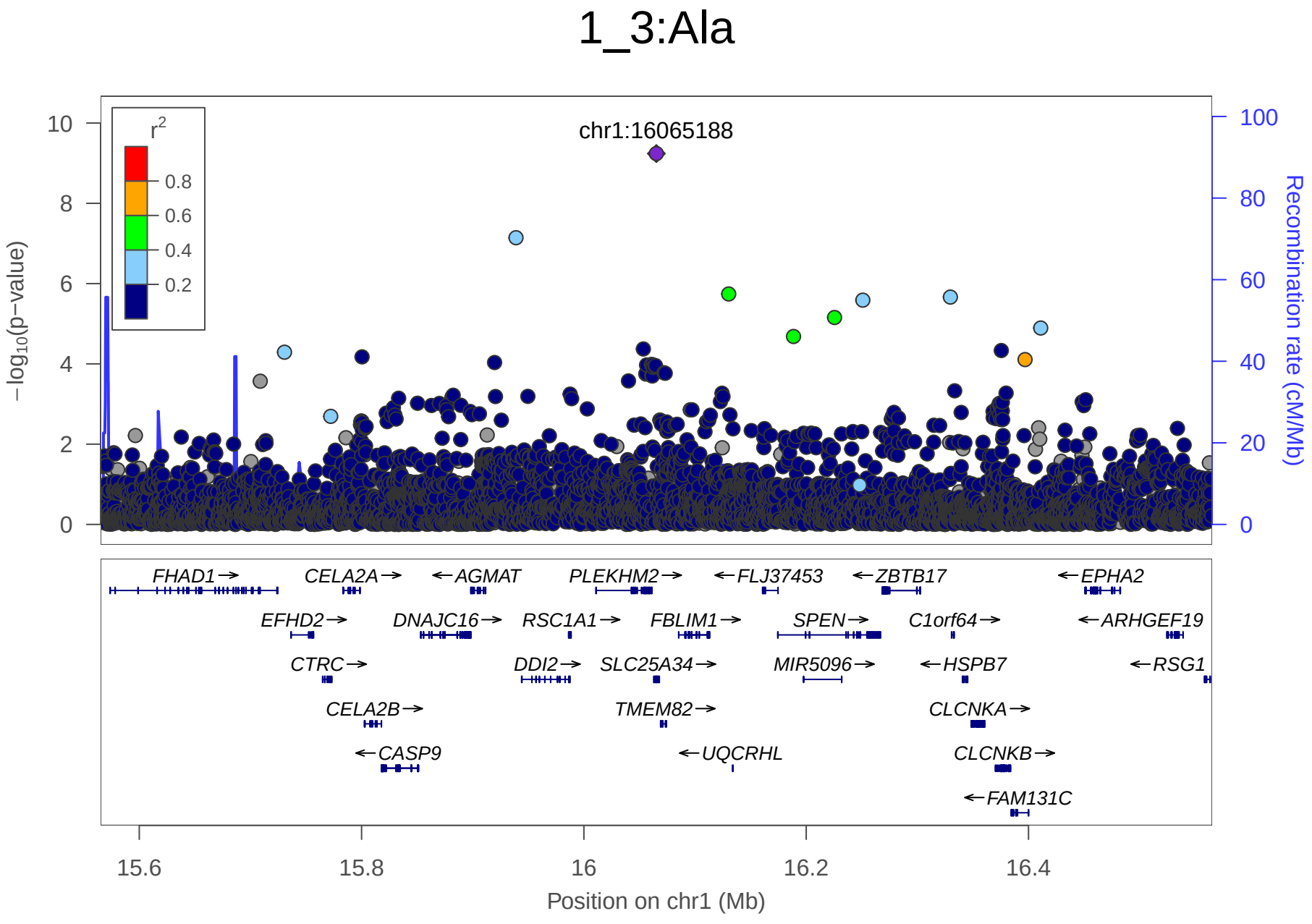
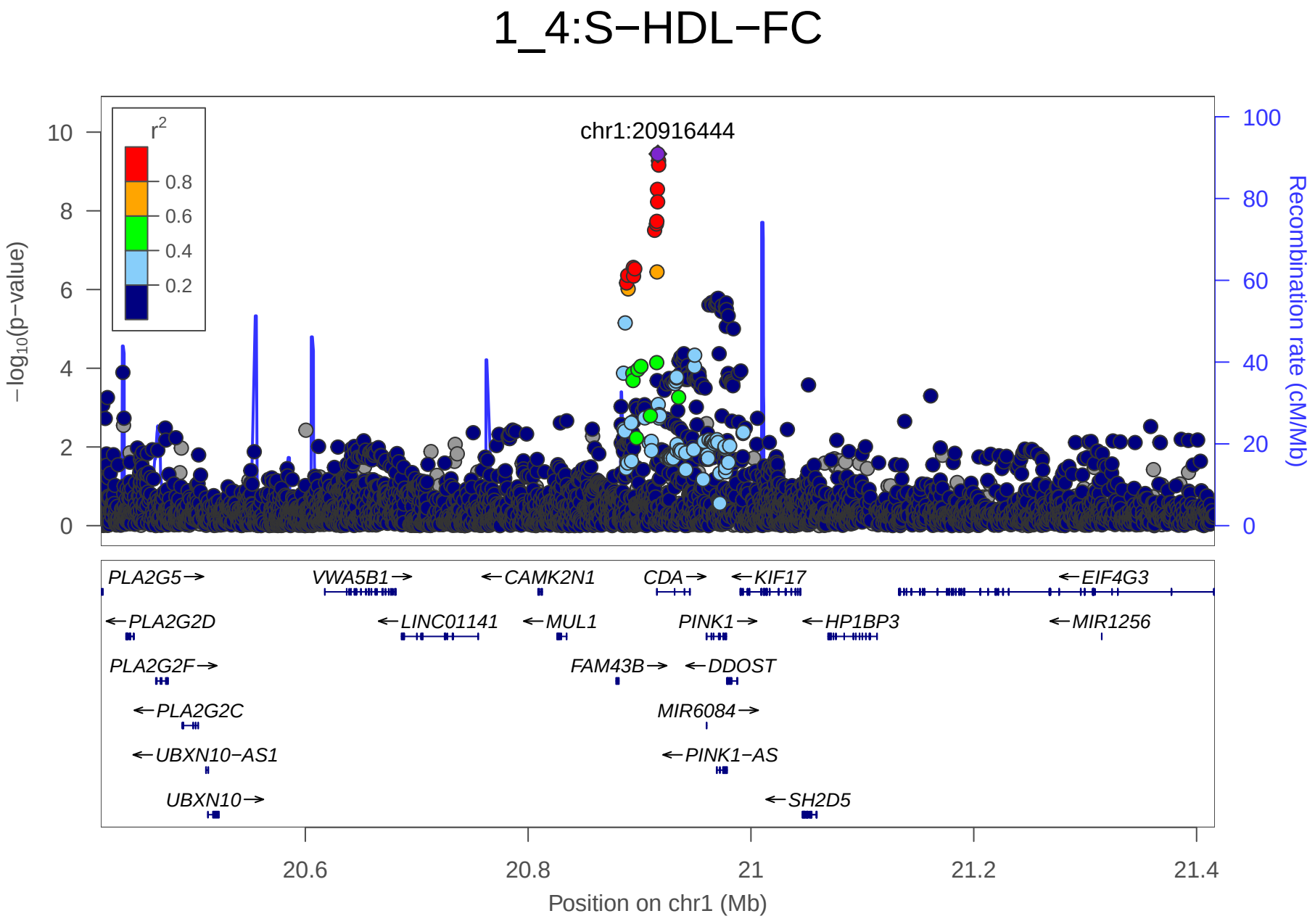
1_1:Ala

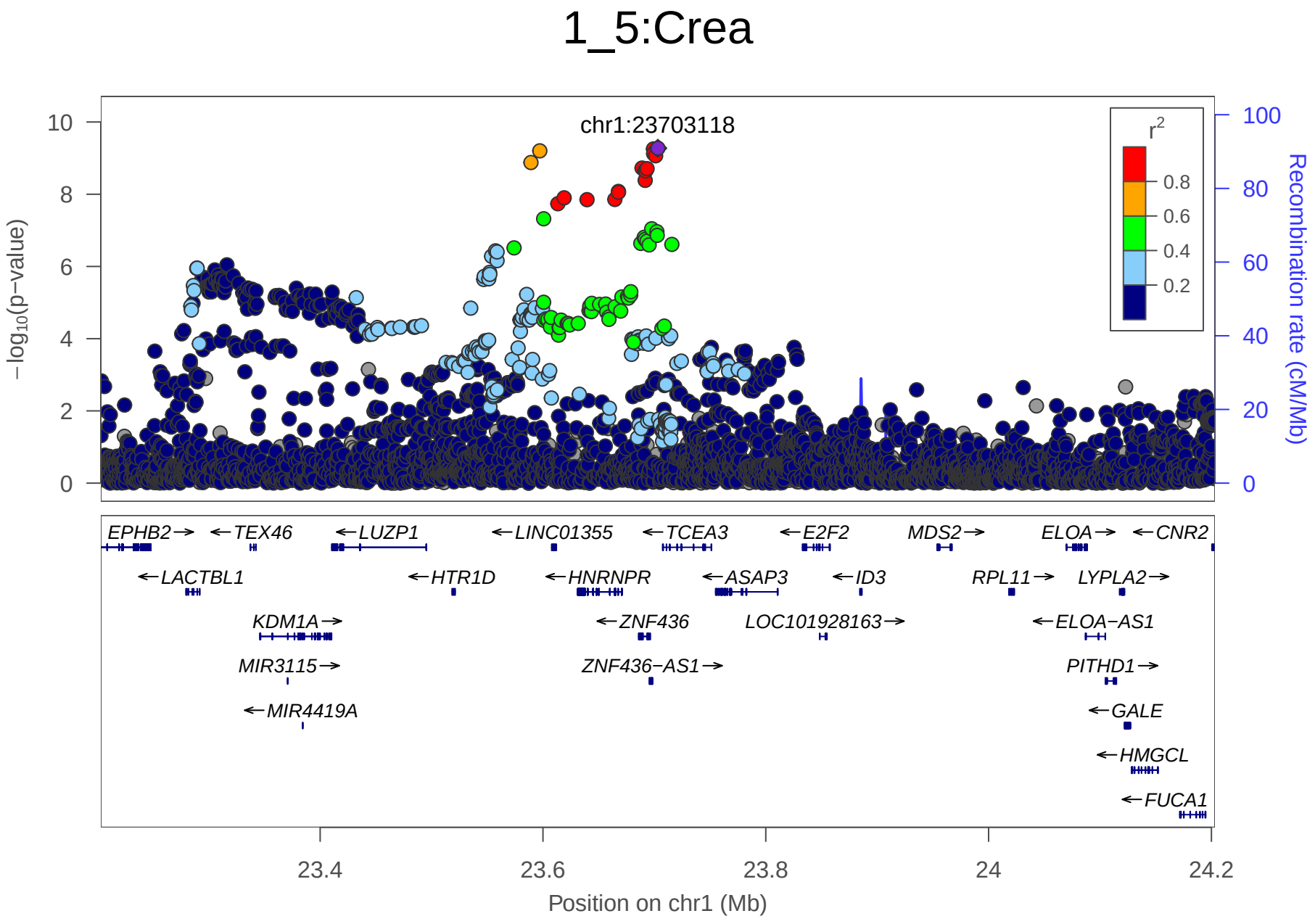

chr1:936210
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
14
12
10
8
6
4
2
0
100
80
60
40
20
0
←LOC101928626
FAM87B→
SAMD11→
AGRN→
MIR200B→
SCNN1D→
←CCNL2
←MIR6723
←LOC100288069
←NOC2L
←RNF223
TTLL10→
←ACAP3
←MRPL20
←OR4F16
←LINC00115
KLHL17→
←C1orf159
←TNFRSF4
CPTP→
←LINC01770
←OR4F3
LINC01128→
PLEKHN1→
LINC01342→
←UBE2J2
LOC148413→
←OR4F29
←FAM41C
←PERM1
MIR200A→
←MIR6726
←ANKRD65
←LOC100133331
←LOC100130417
MIR429→
←SNORD167
VWA1→
←HES4
←TNFRSF18
←INTS11
TMEM88B→
ISG15→
←SDF4
PUSL1→
ATAD3C→
B3GALT6→
←DVL1
ATAD3B→
←C1QTNF12
←MXRA8
4 genes
omitted
0.6
0.8
1
1.2
1.4
Position on chr1 (Mb)

1_2:LAbyFA

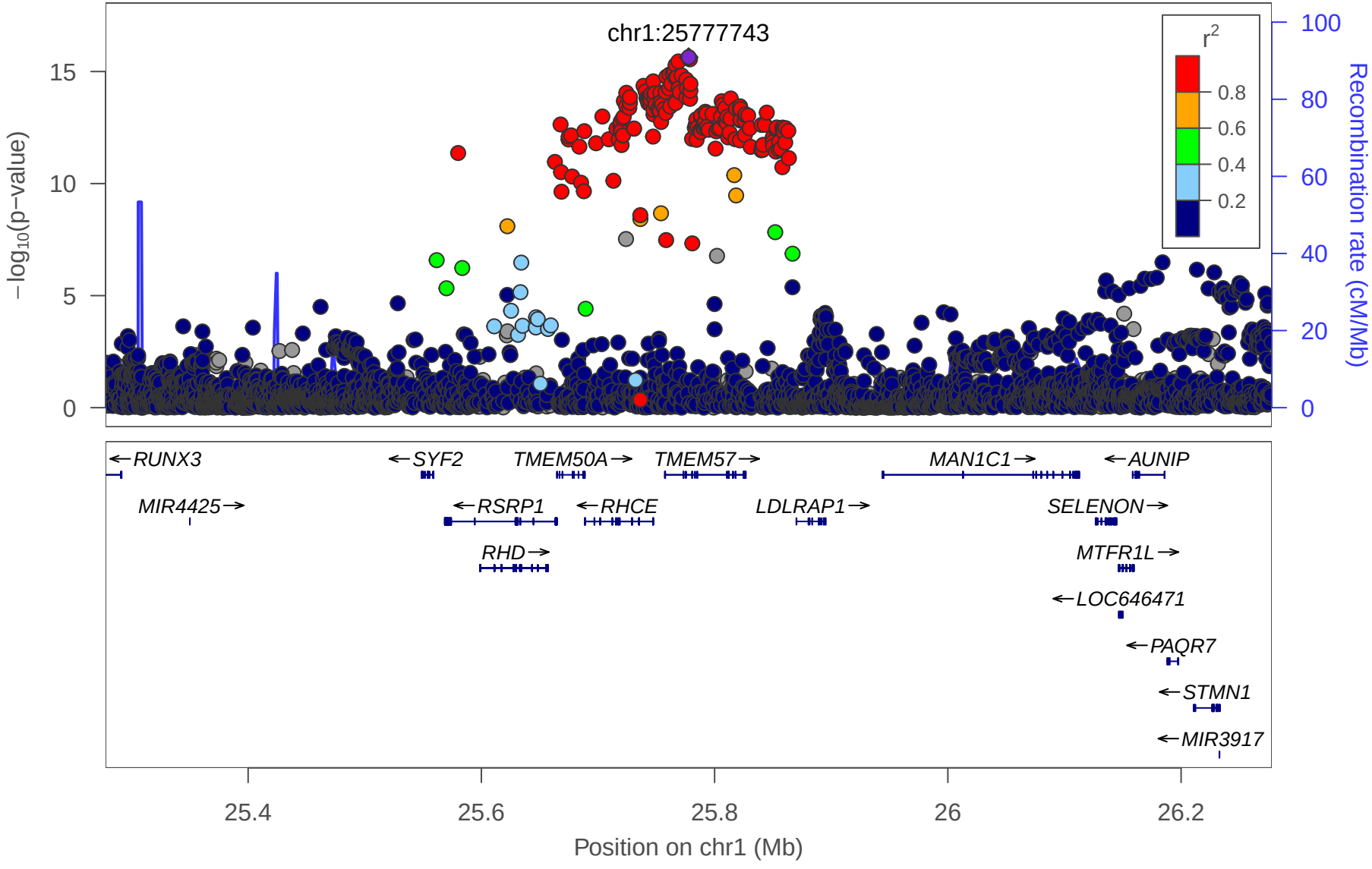

chr1:2332391
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CALML6
PRKCZ
SKI
RER1
PLCH2
MMEL1
TMEM52
FAAP20
MORN1
PANK4
TTC34
CFAP74
LOC100129534
HES5
GABRD
PEX10
LOC115110
LOC105378591
TNFRSF14
LOC100996583
FAM213B
Position on chr1 (Mb)

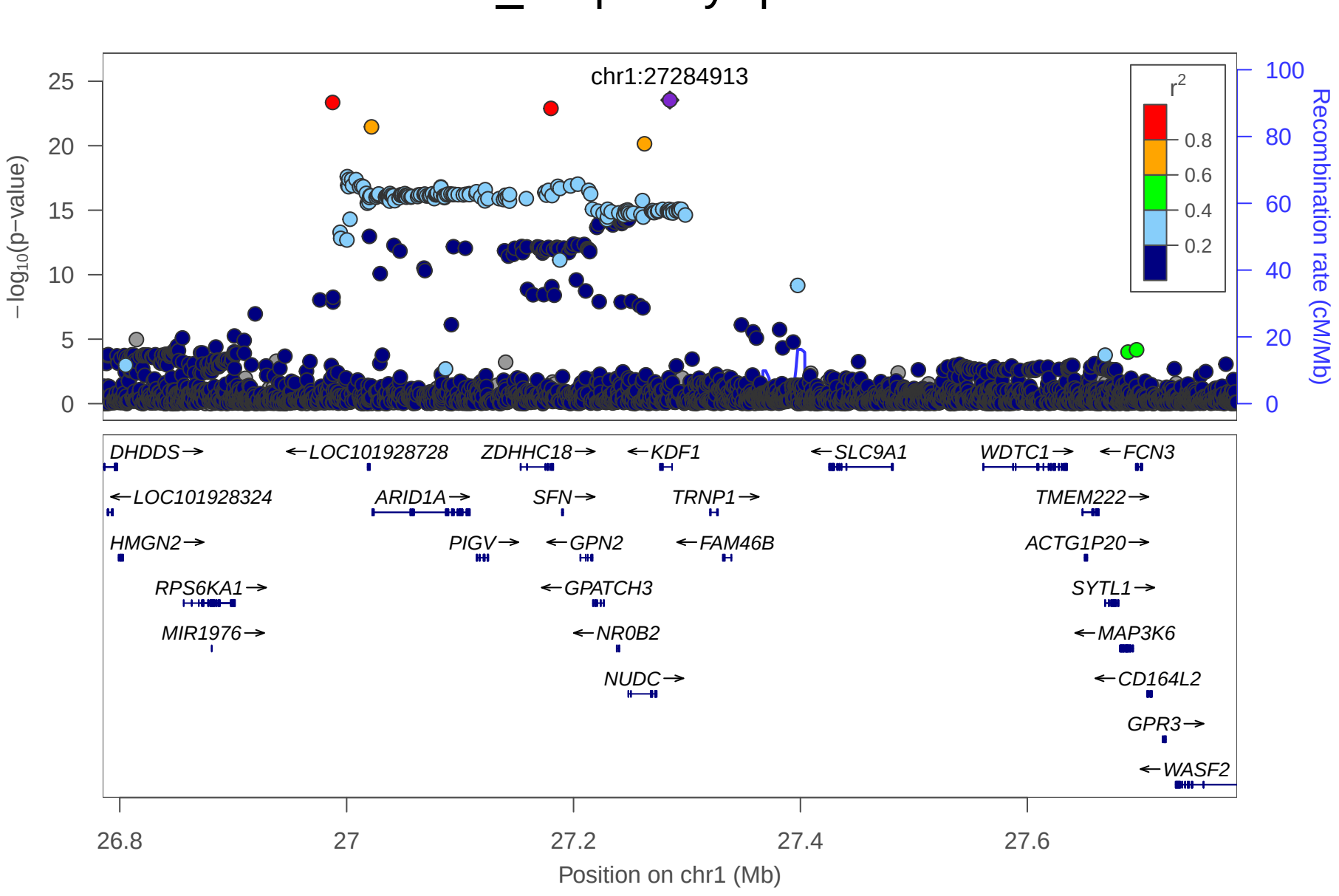

1_3:Ala
chr1:16065188
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FHAD1
CELA2A
AGMAT
PLEKHM2
FLJ37453
ZBTB17
EPHA2
EFHD2
DNAJC16
RSC1A1
FBLIM1
SPEN
C1orf64
ARHGEF19
CTRC
DDI2
SLC25A34
MIR5096
HSPB7
RSG1
CELA2B
TMEM82
CLCNKA
CASP9
UQCRHL
CLCNKB
FAM131C
Position on chr1 (Mb)


1_4:S−HDL−FC
chr1:20916444
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PLA2G5→
VWA5B1→
←CAMK2N1
CDA→
←KIF17
←EIF4G3
←PLA2G2D
←LINC01141
←MUL1
PINK1→
←HP1BP3
←MIR1256
PLA2G2F→
FAM43B→
←DDOST
←PLA2G2C
MIR6084→
←UBXN10−AS1
←PINK1−AS
UBXN10→
←SH2D5
Position on chr1 (Mb)

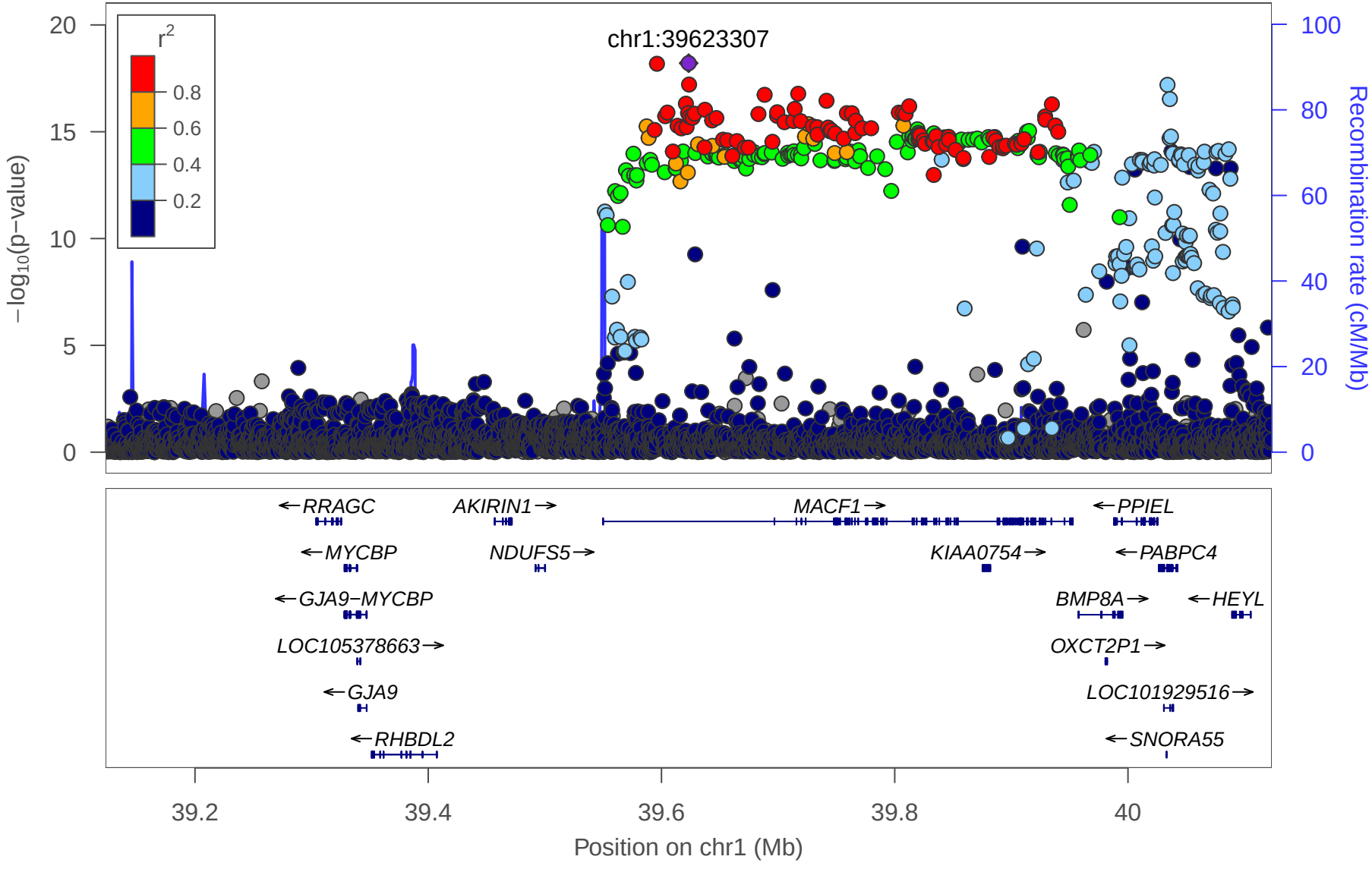

1_5:Crea
chr1:23703118
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
EPHB2
TEX46
LUZP1
LINC01355
TCEA3
E2F2
MDS2
ELOA
CNR2
LACTBL1
HTR1D
HNRNPR
ASAP3
ID3
RPL11
LYPLA2
KDM1A
ZNF436
LOC101928163
ELOA−AS1
MIR3115
ZNF436−AS1
PITHD1
MIR4419A
GALE
HMGCL
FUCA1
Position on chr1 (Mb)

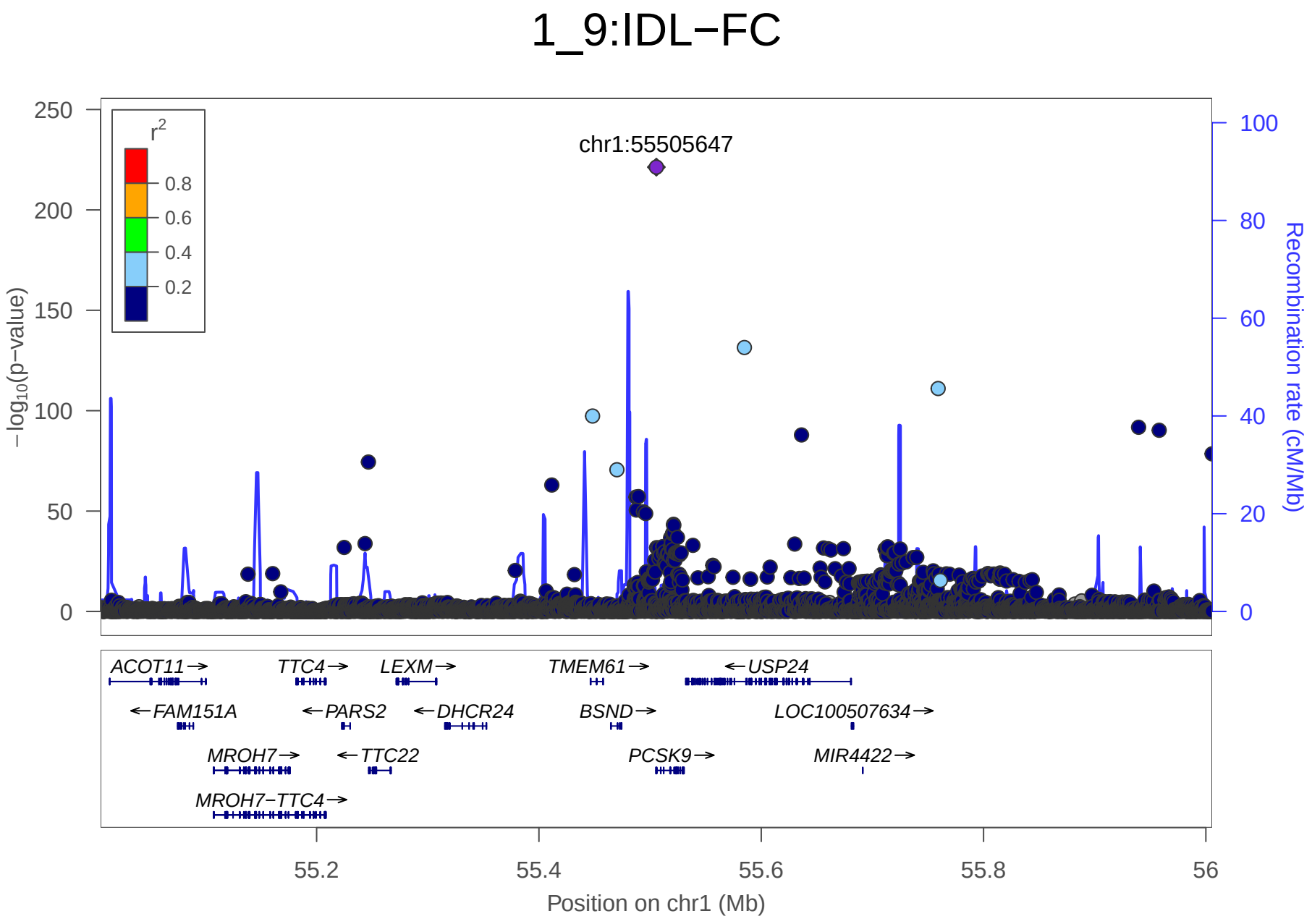
1_6:M−LDL−P

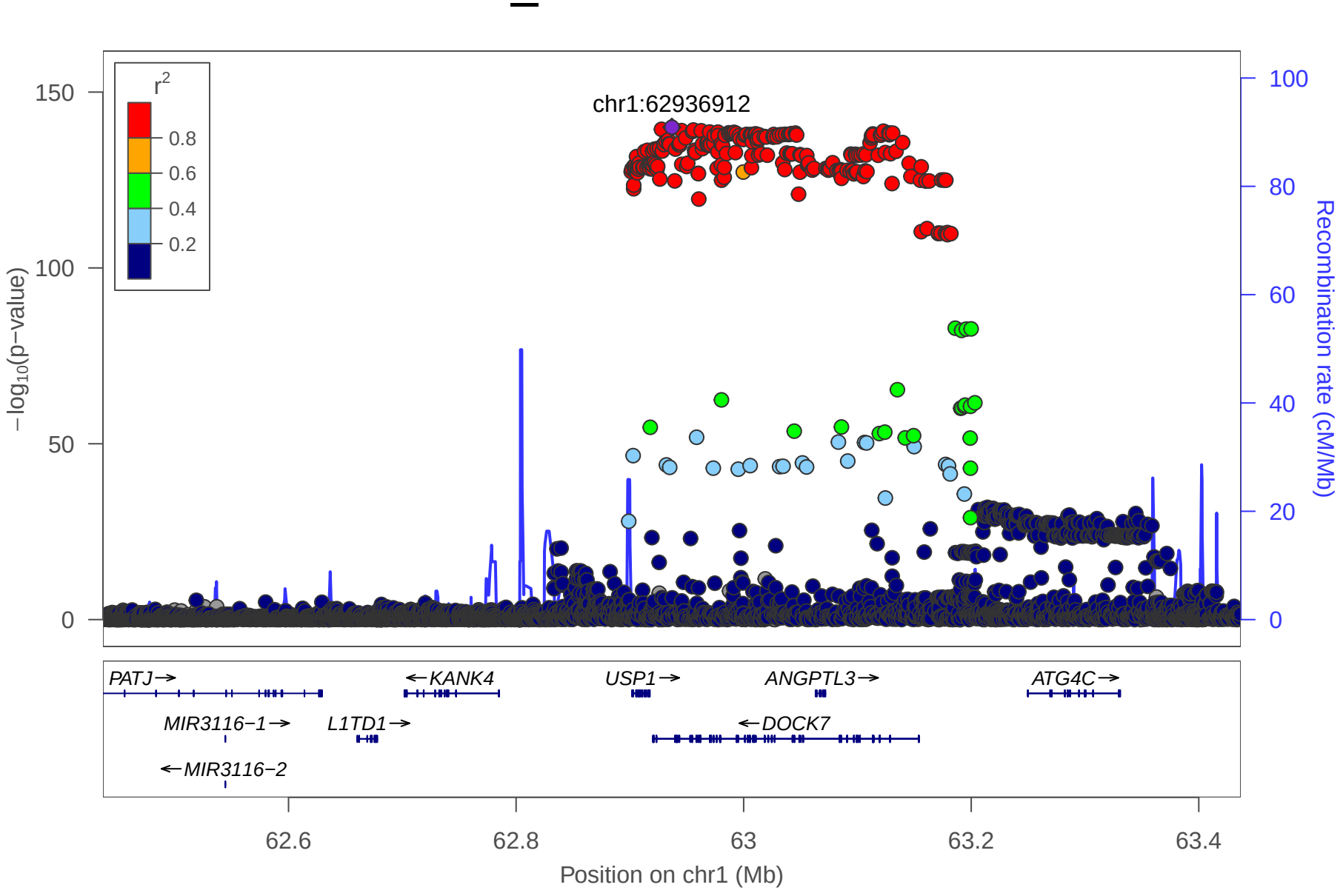

chr1:25777743
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
RUNX3
SYF2
TMEM50A
TMEM57
MAN1C1
AUNIP
MIR4425
RSRP1
RHCE
LDLRAP1
SELENON
RHD
MTFR1L
LOC646471
PAQR7
STMN1
MIR3917
Position on chr1 (Mb)

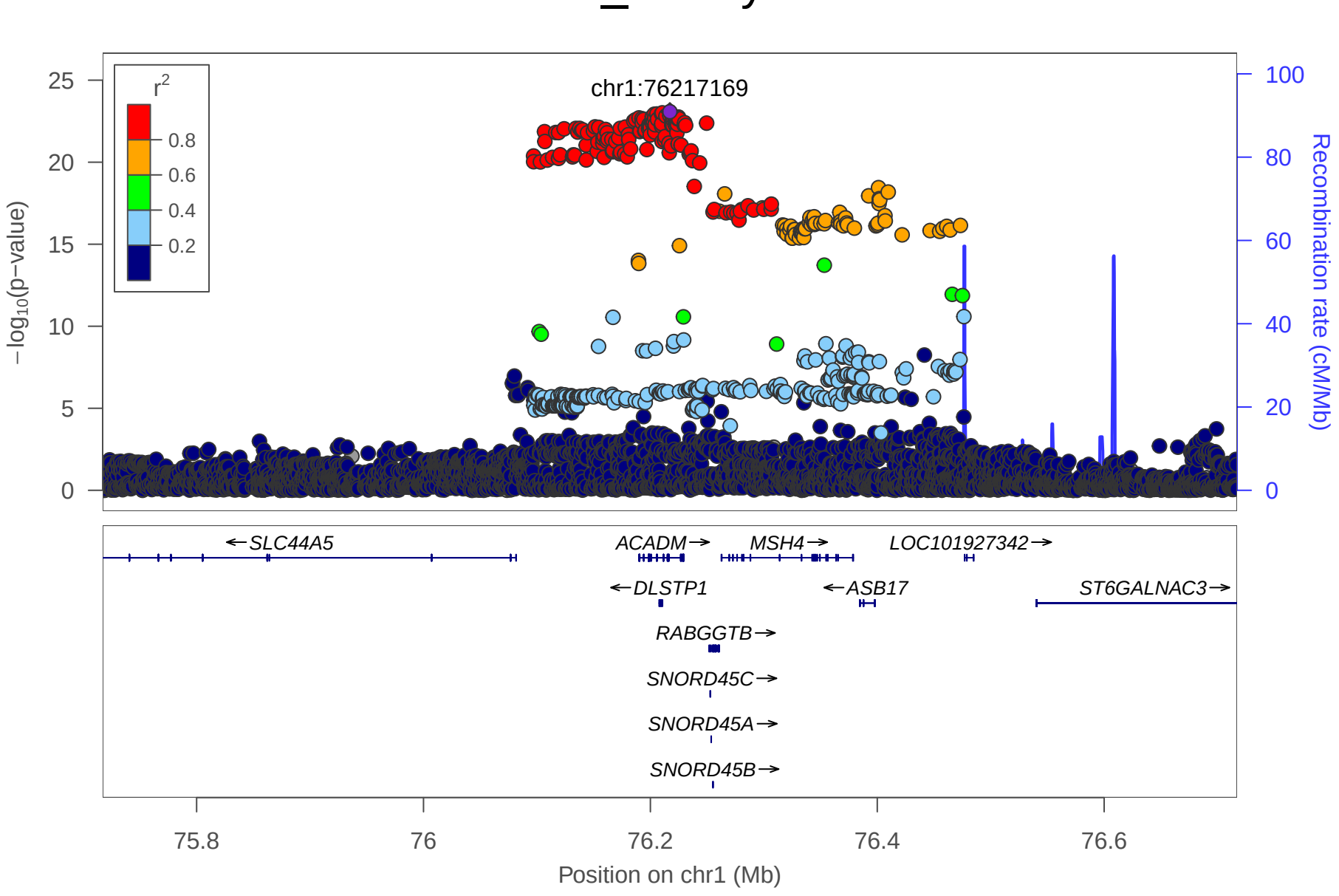

1_7:ApoBbyApoA1
chr1:27284913
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DHDDS
LOC101928728
ZDHHC18
KDF1
SLC9A1
WDTC1
FCN3
LOC101928324
ARID1A
SFN
TRNP1
TMEM222
HMGN2
PIGV
GPN2
FAM46B
ACTG1P20
RPS6KA1
GPATCH3
SYTL1
MIR1976
NR0B2
MAP3K6
NUDC
CD164L2
GPR3
WASF2
Position on chr1 (Mb)

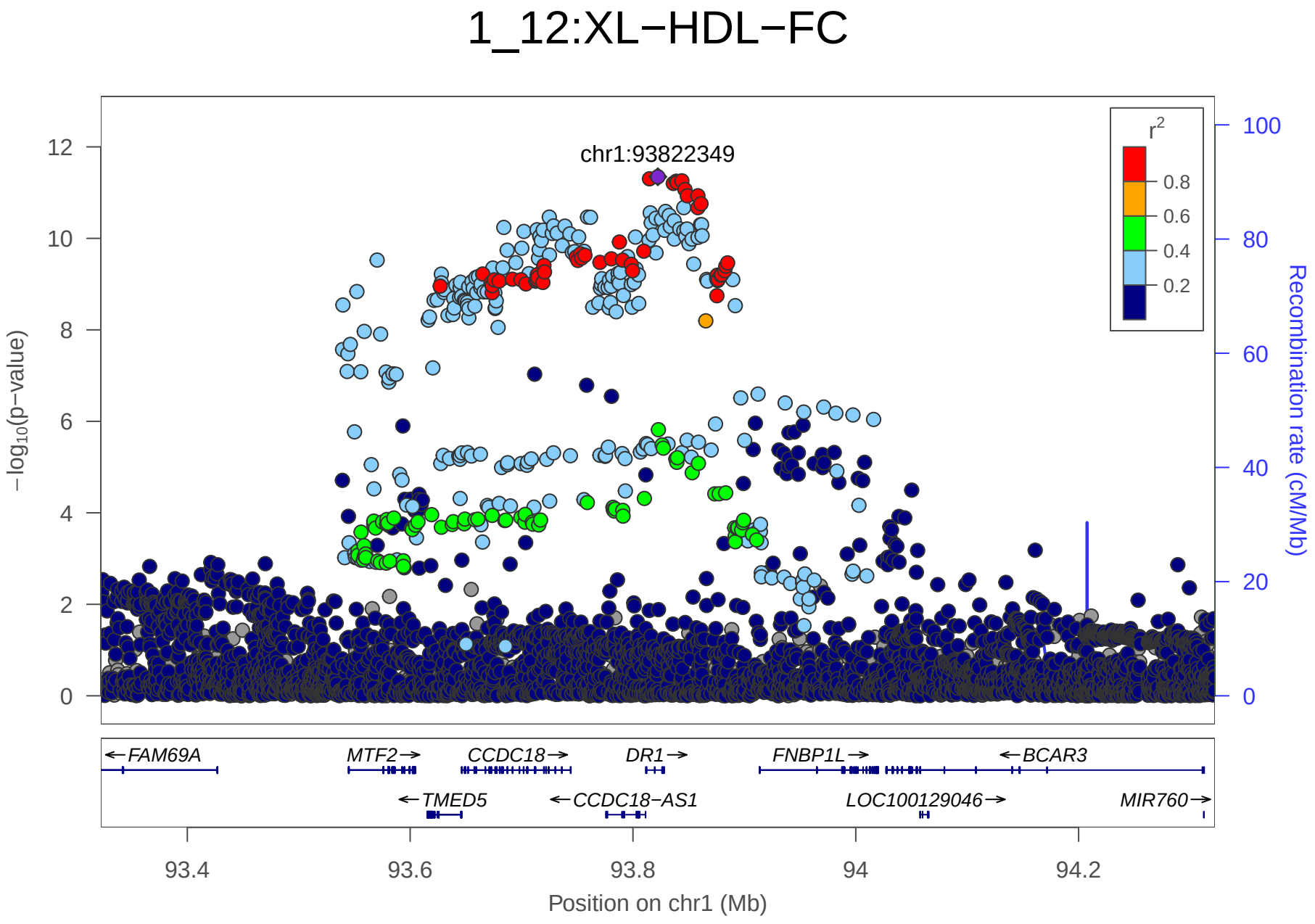
1_8:HDL2−C

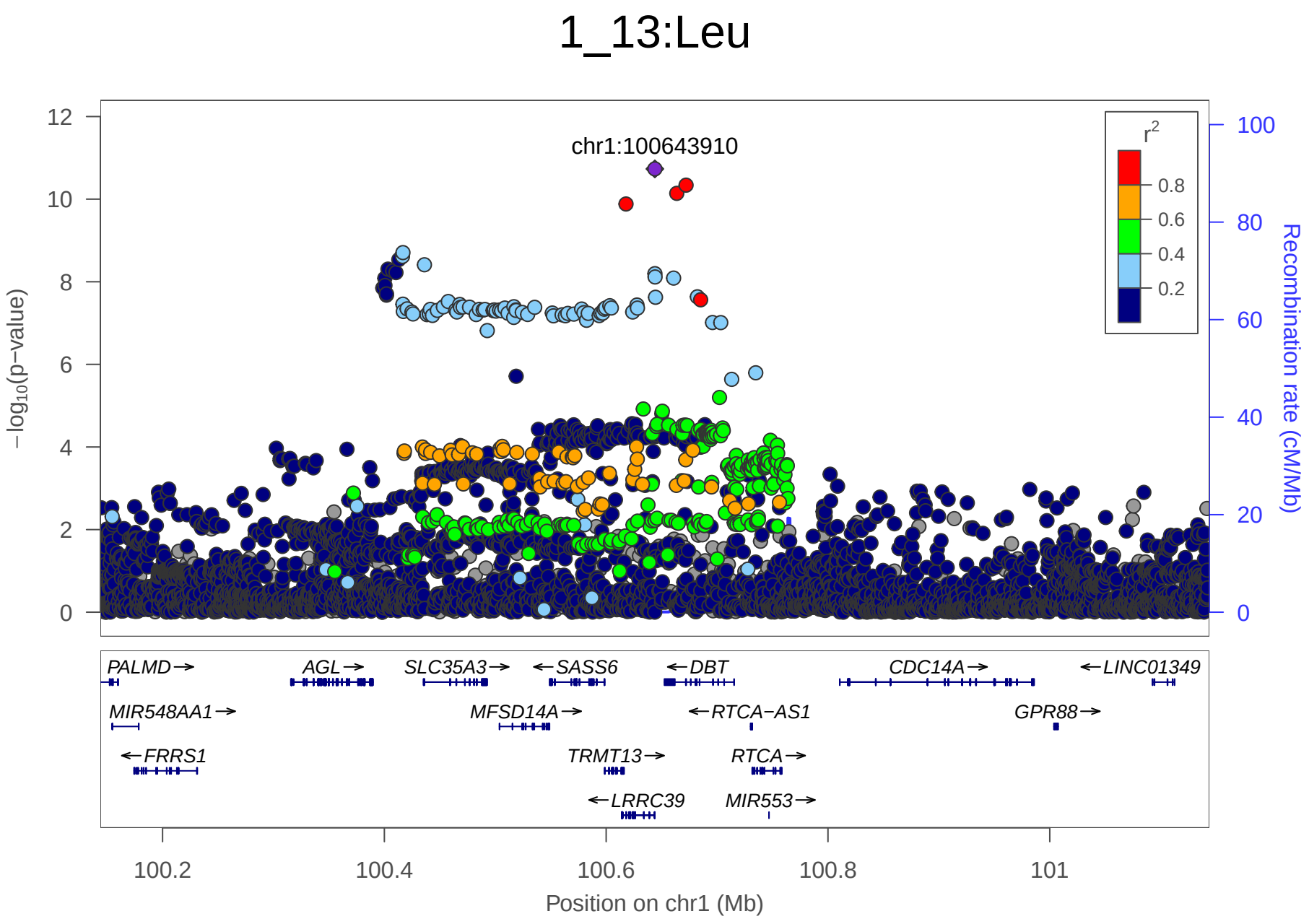

chr1:39623307
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
RRAGC
AKIRIN1
MACF1
PPIEL
MYCBP
NDUFS5
KIAA0754
PABPC4
GJA9−MYCBP
BMP8A
HEYL
LOC105378663
OXCT2P1
GJA9
LOC101929516
RHBDL2
SNORA55
Position on chr1 (Mb)

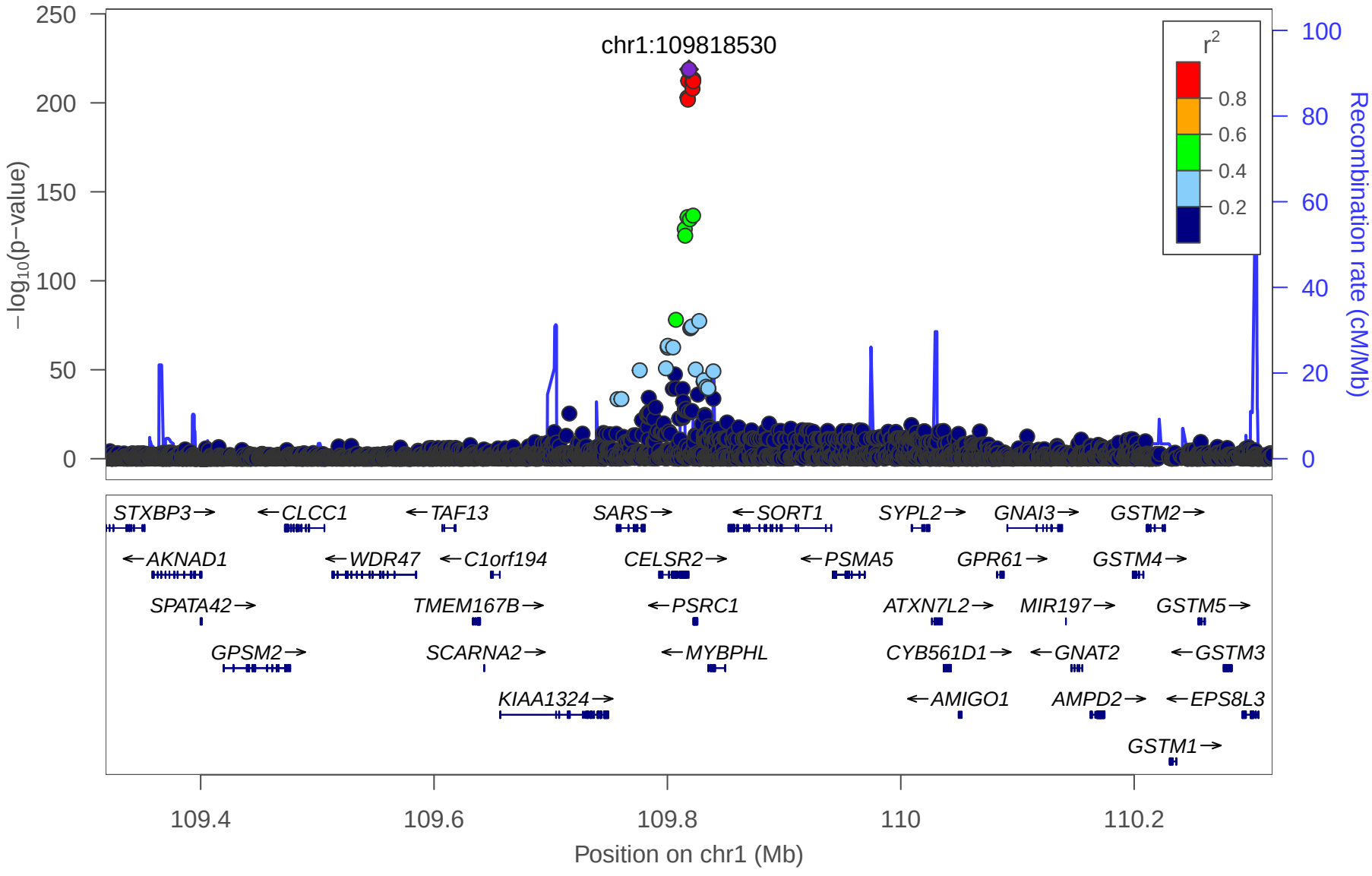

1_9:IDL−FC
chr1:55505647
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
250
200
150
100
50
0
100
80
60
40
20
0
ACOT11→
TTC4→
LEXM→
TMEM61→
←USP24
←FAM151A
←PARS2
←DHCR24
BSND→
LOC100507634→
MROH7→
←TTC22
PCSK9→
MIR4422→
MROH7−TTC4→
55.2
55.4
55.6
55.8
56
Position on chr1 (Mb)


1_10:M−HDL−TG
chr1:62936912
r2
0.8
0.6
0.4
0.2
150
100
50
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
PATJ→
←KANK4
USP1→
ANGPTL3→
ATG4C→
MIR3116−1→
L1TD1→
←DOCK7
←MIR3116−2
62.6
62.8
63
63.2
63.4
Position on chr1 (Mb)

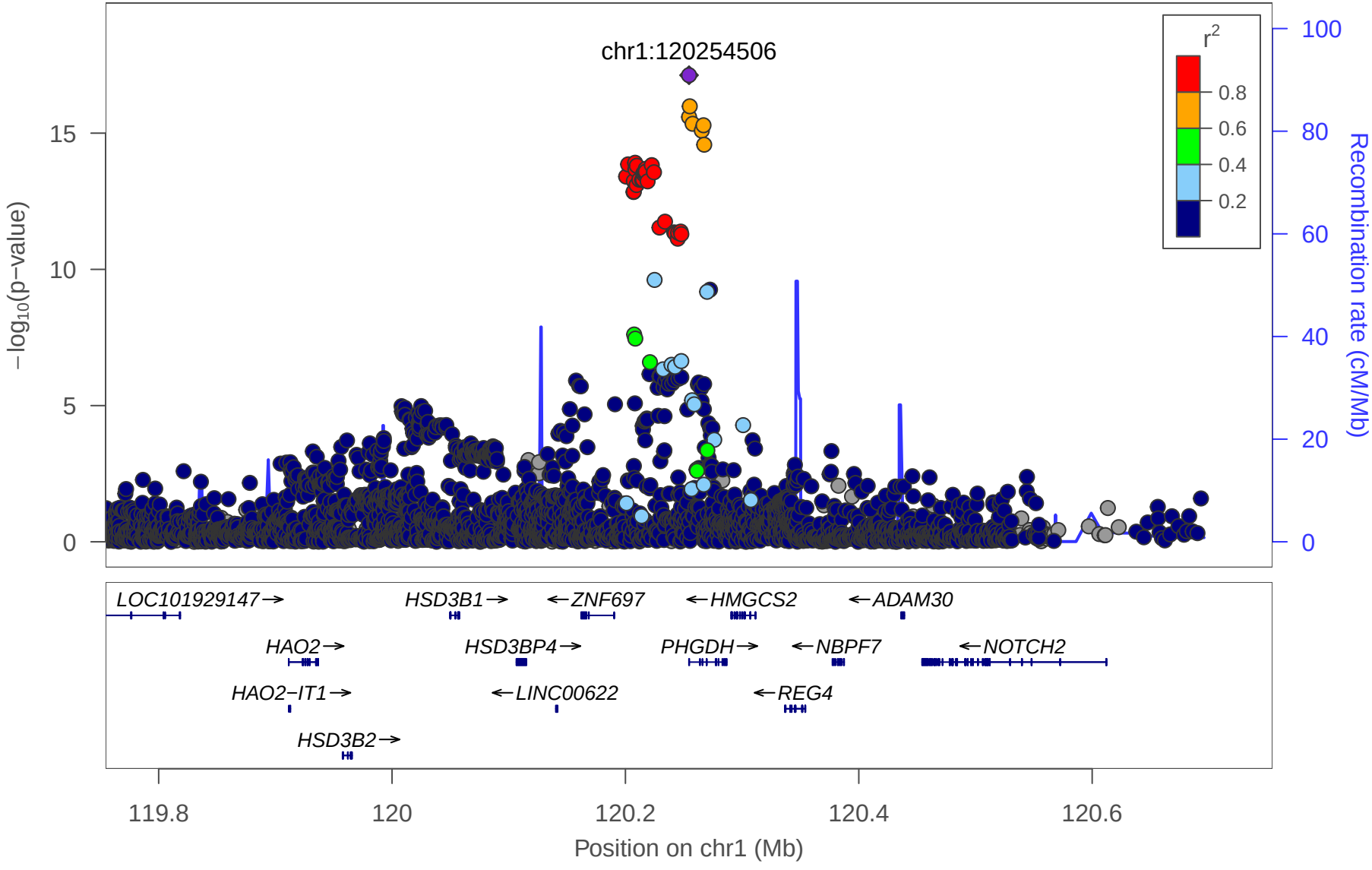

1_11:Gly
chr1:76217169
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SLC44A5
ACADM
MSH4
LOC101927342
DLSTP1
ASB17
ST6GALNAC3
RABGGTB
SNORD45C
SNORD45A
SNORD45B
Position on chr1 (Mb)


1_12:XL−HDL−FC
chr1:93822349
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FAM69A
MTF2
CCDC18
DR1
FNBP1L
BCAR3
TMED5
CCDC18−AS1
LOC100129046
MIR760
Position on chr1 (Mb)

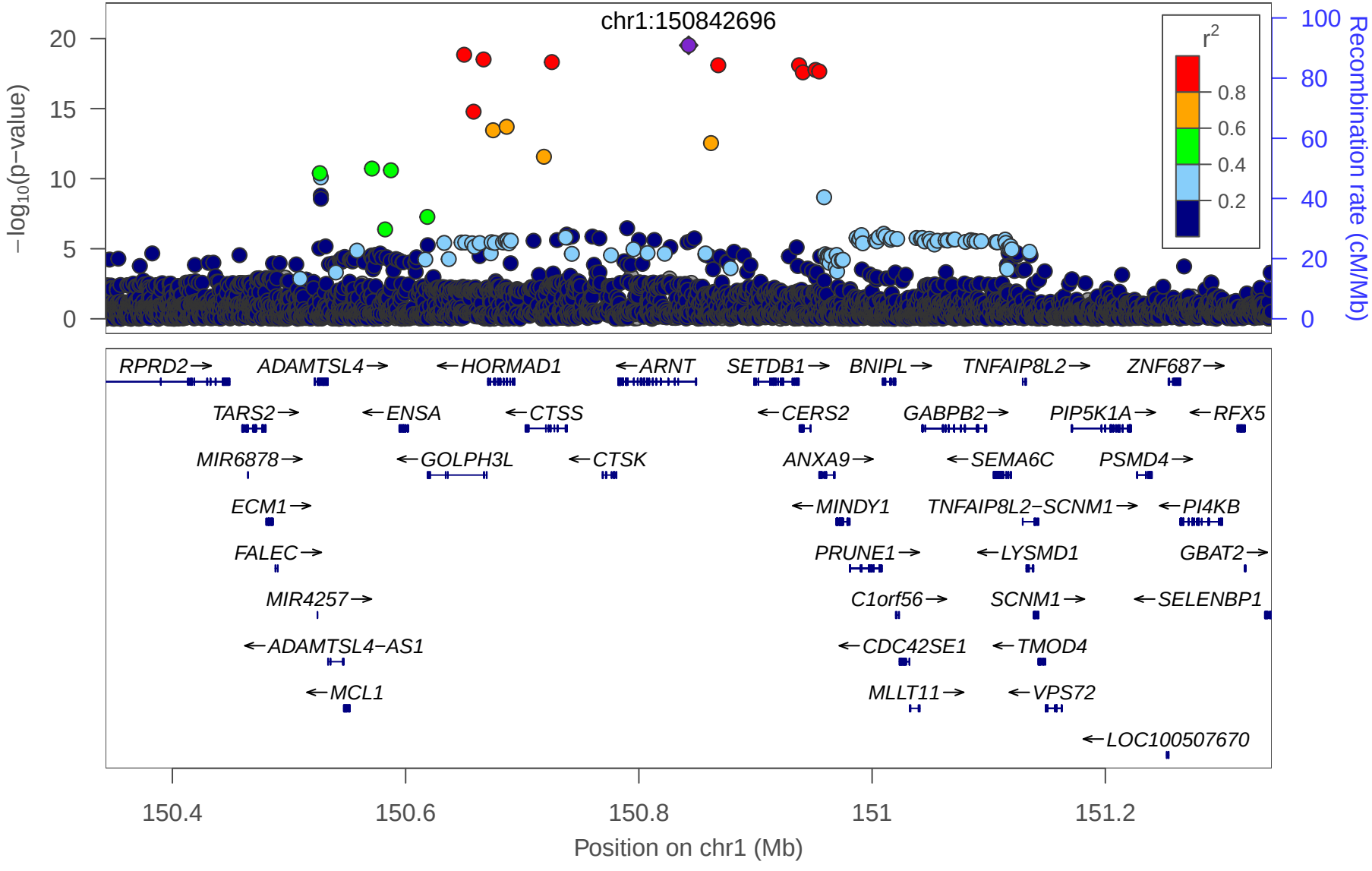

1_13:Leu
chr1:100643910
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PALMD
AGL
SLC35A3
SASS6
DBT
CDC14A
LINC01349
MIR548AA1
MFSD14A
RTCA−AS1
GPR88
FRRS1
TRMT13
RTCA
LRRC39
MIR553
Position on chr1 (Mb)

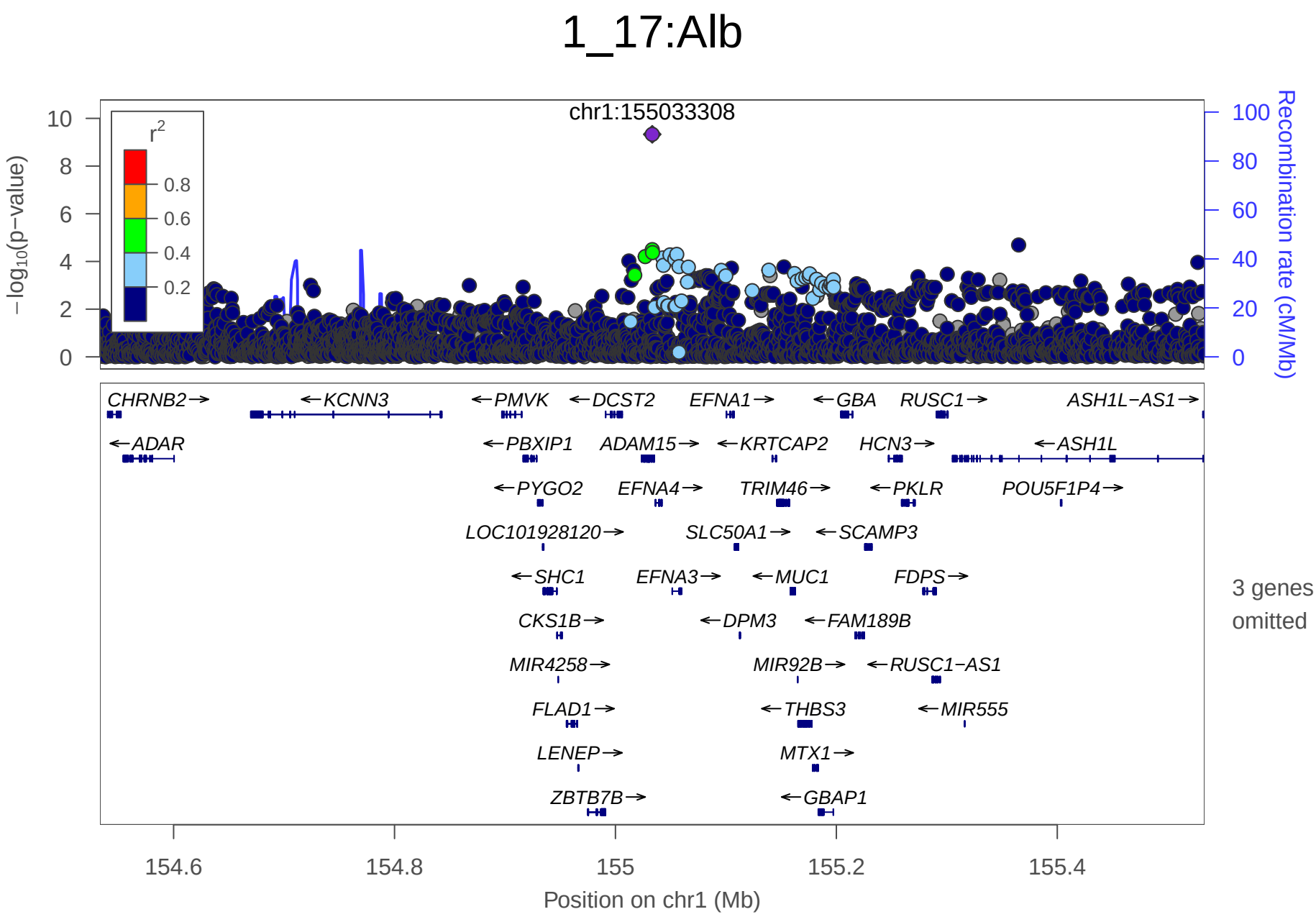

1_14:S−LDL−CE
chr1:109818530
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
250
200
150
100
50
0
100
80
60
40
20
0
STXBP3→
←CLCC1
←TAF13
SARS→
←SORT1
SYPL2→
GNAI3→
GSTM2→
←AKNAD1
←WDR47
←C1orf194
CELSR2→
←PSMA5
GPR61→
GSTM4→
SPATA42→
TMEM167B→
←PSRC1
ATXN7L2→
MIR197→
GSTM5→
GPSM2→
SCARNA2→
←MYBPHL
CYB561D1→
←GNAT2
←GSTM3
KIAA1324→
←AMIGO1
AMPD2→
←EPS8L3
GSTM1→
109.4
109.6
109.8
110
110.2
Position on chr1 (Mb)

1_15:Gly

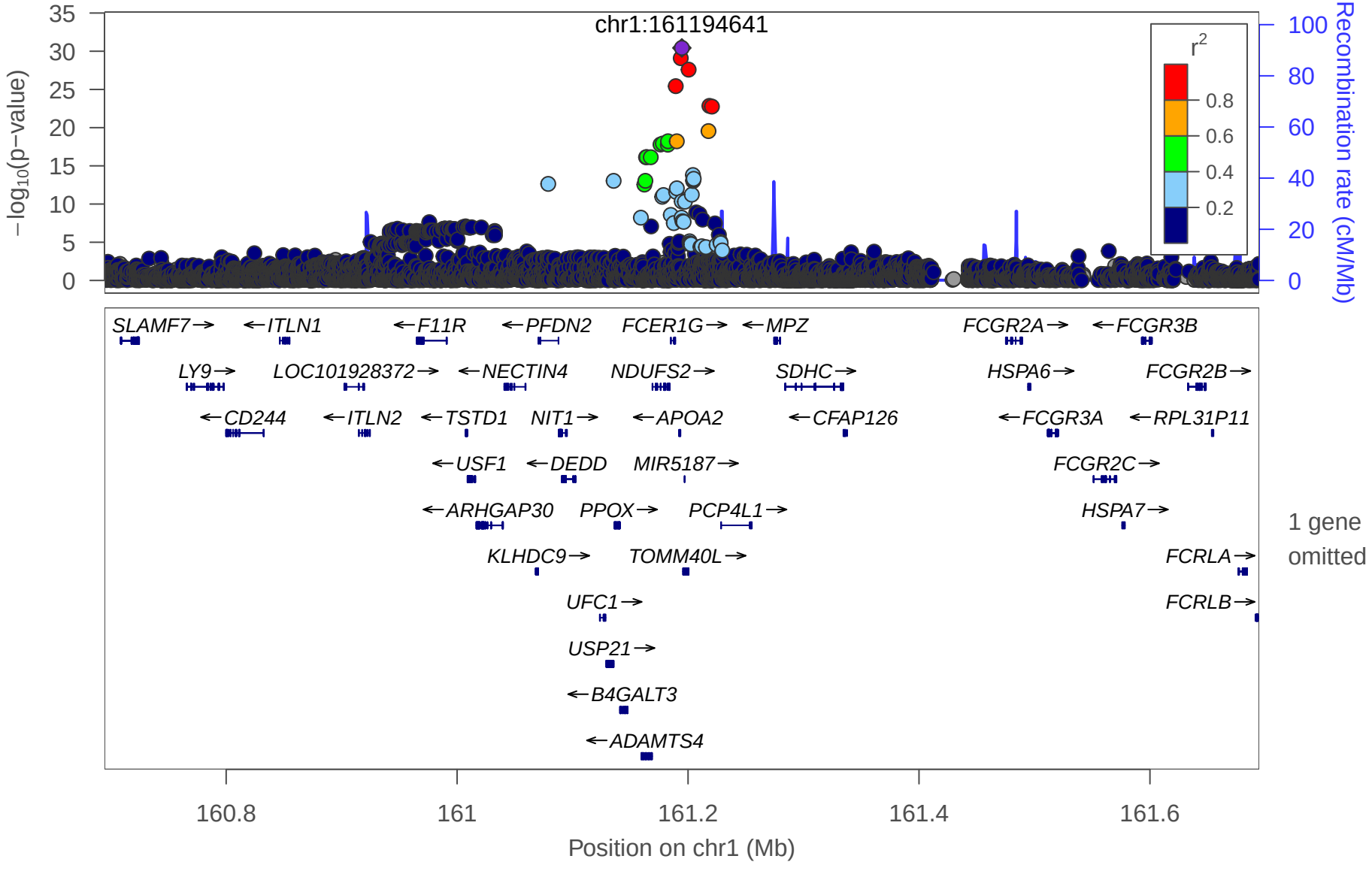

chr1:120254506
r²
0.8
0.6
0.4
0.2
−log10(p−value)
15
10
5
0
100
80
60
40
20
0
Recombination rate (cM/Mb)
LOC101929147→
HSD3B1→
←ZNF697
←HMGCS2
←ADAM30
HAO2→
HSD3BP4→
PHGDH→
←NBPF7
←NOTCH2
HAO2−IT1→
←LINC00622
←REG4
HSD3B2→
119.8
120
120.2
120.4
120.6
Position on chr1 (Mb)

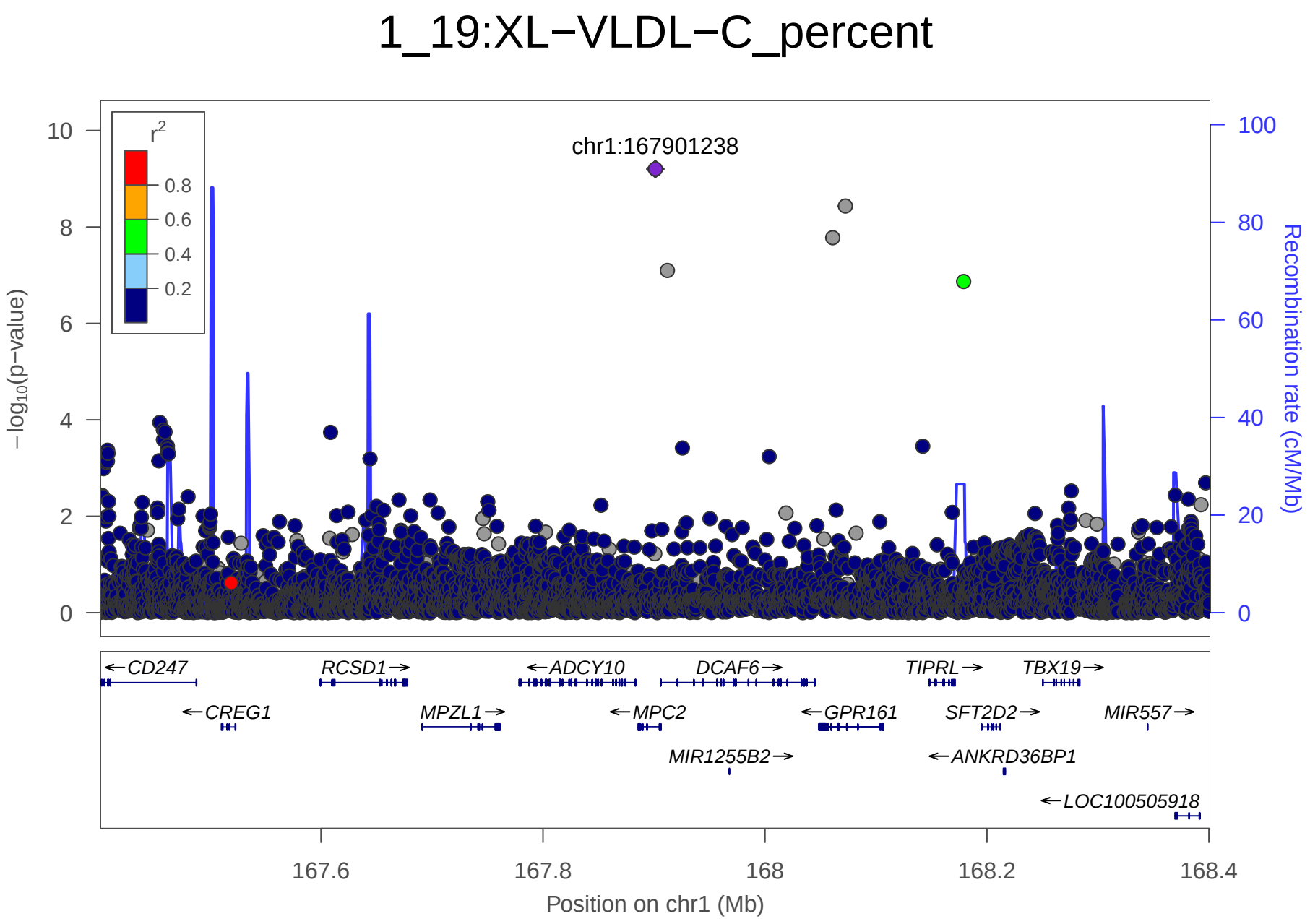
1_16:S−HDL−PL

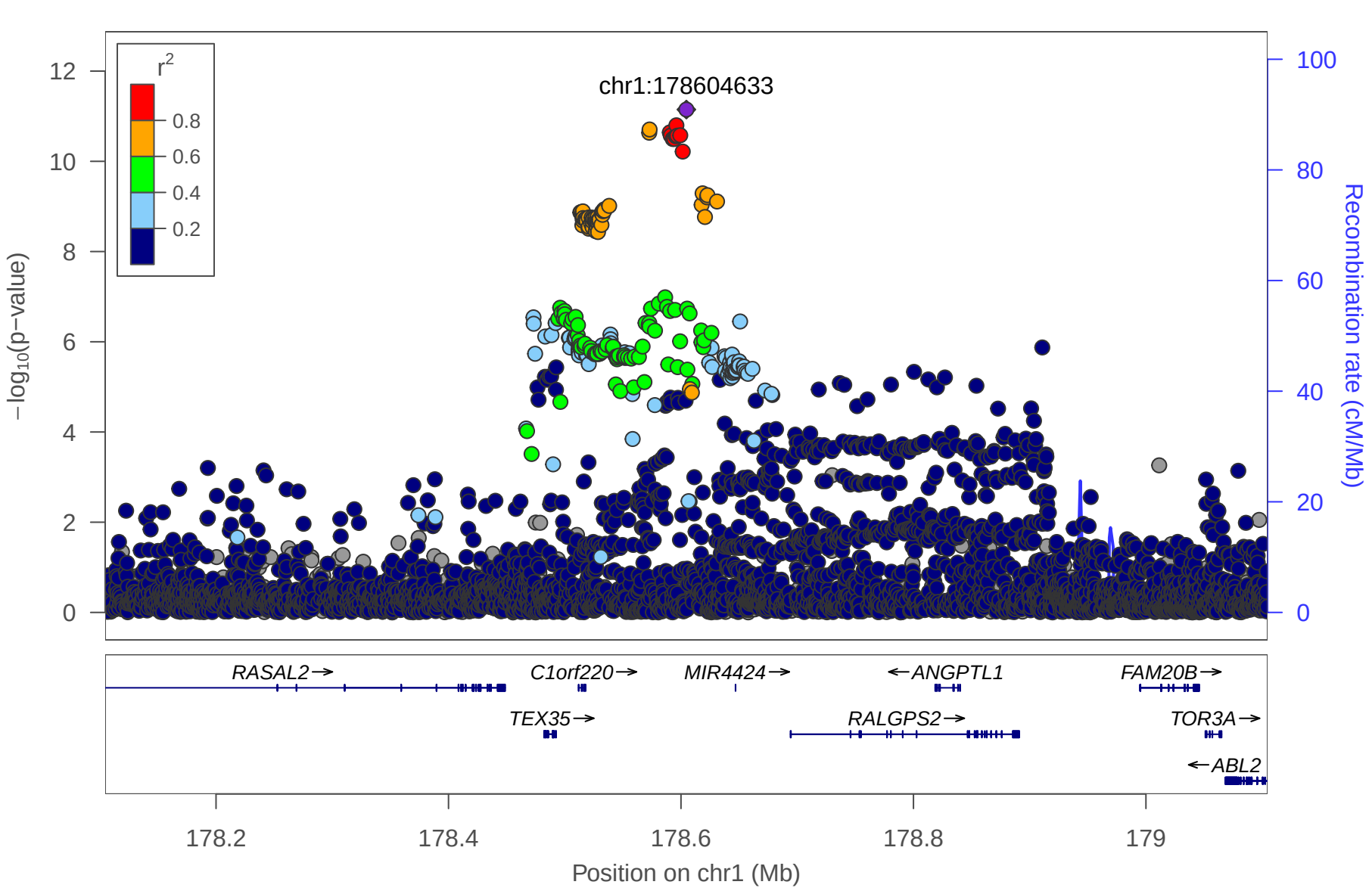

chr1:150842696
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
RPRD2→
ADAMTSL4→
←HORMAD1
←ARNT
SETDB1→
BNIPL→
TNFAIP8L2→
ZNF687→
TARS2→
←ENSA
←CTSS
←CERS2
GABPB2→
PIP5K1A→
←RFX5
MIR6878→
←GOLPH3L
←CTSK
ANXA9→
←SEMA6C
PSMD4→
ECM1→
←MINDY1
TNFAIP8L2−SCNM1→
←PI4KB
FALEC→
PRUNE1→
←LYSMD1
GBAT2→
MIR4257→
C1orf56→
SCNM1→
←SELENBP1
←ADAMTSL4−AS1
←CDC42SE1
←TMOD4
←MCL1
MLLT11→
←VPS72
←LOC100507670
Position on chr1 (Mb)

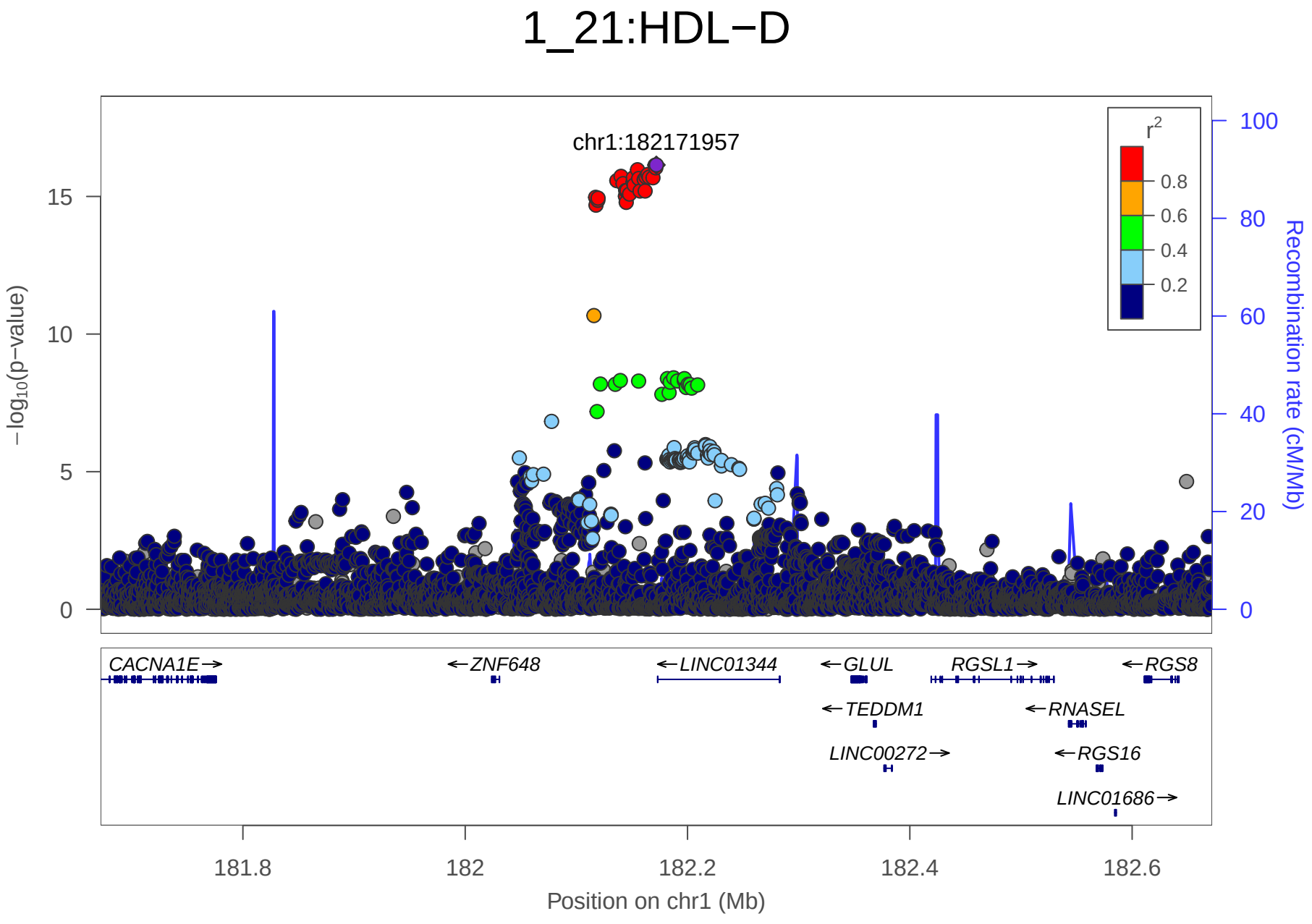

1_17:Alb
chr1:155033308
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CHRNB2→
←KCNN3
←PMVK
←DCST2
EFNA1→
←GBA
RUSC1→
ASH1L−AS1→
←ADAR
←PBXIP1
ADAM15→
←KRTCAP2
HCN3→
←ASH1L
←PYGO2
EFNA4→
TRIM46→
←PKLR
POU5F1P4→
LOC101928120→
SLC50A1→
←SCAMP3
←SHC1
EFNA3→
←MUC1
FDPS→
CKS1B→
←DPM3
←FAM189B
MIR4258→
MIR92B→
←RUSC1−AS1
FLAD1→
←THBS3
←MIR555
LENEP→
MTX1→
ZBTB7B→
←GBAP1
3 genes omitted
154.6
154.8
155
155.2
155.4
Position on chr1 (Mb)

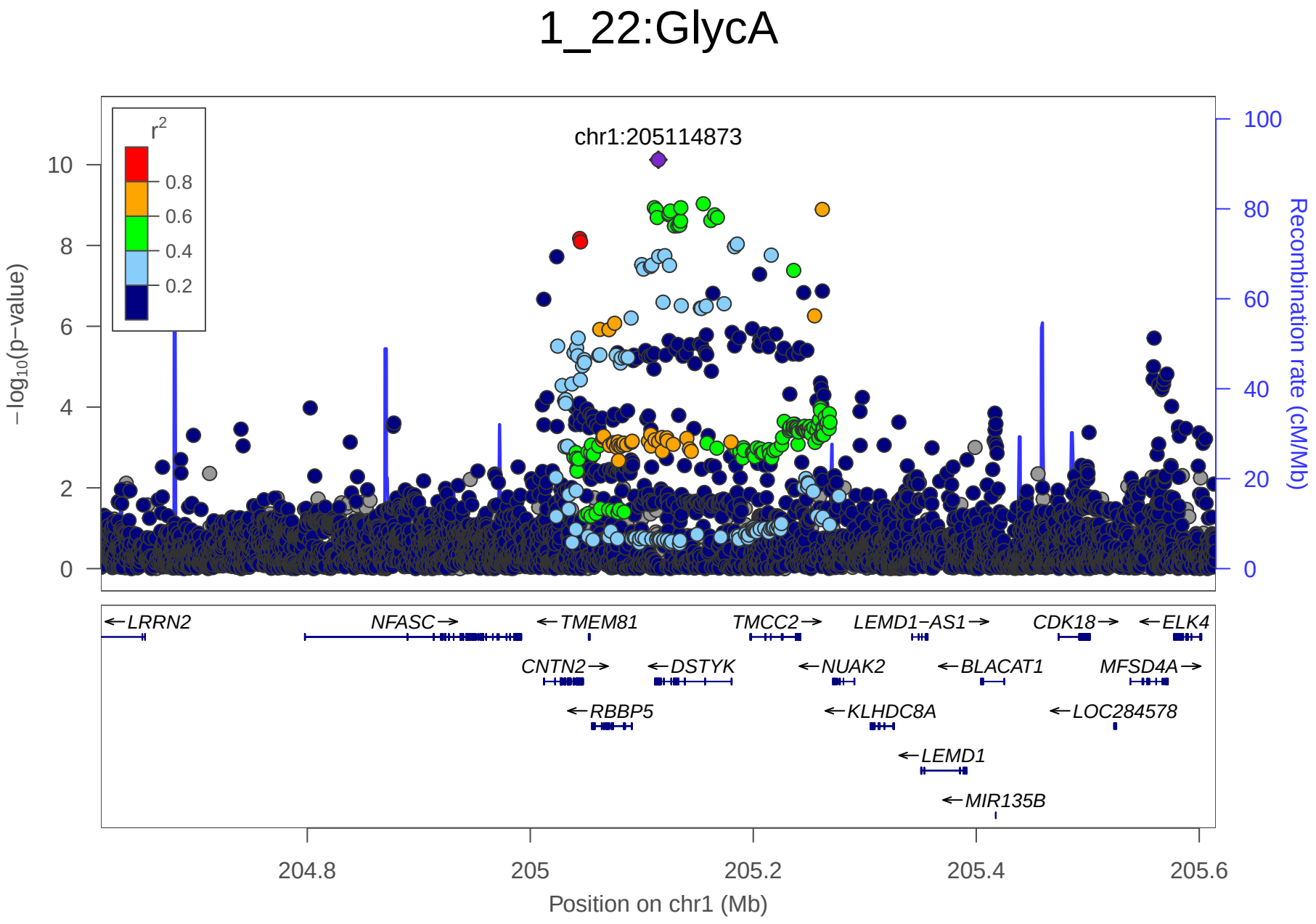
1_18:M−HDL−CE

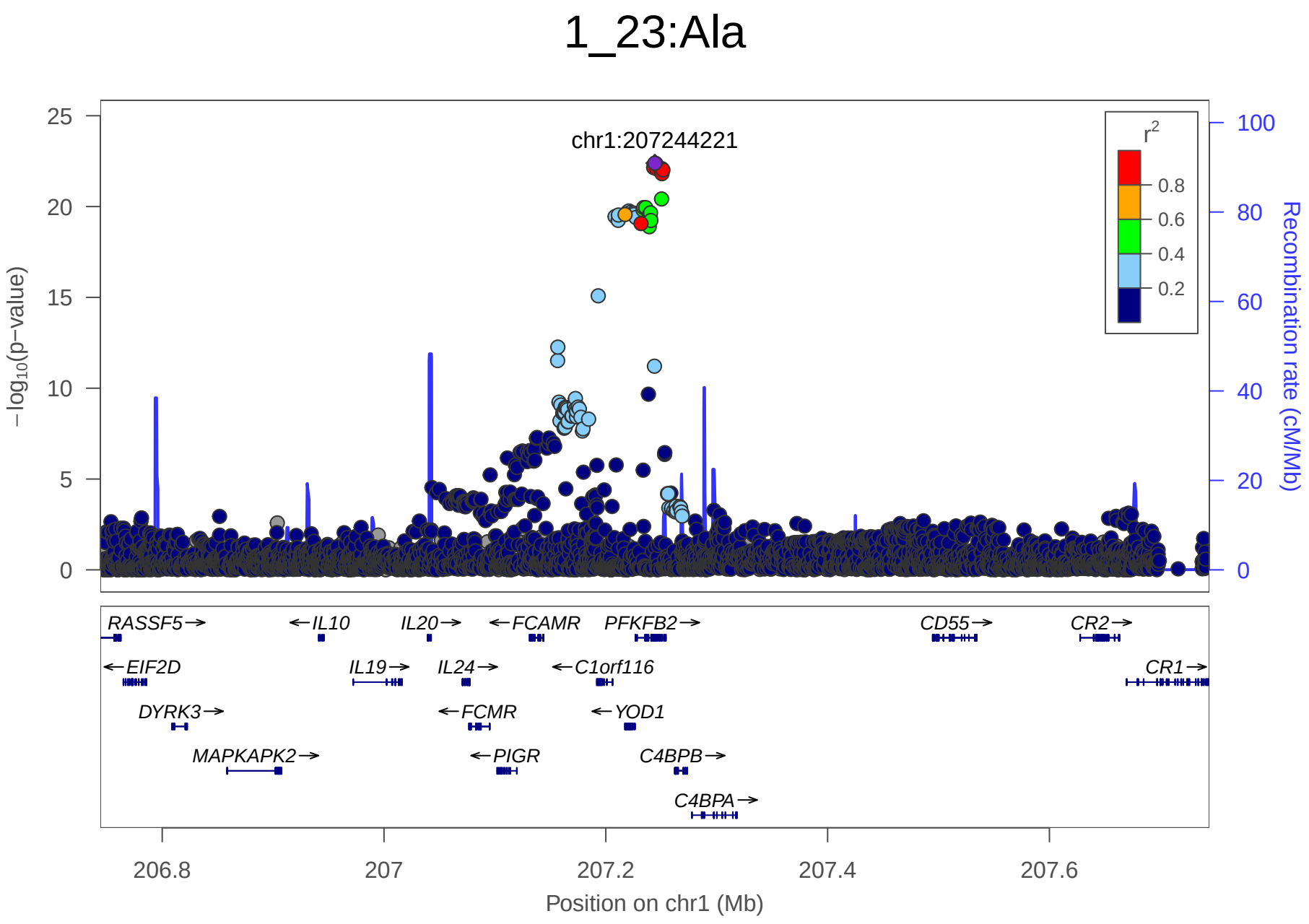

chr1:161194641
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SLAMF7→ ←ITLN1 ←F11R ←PFDN2 FCER1G→ ←MPZ FCGR2A→ ←FCGR3B
LY9→ LOC101928372→ ←NECTIN4 NDUFS2→ SDHC→ HSPA6→ FCGR2B→
←CD244 ←ITLN2 ←TSTD1 NIT1→ ←APOA2 ←CFAP126 ←FCGR3A ←RPL31P11
←USF1 ←DEDD MIR5187→ FCGR2C→
←ARHGAP30 PPOX→ PCP4L1→ HSPA7→
KLHDC9→ TOMM40L→ FCRLA→
UFC1→ FCRLB→
USP21→
←B4GALT3
←ADAMTS4
1 gene omitted
160.8
161
161.2
161.4
161.6
Position on chr1 (Mb)

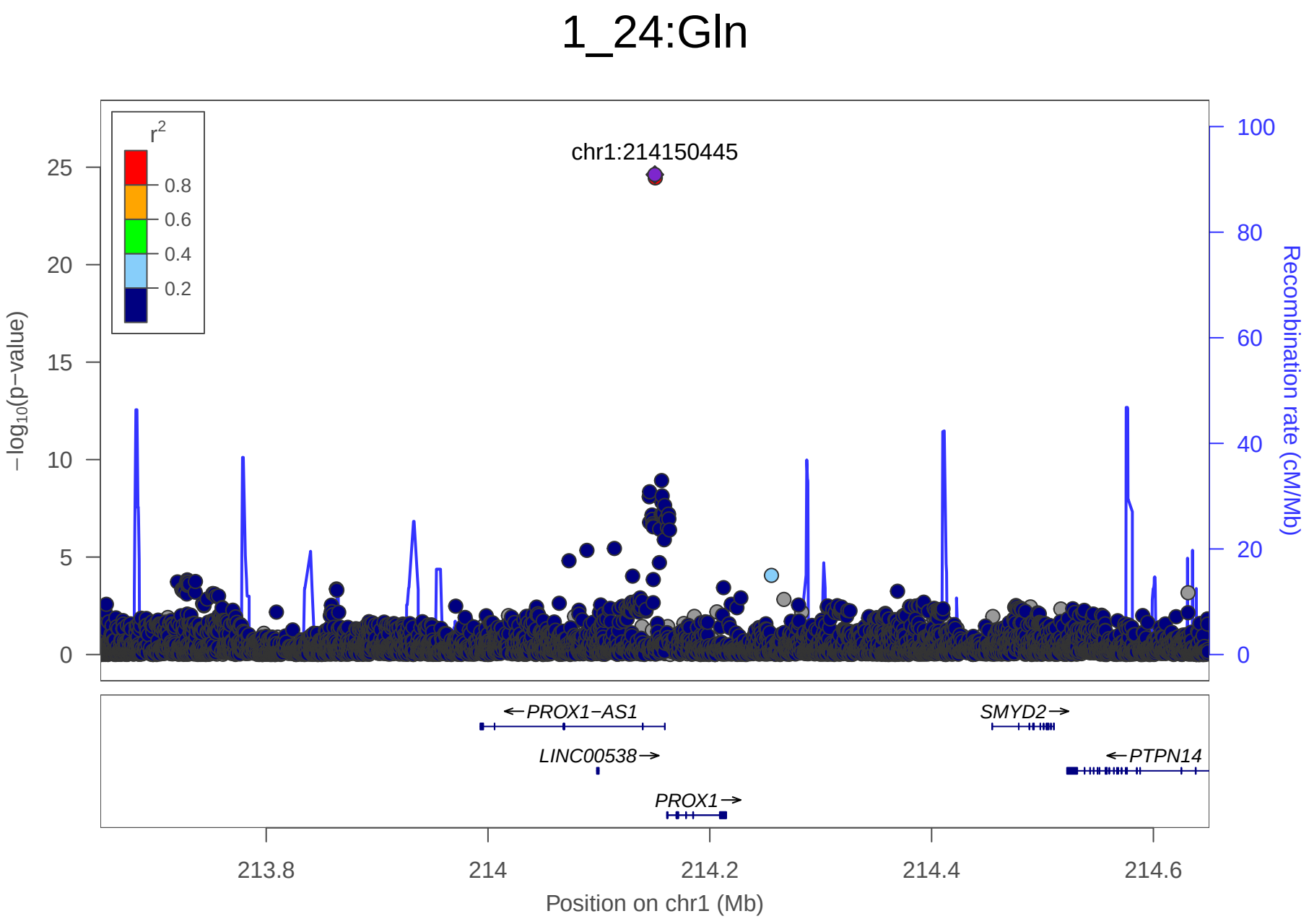

1_19:XL−VLDL−C_percent
chr1:167901238
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CD247
RCSD1
ADCY10
DCAF6
TIPRL
TBX19
CREG1
MPZL1
MPC2
GPR161
SFT2D2
MIR557
MIR1255B2
ANKRD36BP1
LOC100505918
167.6
167.8
168
168.2
168.4
Position on chr1 (Mb)

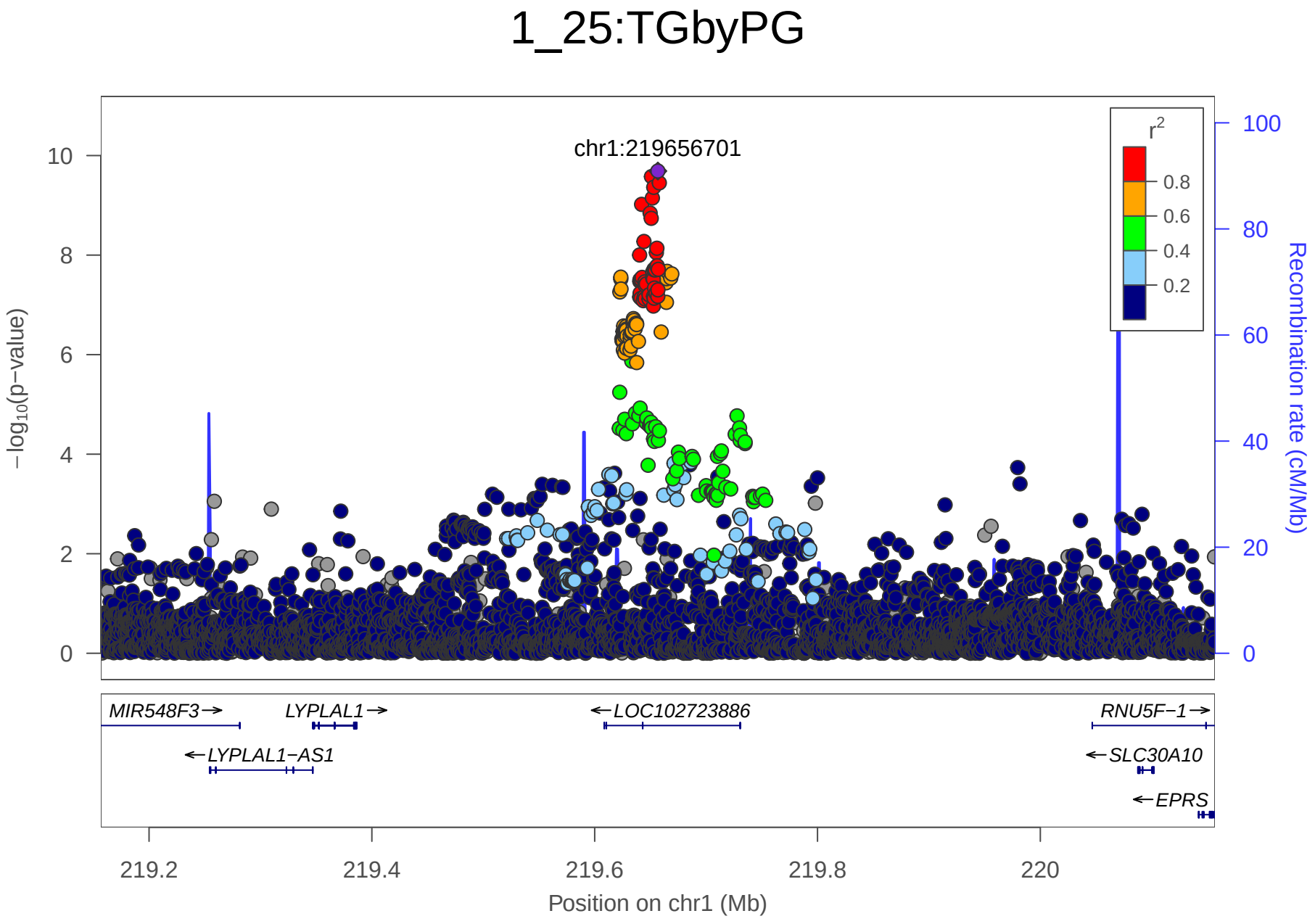

1_20:HDL−D
chr1:178604633
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
RASAL2
C1orf220
MIR4424
ANGPTL1
FAM20B
TEX35
RALGPS2
TOR3A
ABL2
Position on chr1 (Mb)

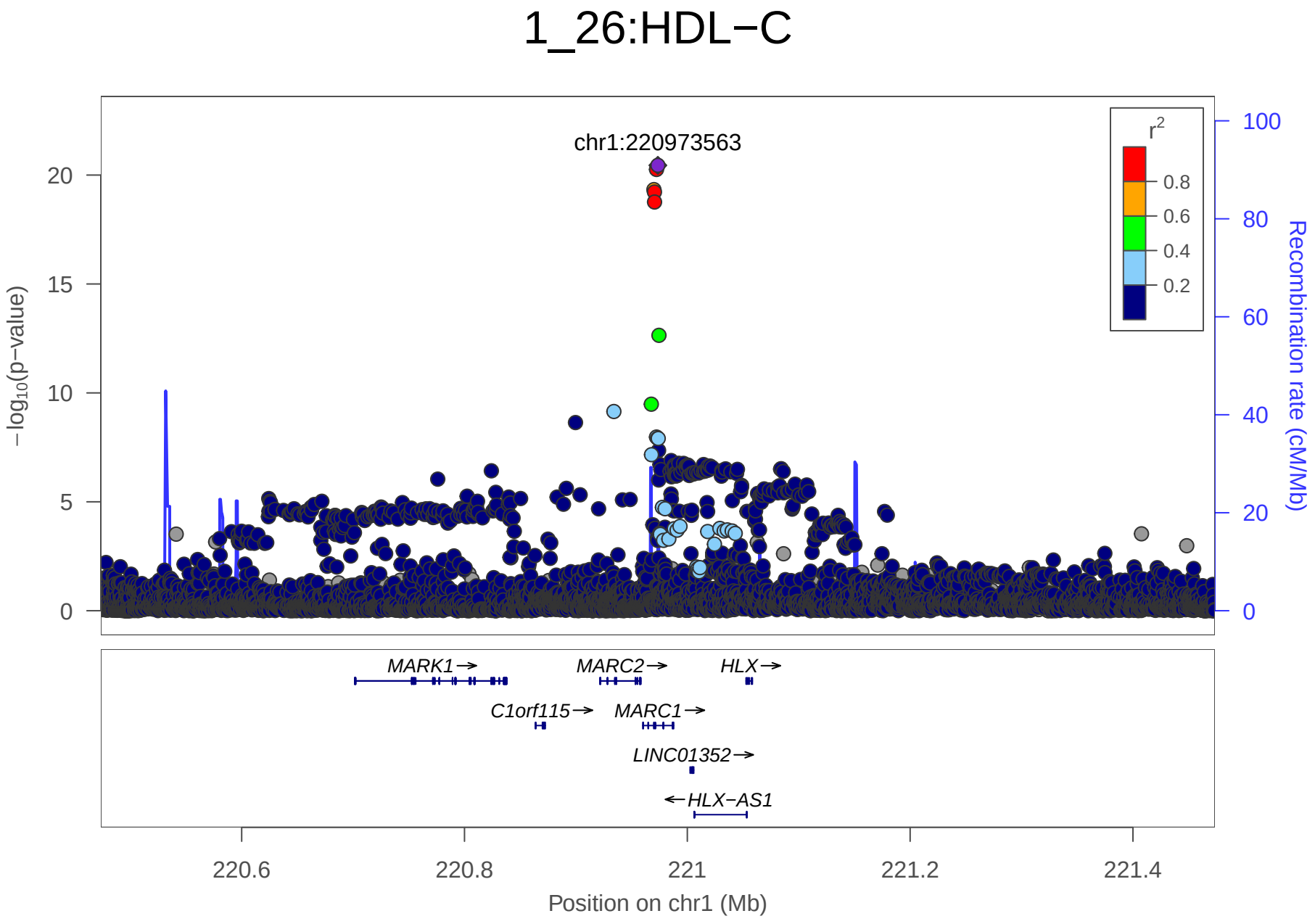

1_21:HDL−D
chr1:182171957
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
CACNA1E
ZNF648
LINC01344
GLUL
RGSL1
RGS8
TEDDM1
RNASEL
LINC00272
RGS16
LINC01686
181.8
182
182.2
182.4
182.6
Position on chr1 (Mb)

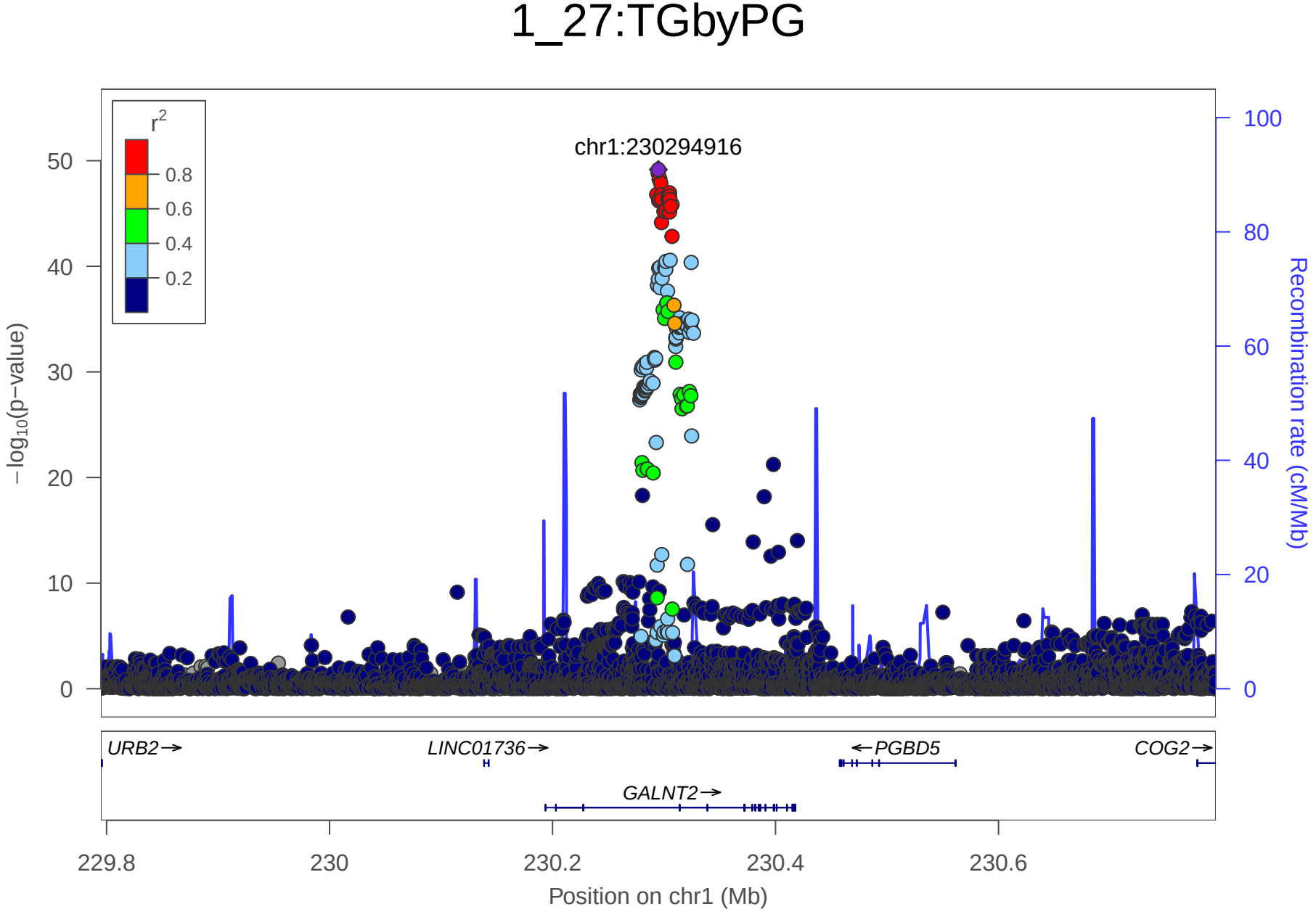

1_22:GlycA
chr1:205114873
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LRRN2
NFASC
TMEM81
TMCC2
LEMD1−AS1
CDK18
ELK4
CNTN2
DSTYK
NUAK2
BLACAT1
MFSD4A
RBBP5
KLHDC8A
LOC284578
LEMD1
MIR135B
Position on chr1 (Mb)

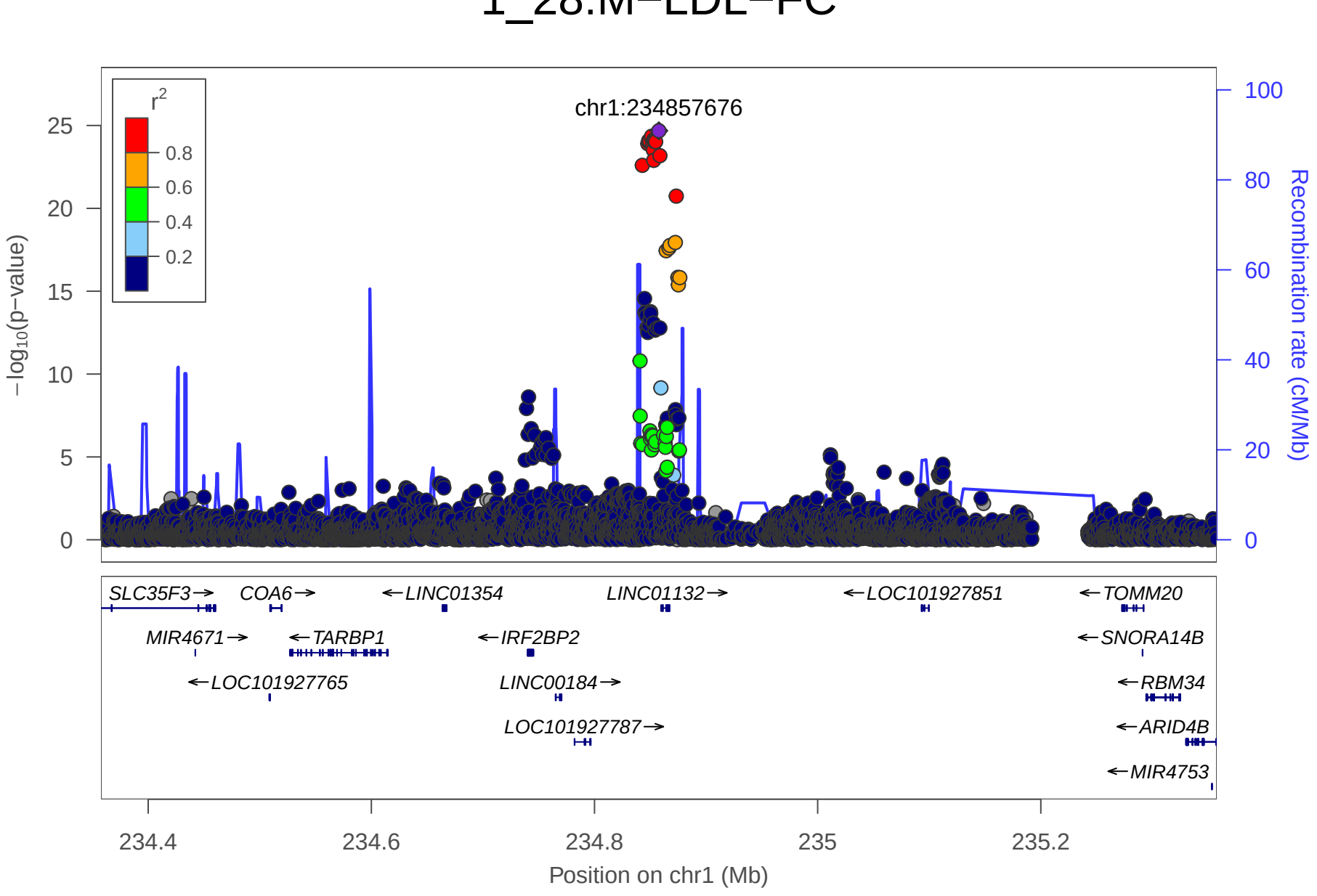

1_23:Ala
chr1:207244221
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
25
20
15
10
5
0
100
80
60
40
20
0
RASSF5→
←IL10
IL20→
←FCAMR
PFKFB2→
CD55→
CR2→
←EIF2D
IL19→
IL24→
←C1orf116
CR1→
DYRK3→
←FCMR
←YOD1
MAPKAPK2→
←PIGR
C4BPB→
C4BPA→
206.8
207
207.2
207.4
207.6
Position on chr1 (Mb)

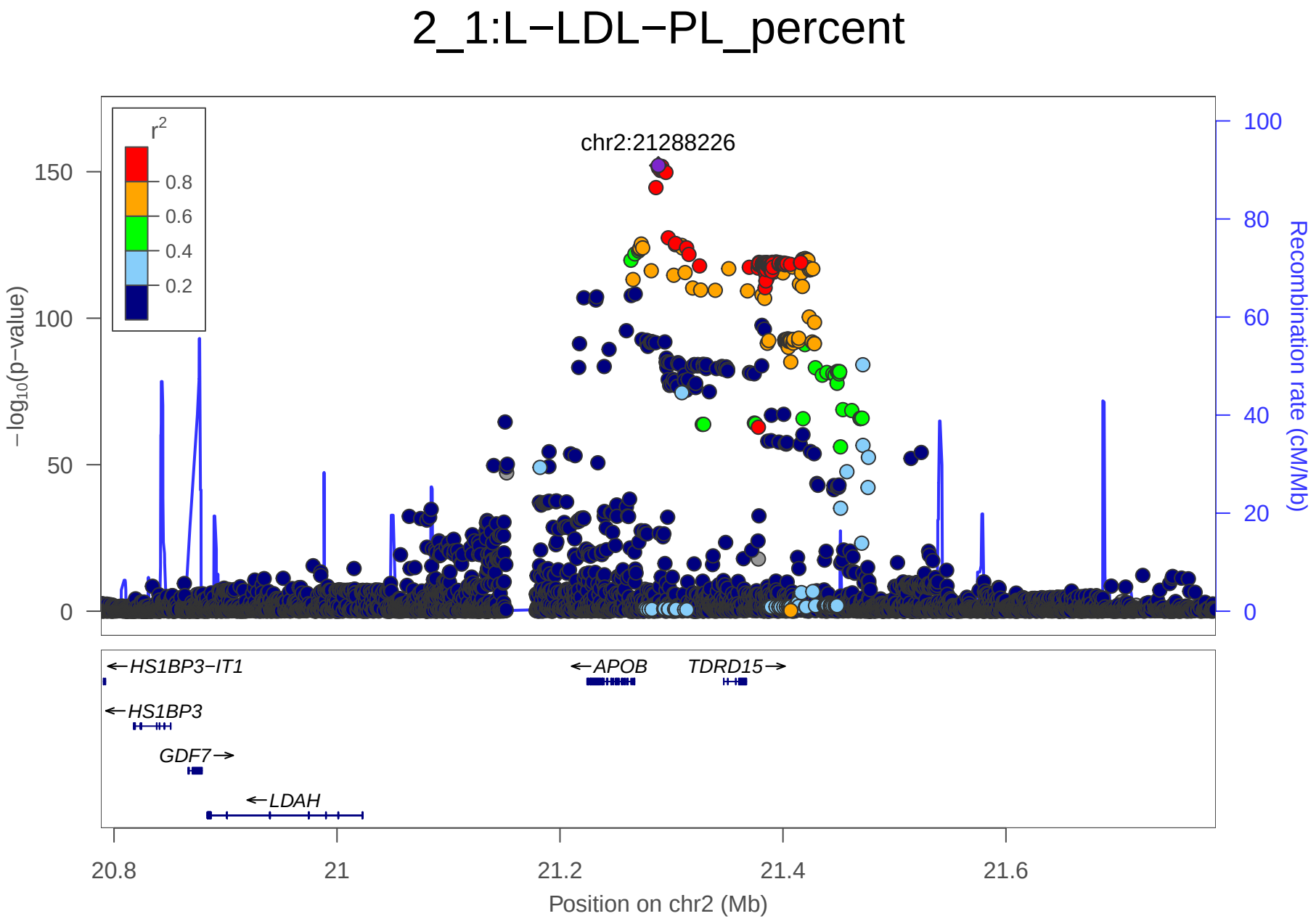

1_24:Gln
r2
0.8
0.6
0.4
0.2
chr1:214150445
25
20
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←PROX1−AS1
SMYD2→
LINC00538→
←PTPN14
PROX1→
213.8
214
214.2
214.4
214.6
Position on chr1 (Mb)


1_25:TGbyPG
chr1:219656701
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
MIR548F3
LYPLAL1
LOC102723886
RNU5F−1
LYPLAL1−AS1
SLC30A10
EPRS
Position on chr1 (Mb)

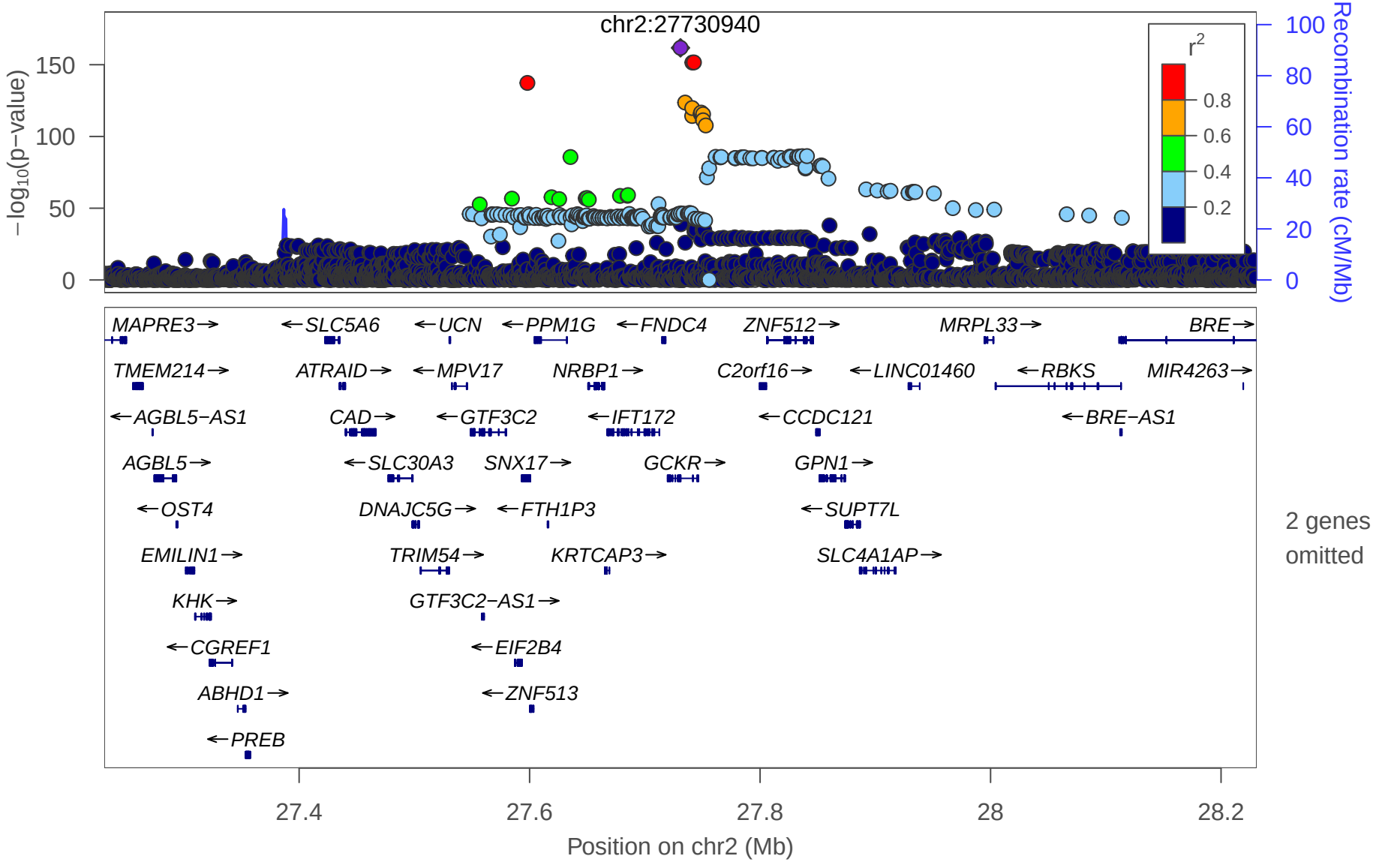

1_26:HDL−C
chr1:220973563
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
MARK1
MARC2
HLX
C1orf115
MARC1
LINC01352
HLX−AS1
Position on chr1 (Mb)

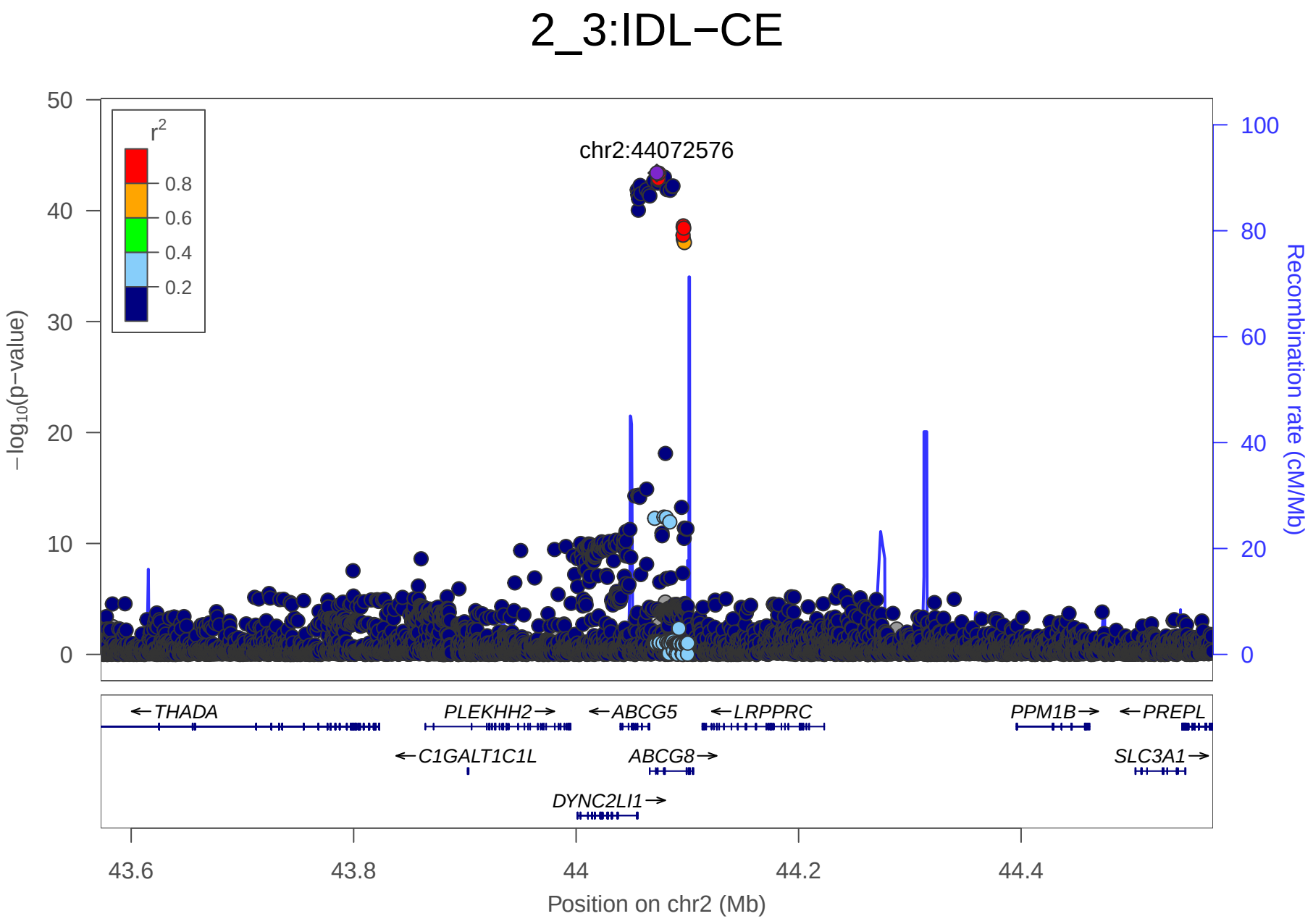

1_27:TGbyPG
chr1:230294916
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
URB2
LINC01736
PGBD5
COG2
GALNT2
229.8
230
230.2
230.4
230.6
Position on chr1 (Mb)

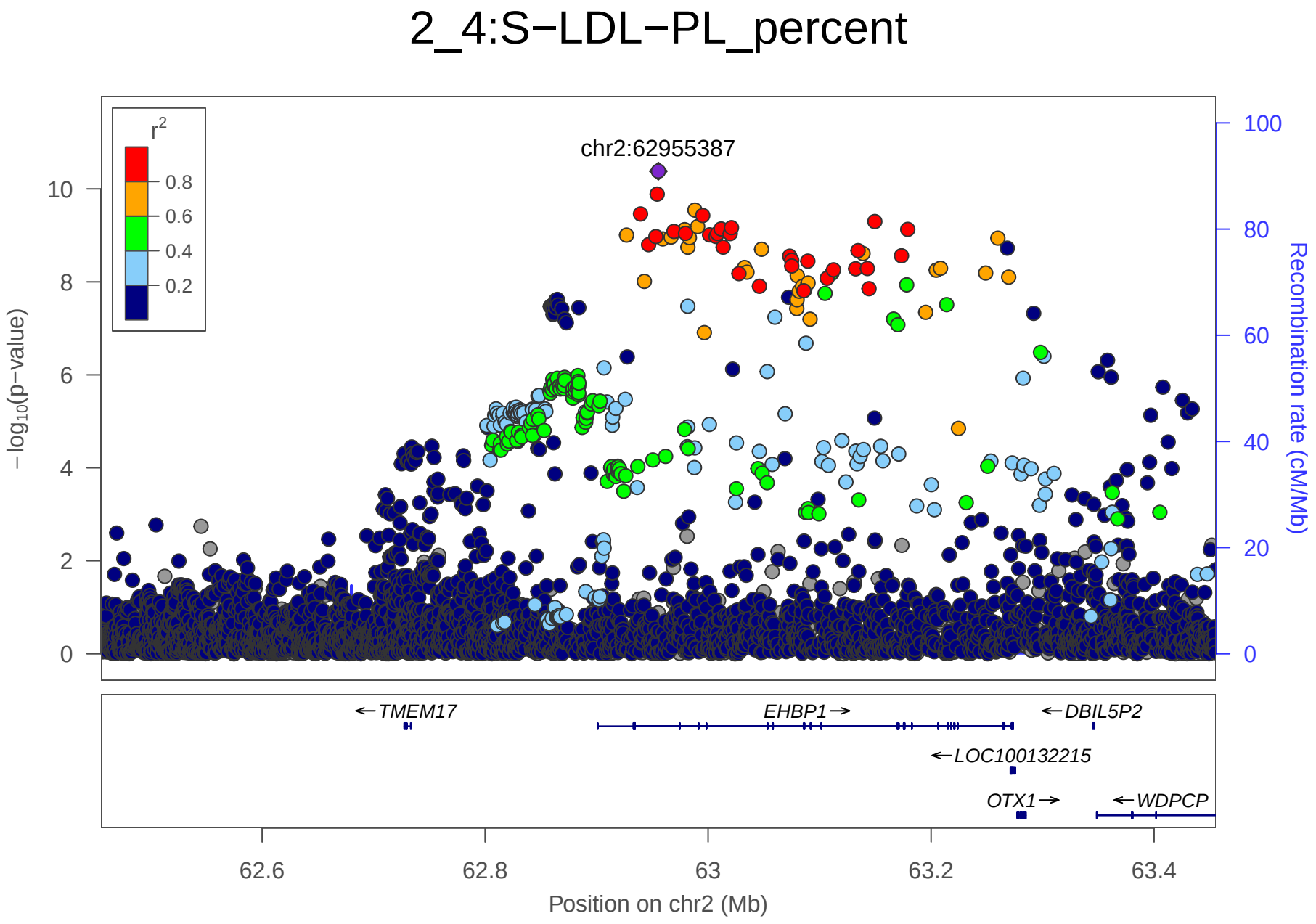

1_28:M−LDL−FC
chr1:234857676
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SLC35F3
COA6
LINC01354
LINC01132
LOC101927851
TOMM20
MIR4671
TARBP1
IRF2BP2
SNORA14B
LOC101927765
LINC00184
RBM34
LOC101927787
ARID4B
MIR4753
234.4
234.6
234.8
235
235.2
Position on chr1 (Mb)


2_1:L−LDL−PL_percent
chr2:21288226
r2
0.8
0.6
0.4
0.2
150
100
50
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←HS1BP3−IT1
←APOB
TDRD15→
←HS1BP3
GDF7→
←LDAH
20.8
21
21.2
21.4
21.6
Position on chr2 (Mb)

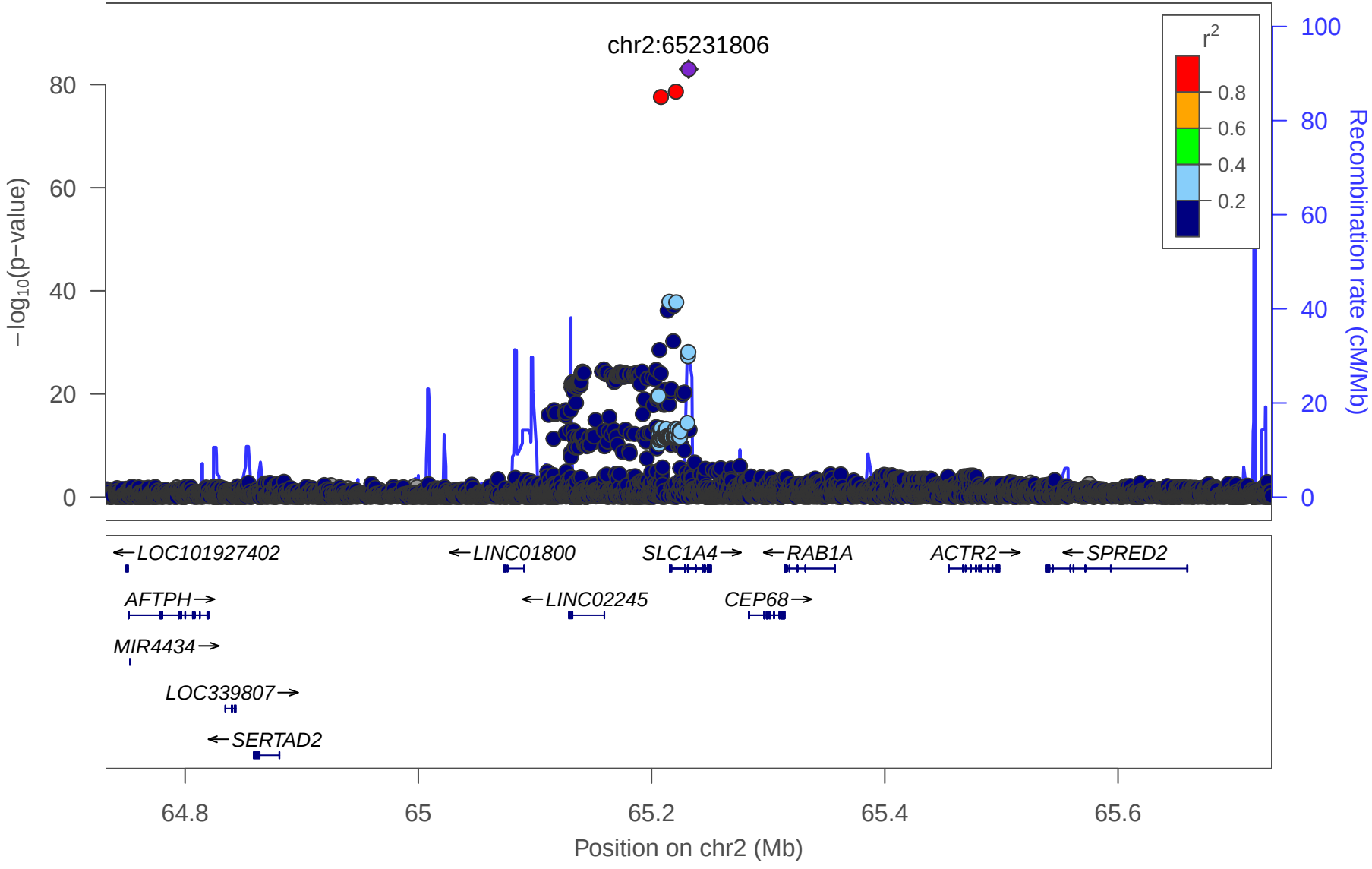
2_2:VLDL−TG

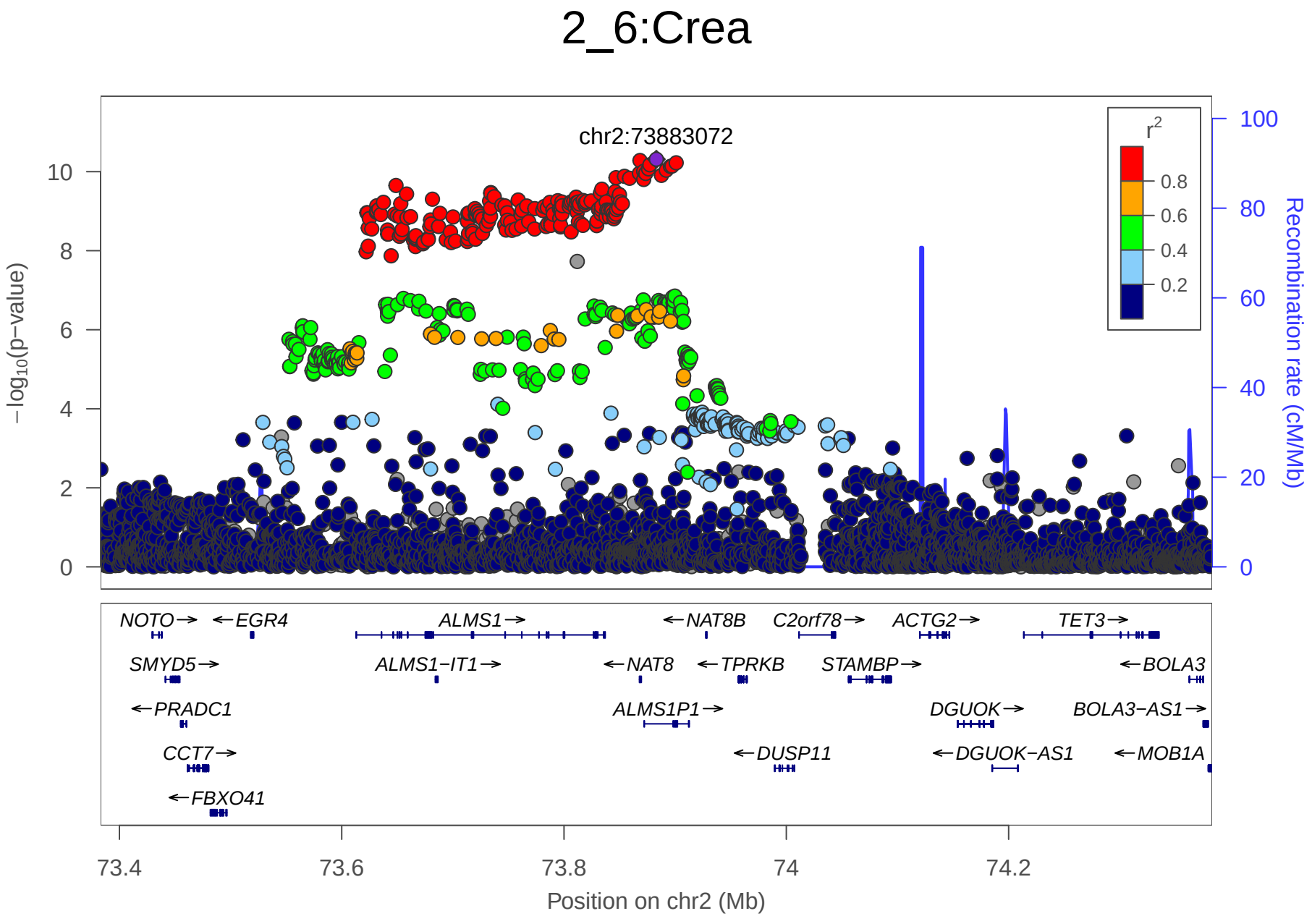

chr2:27730940
r²
0.8
0.6
0.4
0.2
−log10(p−value)
150
100
50
0
Recombination rate (cM/Mb)
100
80
60
40
20
0
MAPRE3→
←SLC5A6
←UCN
←PPM1G
←FNDC4
ZNF512→
MRPL33→
BRE→
TMEM214→
ATRAID→
←MPV17
NRBP1→
C2orf16→
←LINC01460
←RBKS
MIR4263→
←AGBL5−AS1
CAD→
←GTF3C2
←IFT172
←CCDC121
←BRE−AS1
AGBL5→
←SLC30A3
SNX17→
GCKR→
GPN1→
←OST4
DNAJC5G→
←FTH1P3
←SUPT7L
EMILIN1→
TRIM54→
KRTCAP3→
SLC4A1AP→
KHK→
GTF3C2−AS1→
←CGREF1
←EIF2B4
ABHD1→
←ZNF513
←PREB
2 genes
omitted
27.4
27.6
27.8
28
28.2
Position on chr2 (Mb)

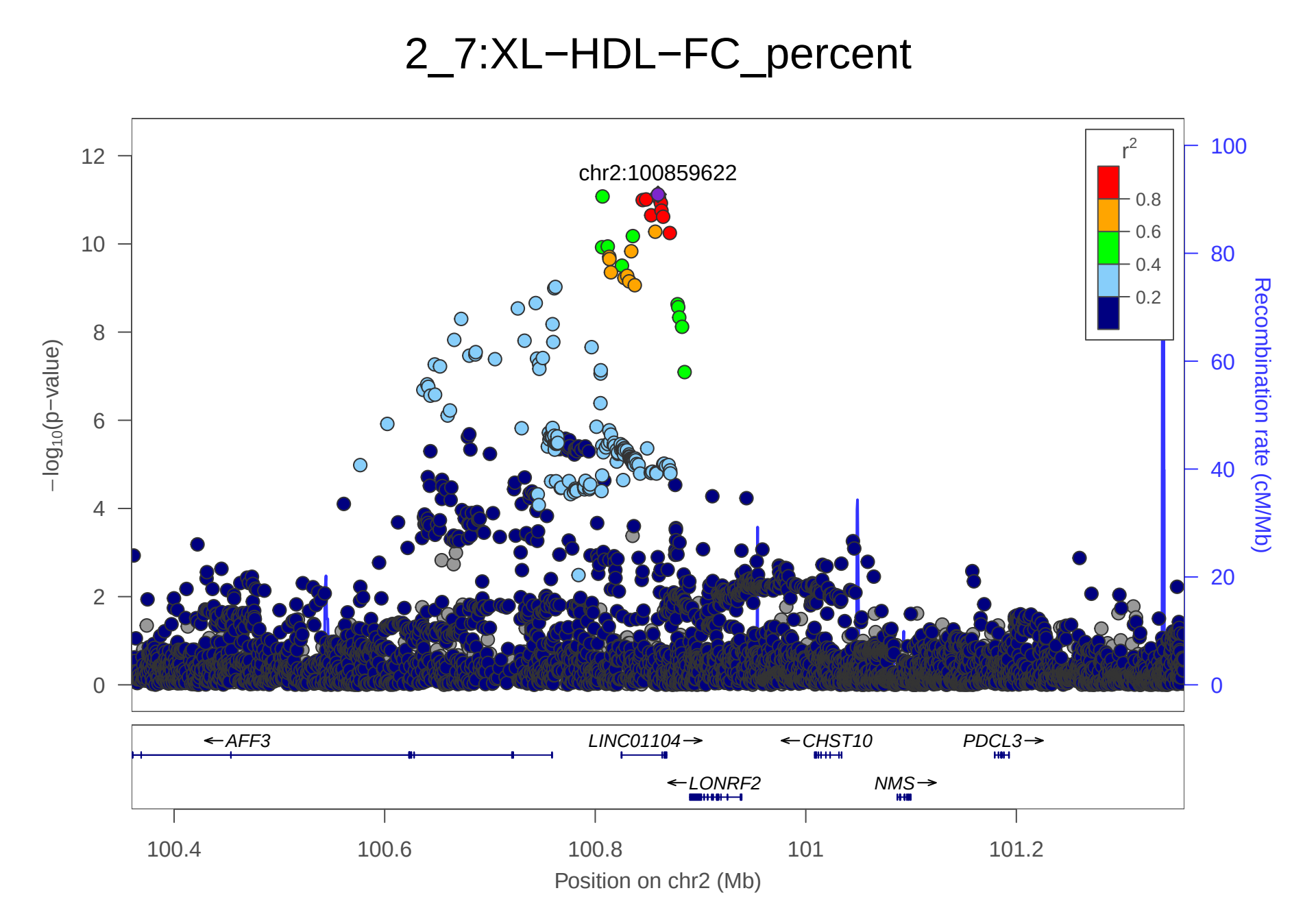

2_3:IDL−CE
chr2:44072576
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
50
40
30
20
10
0
100
80
60
40
20
0
THADA
PLEKHH2
ABCG5
LRPPRC
PPM1B
PREPL
C1GALT1C1L
ABCG8
SLC3A1
DYNC2LI1
43.6
43.8
44
44.2
44.4
Position on chr2 (Mb)

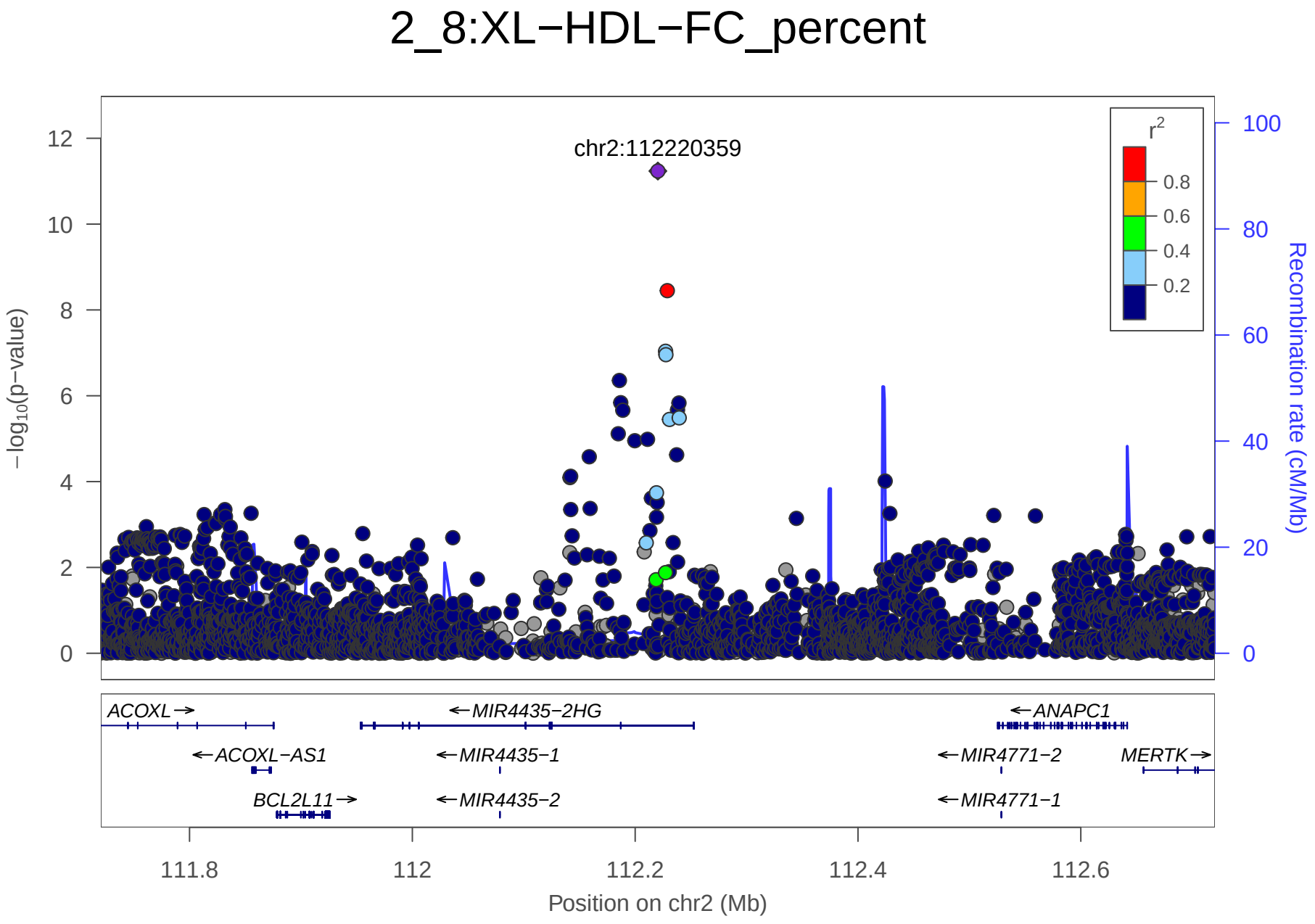

2_4:S−LDL−PL_percent
r2
0.8
0.6
0.4
0.2
chr2:62955387
−log10(p−value)
Recombination rate (cM/Mb)
TMEM17
EHBP1
DBIL5P2
LOC100132215
OTX1
WDPCP
Position on chr2 (Mb)

2_5:Val

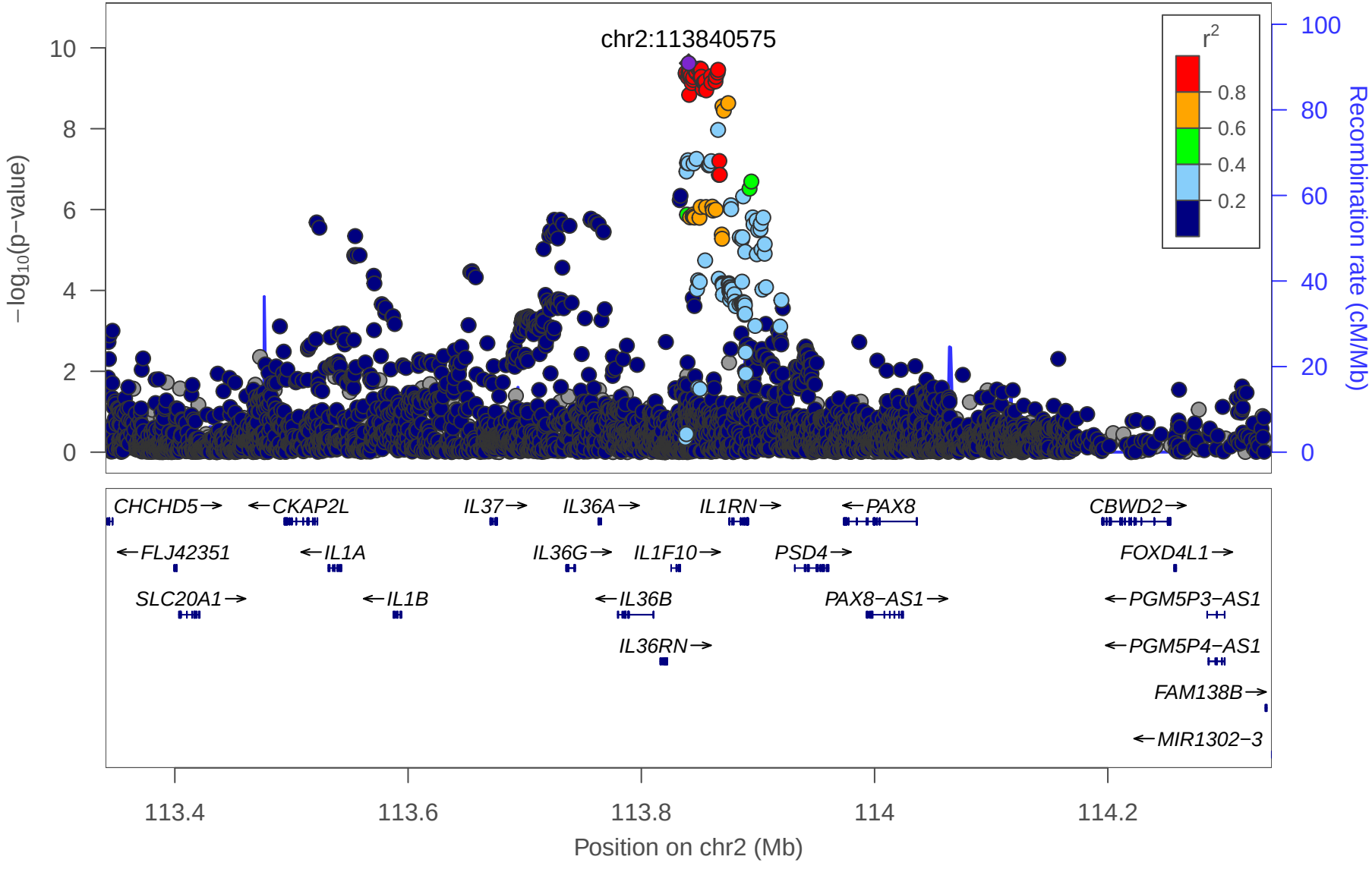

chr2:65231806
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
0
20
40
60
80
100
←LOC101927402
←LINC01800
SLC1A4→
←RAB1A
ACTR2→
←SPRED2
AFTPH→
←LINC02245
CEP68→
MIR4434→
LOC339807→
←SERTAD2
64.8
65
65.2
65.4
65.6
Position on chr2 (Mb)

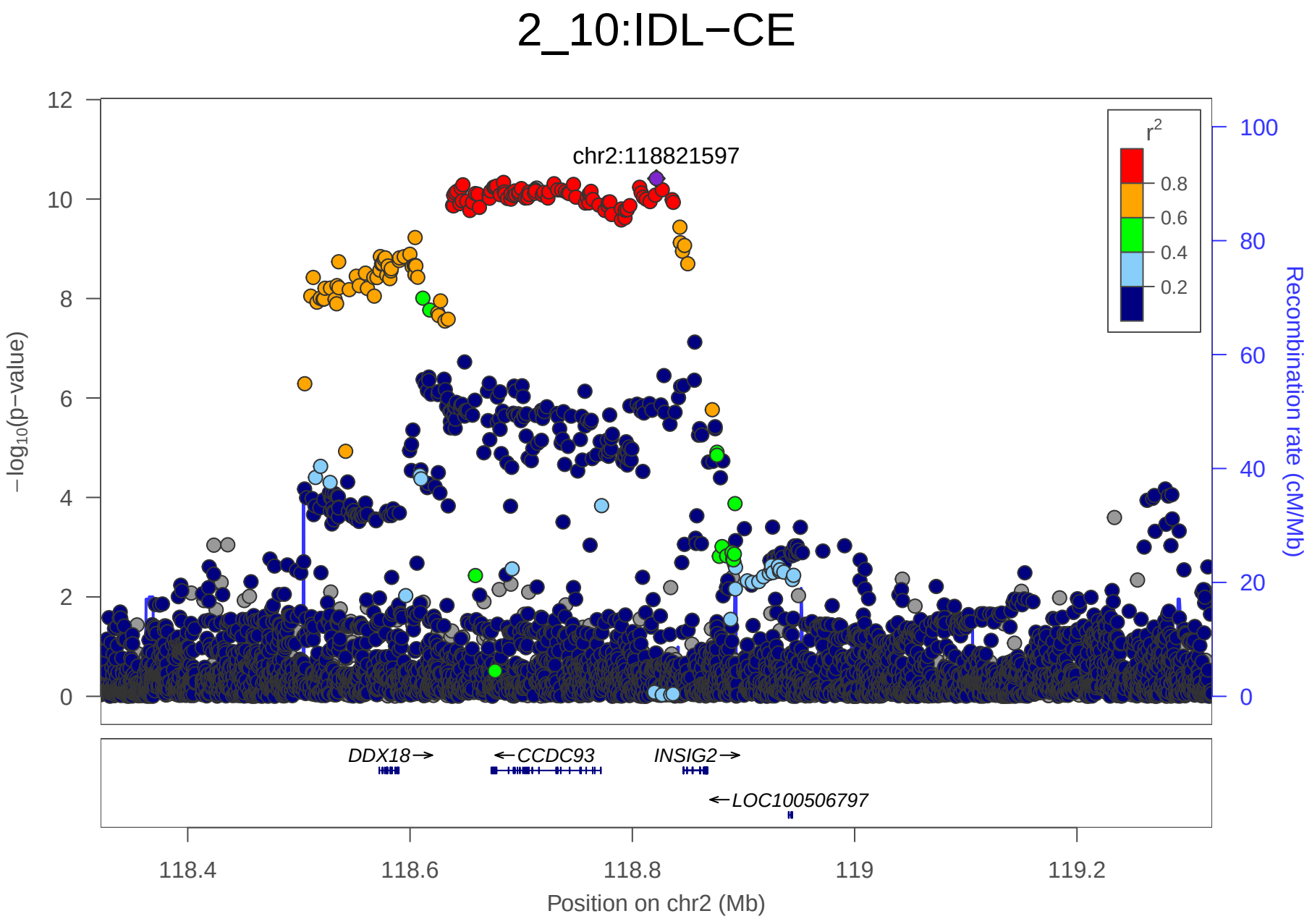

2_6:Crea
chr2:73883072
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
NOTO→
←EGR4
ALMS1→
←NAT8B
C2orf78→
ACTG2→
TET3→
SMYD5→
ALMS1−IT1→
←NAT8
←TPRKB
STAMBP→
←BOLA3
←PRADC1
ALMS1P1→
DGUOK→
BOLA3−AS1→
CCT7→
←DUSP11
←DGUOK−AS1
←MOB1A
←FBXO41
Position on chr2 (Mb)

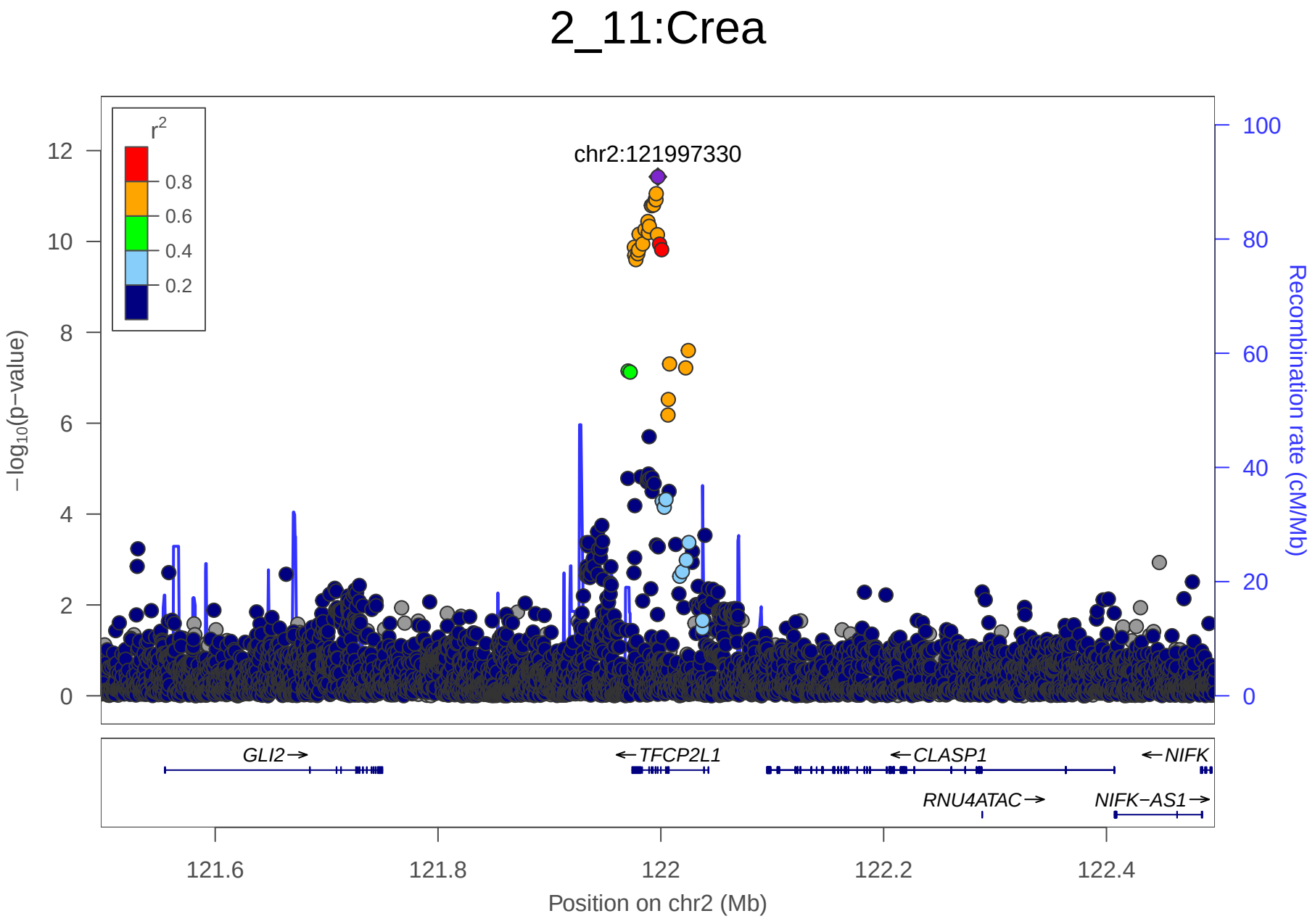

2_7:XL−HDL−FC_percent
chr2:100859622
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
AFF3
LINC01104
CHST10
PDCL3
LONRF2
NMS
Position on chr2 (Mb)

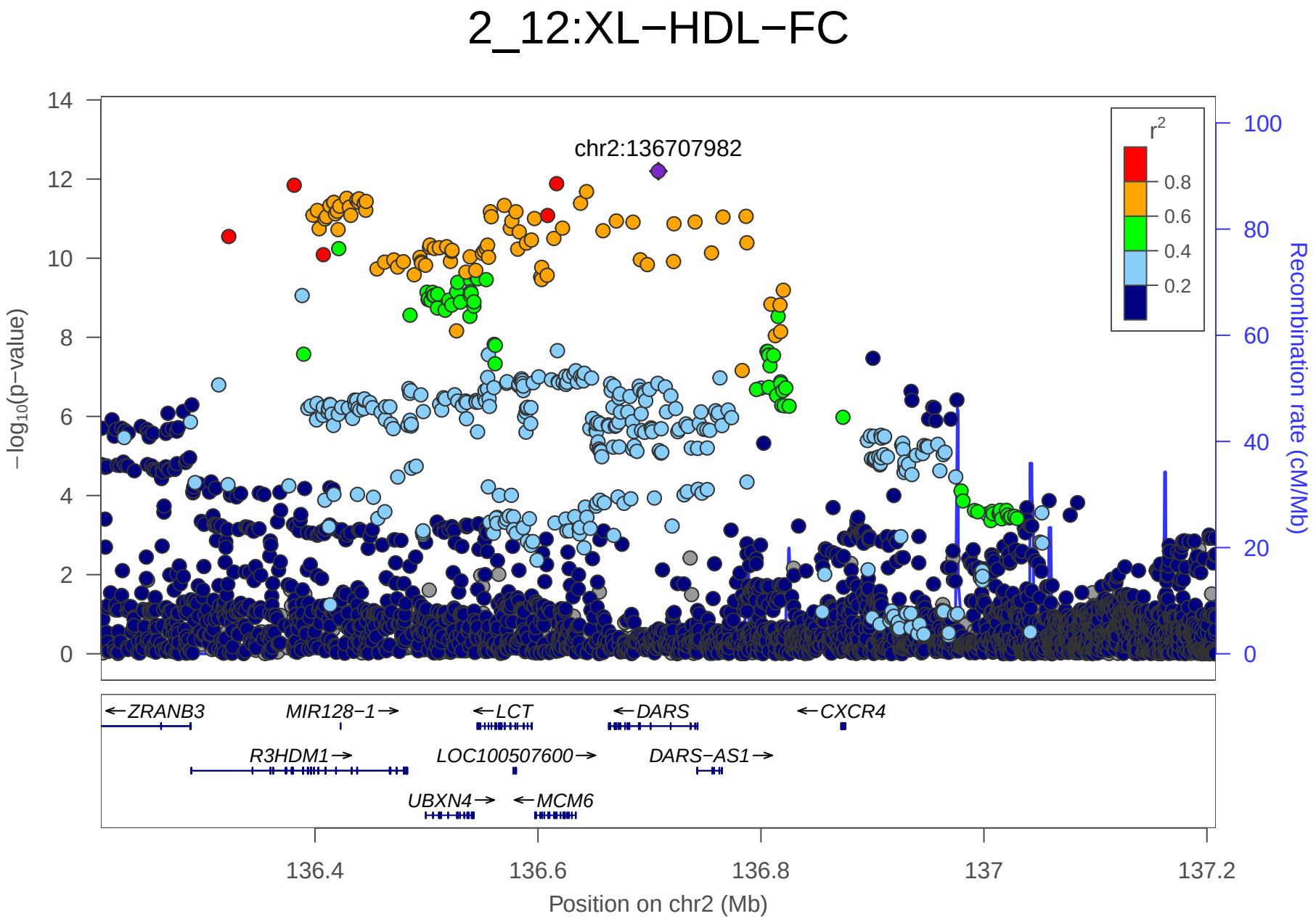

2_8:XL−HDL−FC_percent
chr2:112220359
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ACOXL
MIR4435−2HG
ANAPC1
ACOXL−AS1
MIR4435−1
MIR4771−2
MERTK
BCL2L11
MIR4435−2
MIR4771−1
Position on chr2 (Mb)

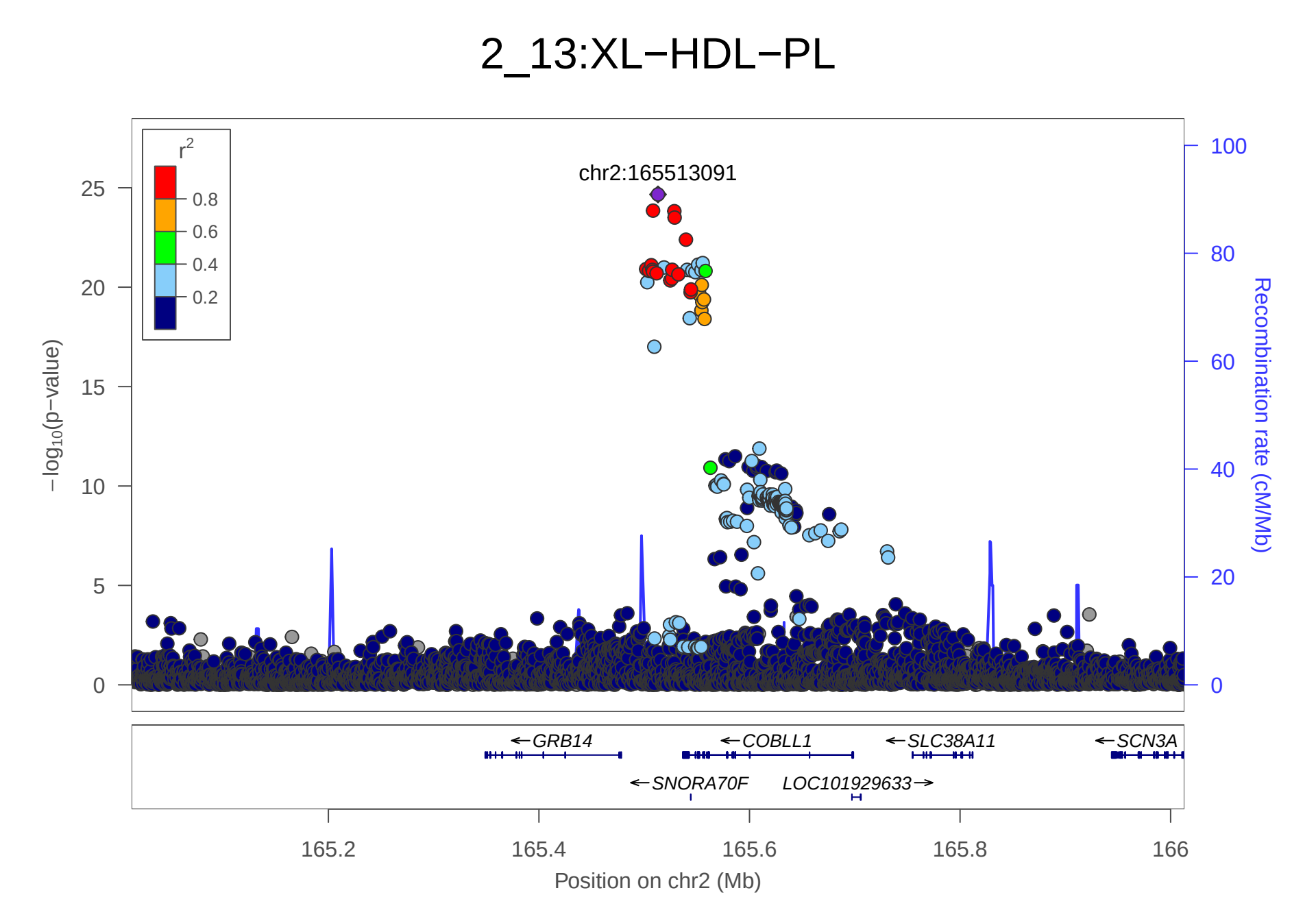
2_9:GlycA

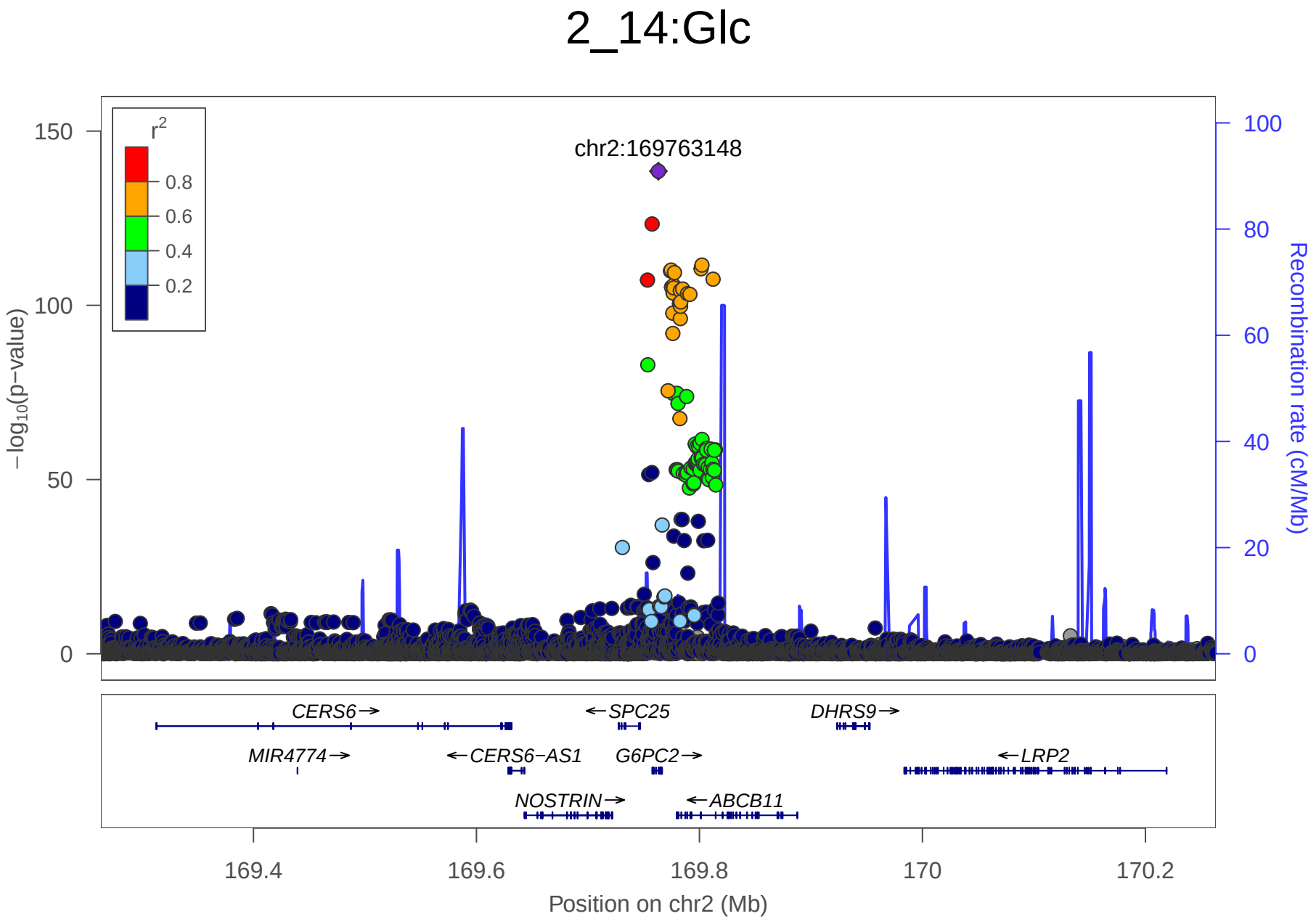

chr2:113840575
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CHCHD5→
←CKAP2L
IL37→
IL36A→
IL1RN→
←PAX8
CBWD2→
←FLJ42351
←IL1A
IL36G→
IL1F10→
PSD4→
FOXD4L1→
SLC20A1→
←IL1B
←IL36B
PAX8−AS1→
←PGM5P3−AS1
IL36RN→
←PGM5P4−AS1
FAM138B→
←MIR1302−3
Position on chr2 (Mb)

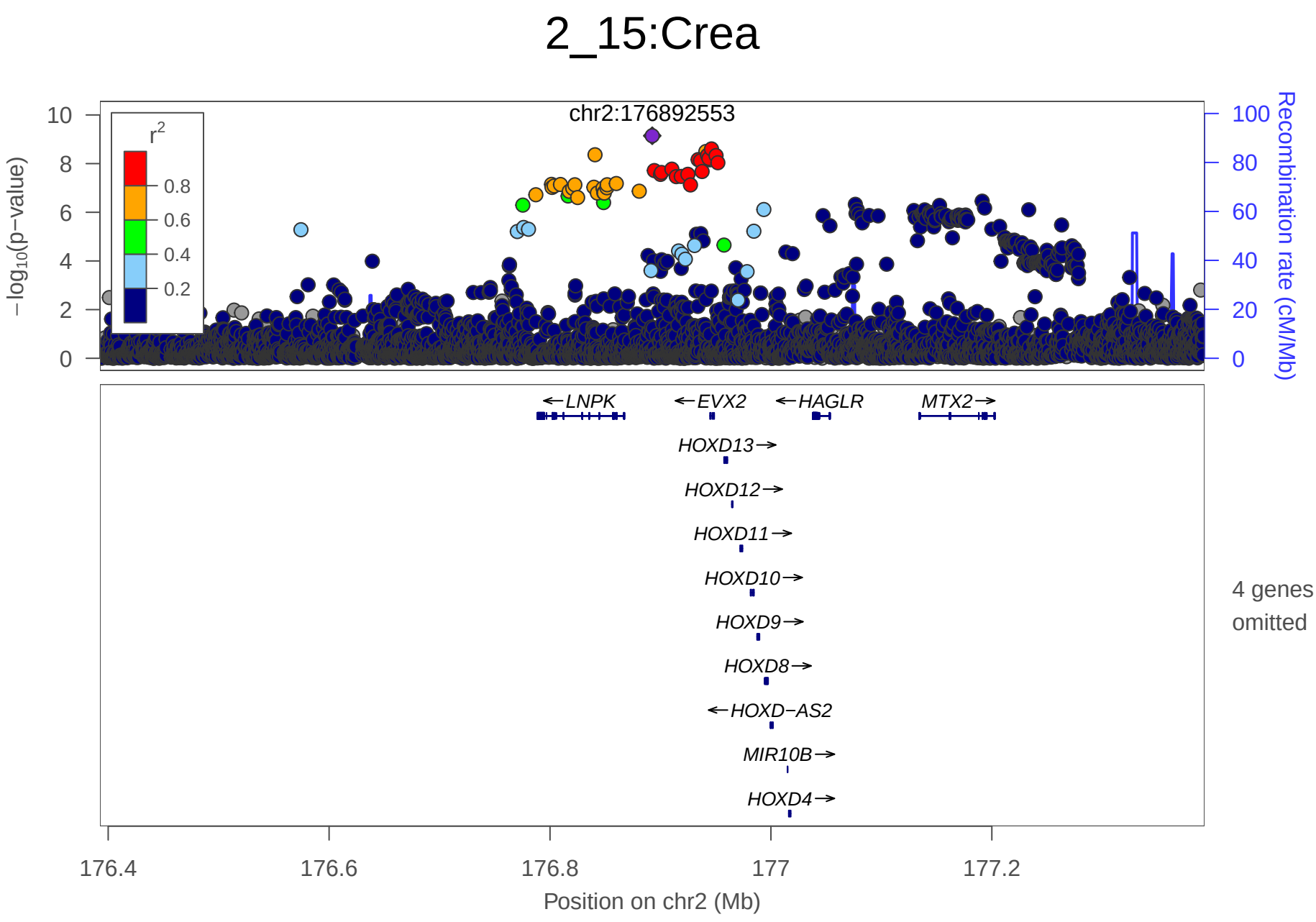

2_10:IDL−CE
chr2:118821597
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DDX18
CCDC93
INSIG2
LOC100506797
Position on chr2 (Mb)
118.4
118.6
118.8
119
119.2

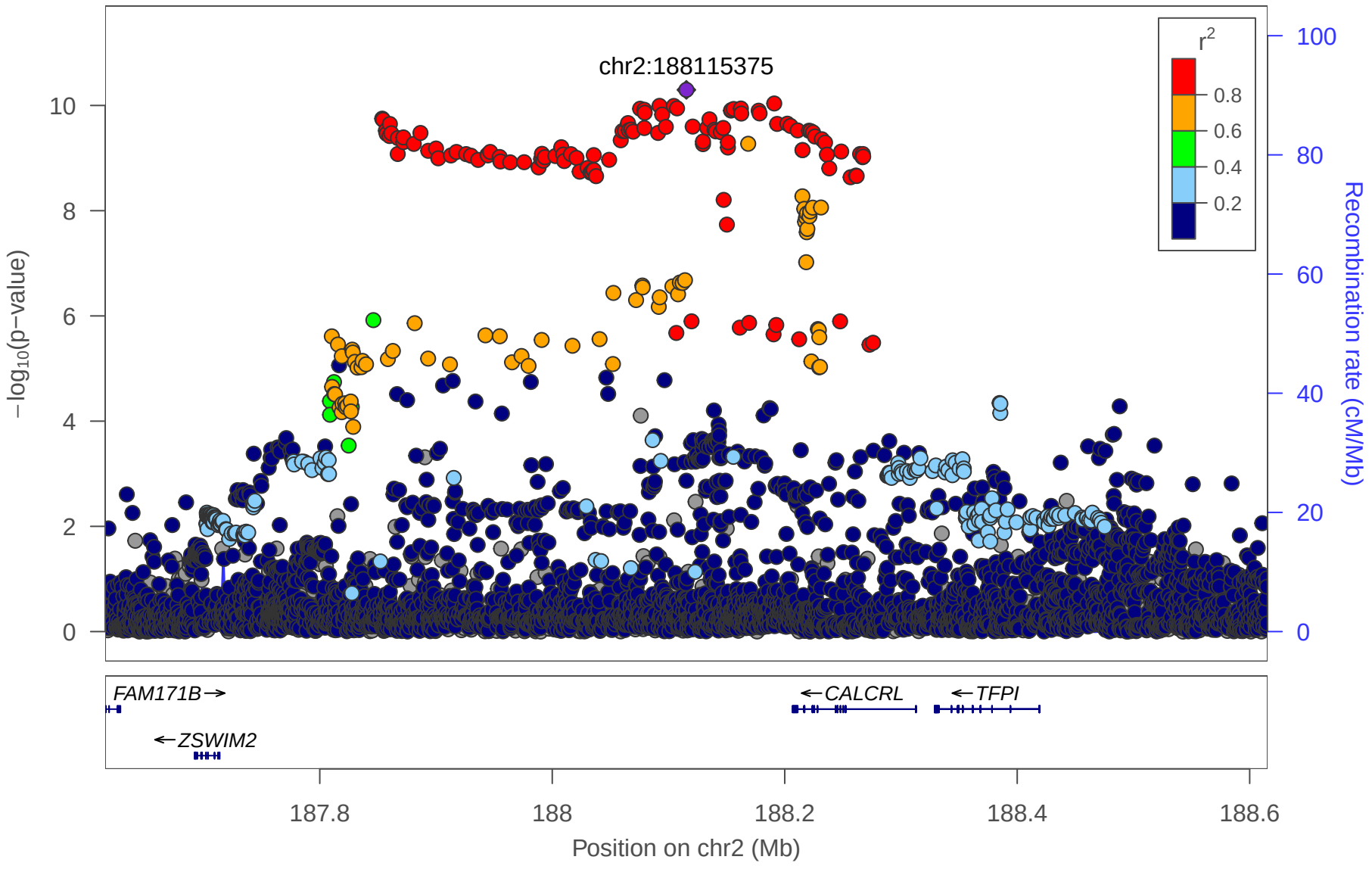

2_11:Crea
chr2:121997330
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
GLI2
TFCP2L1
CLASP1
NIFK
RNU4ATAC
NIFK−AS1
Position on chr2 (Mb)

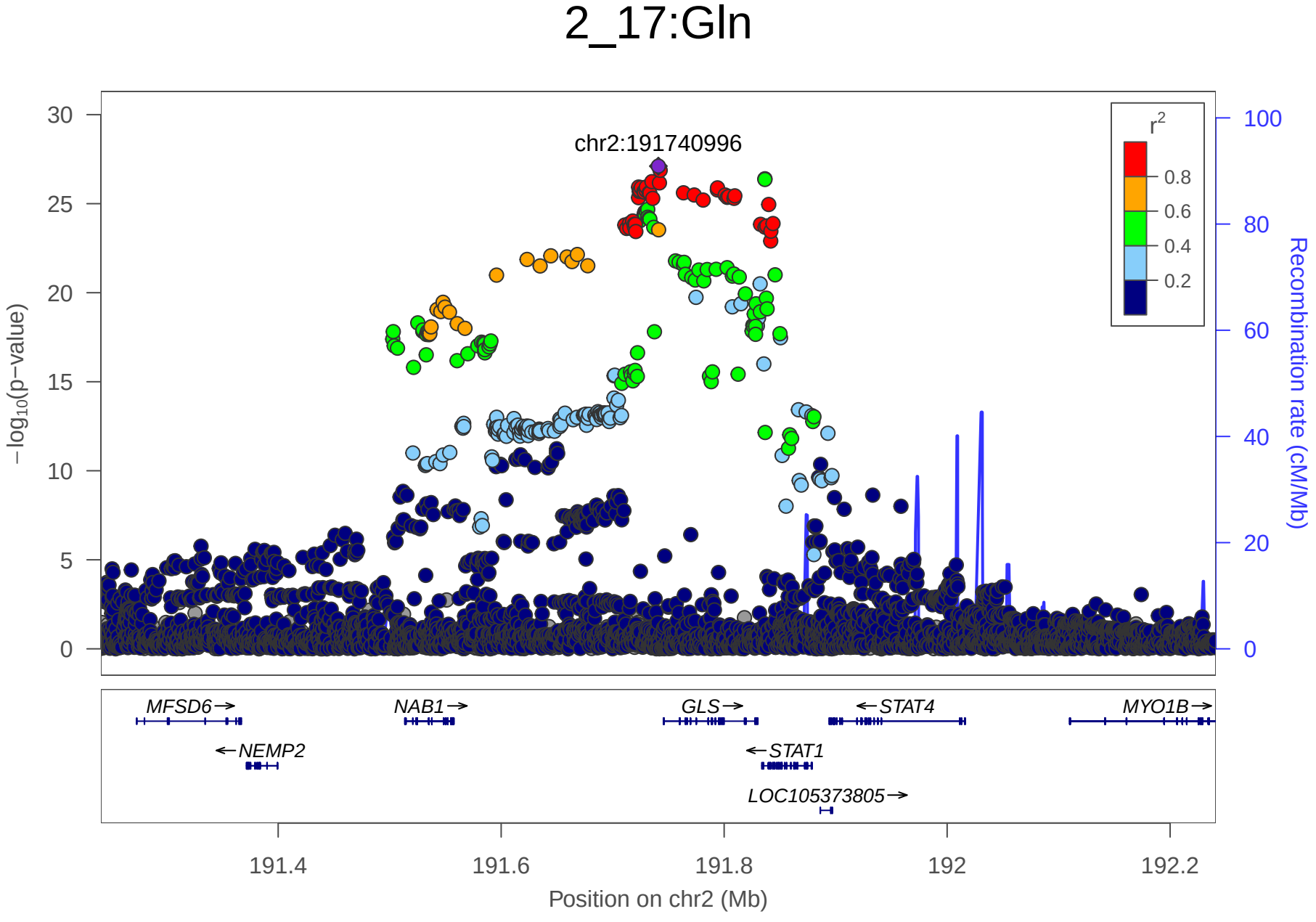

2_12:XL−HDL−FC
chr2:136707982
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ZRANB3
MIR128−1
LCT
DARS
CXCR4
R3HDM1
LOC100507600
DARS−AS1
UBXN4
MCM6
Position on chr2 (Mb)

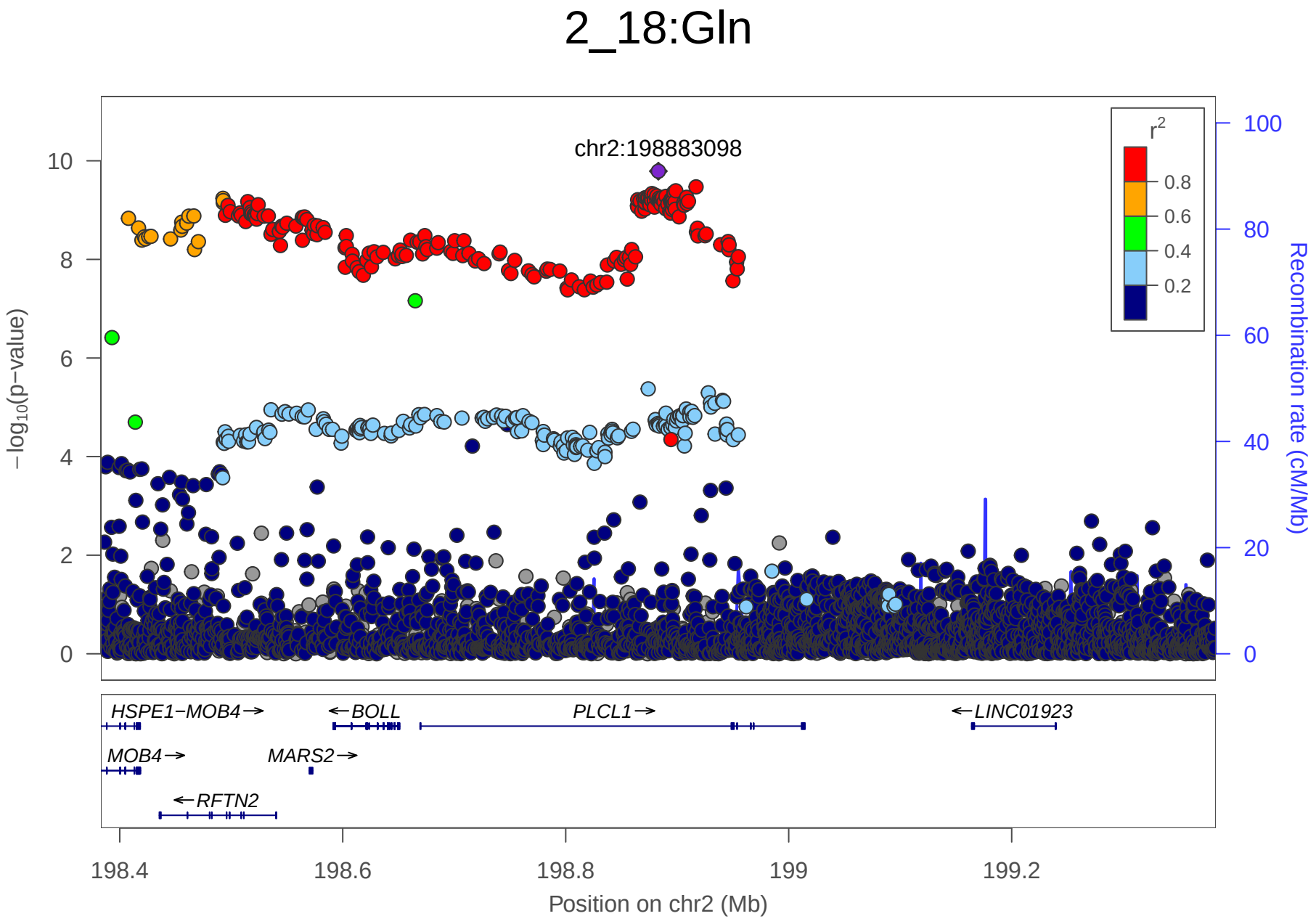

2_13:XL−HDL−PL
chr2:165513091
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
GRB14
COBLL1
SLC38A11
SCN3A
SNORA70F
LOC101929633
Position on chr2 (Mb)

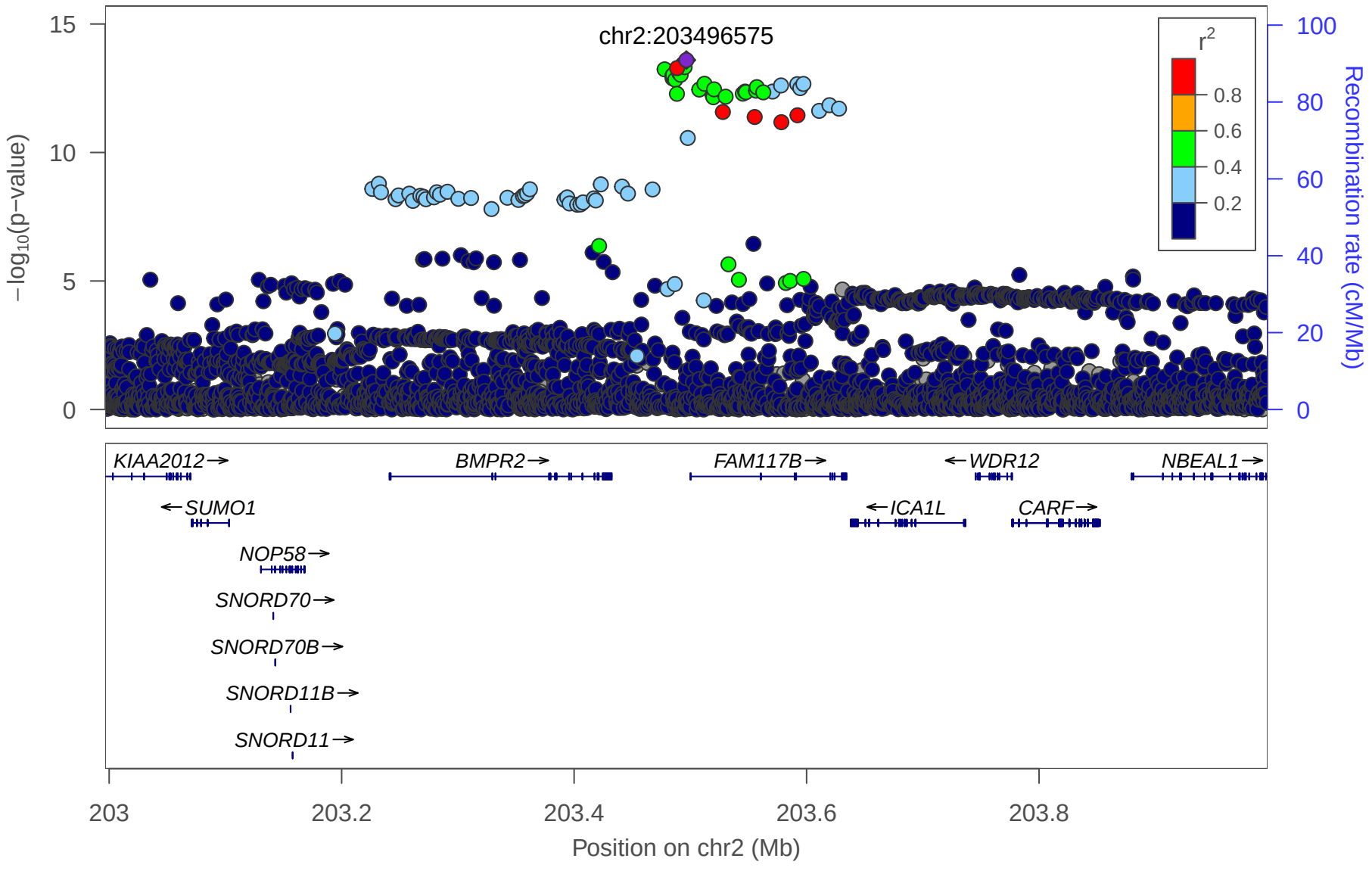

2_14:Glc
chr2:169763148
r2
0.8
0.6
0.4
0.2
150
100
50
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
CERS6→
←SPC25
DHRS9→
MIR4774→
←CERS6−AS1
G6PC2→
←LRP2
NOSTRIN→
←ABCB11
169.4
169.6
169.8
170
170.2
Position on chr2 (Mb)

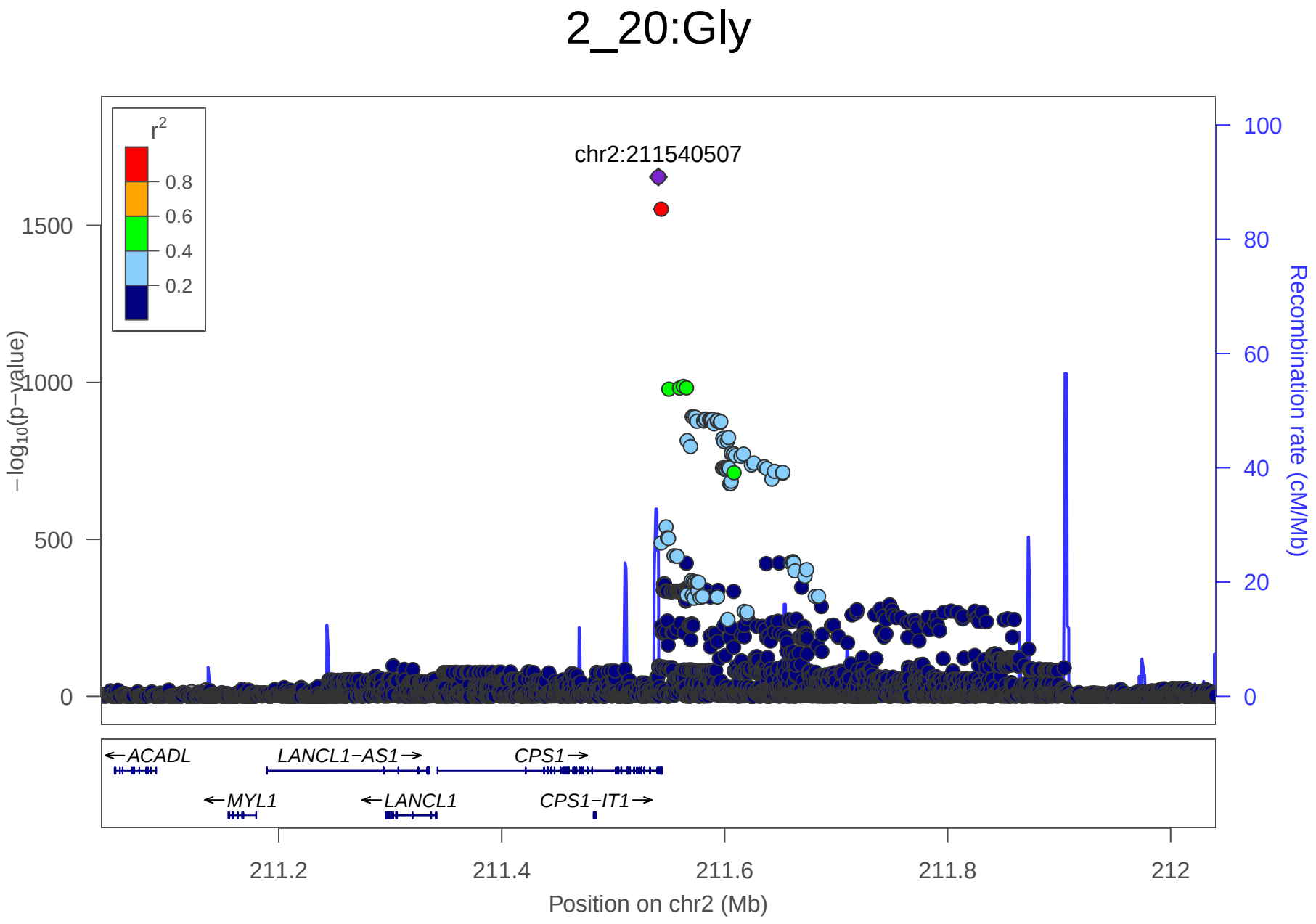

2_15:Crea
chr2:176892553
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LNPK
EVX2
HAGLR
MTX2
HOXD13
HOXD12
HOXD11
HOXD10
HOXD9
HOXD8
HOXD−AS2
MIR10B
HOXD4
4 genes omitted
Position on chr2 (Mb)

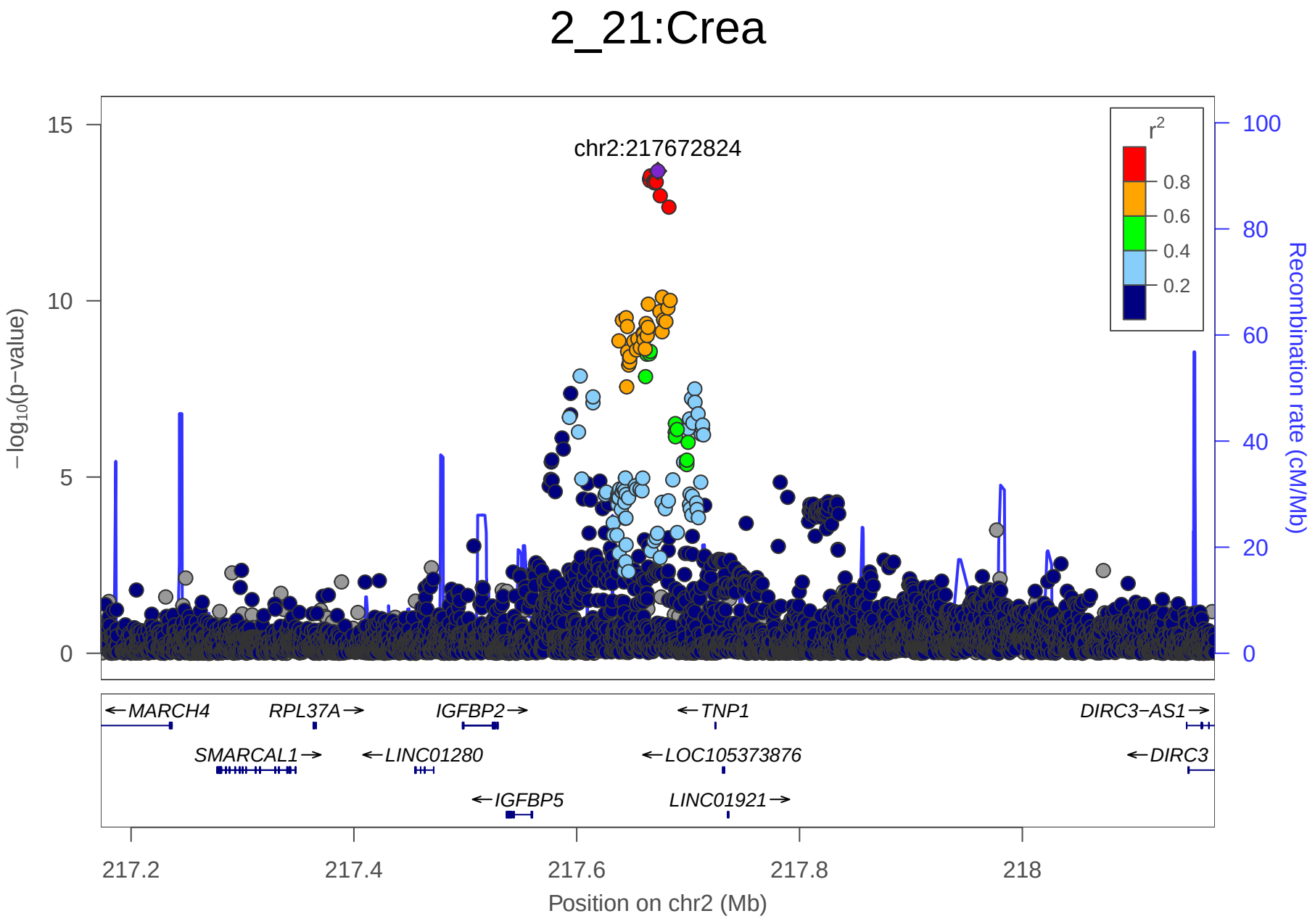

2_16:Crea
chr2:188115375
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FAM171B
ZSWIM2
CALCRL
TFPI
Position on chr2 (Mb)


2_17:Gln
chr2:191740996
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
30
25
20
15
10
5
0
100
80
60
40
20
0
MFSD6
NAB1
GLS
STAT4
MYO1B
NEMP2
STAT1
LOC105373805
191.4
191.6
191.8
192
192.2
Position on chr2 (Mb)

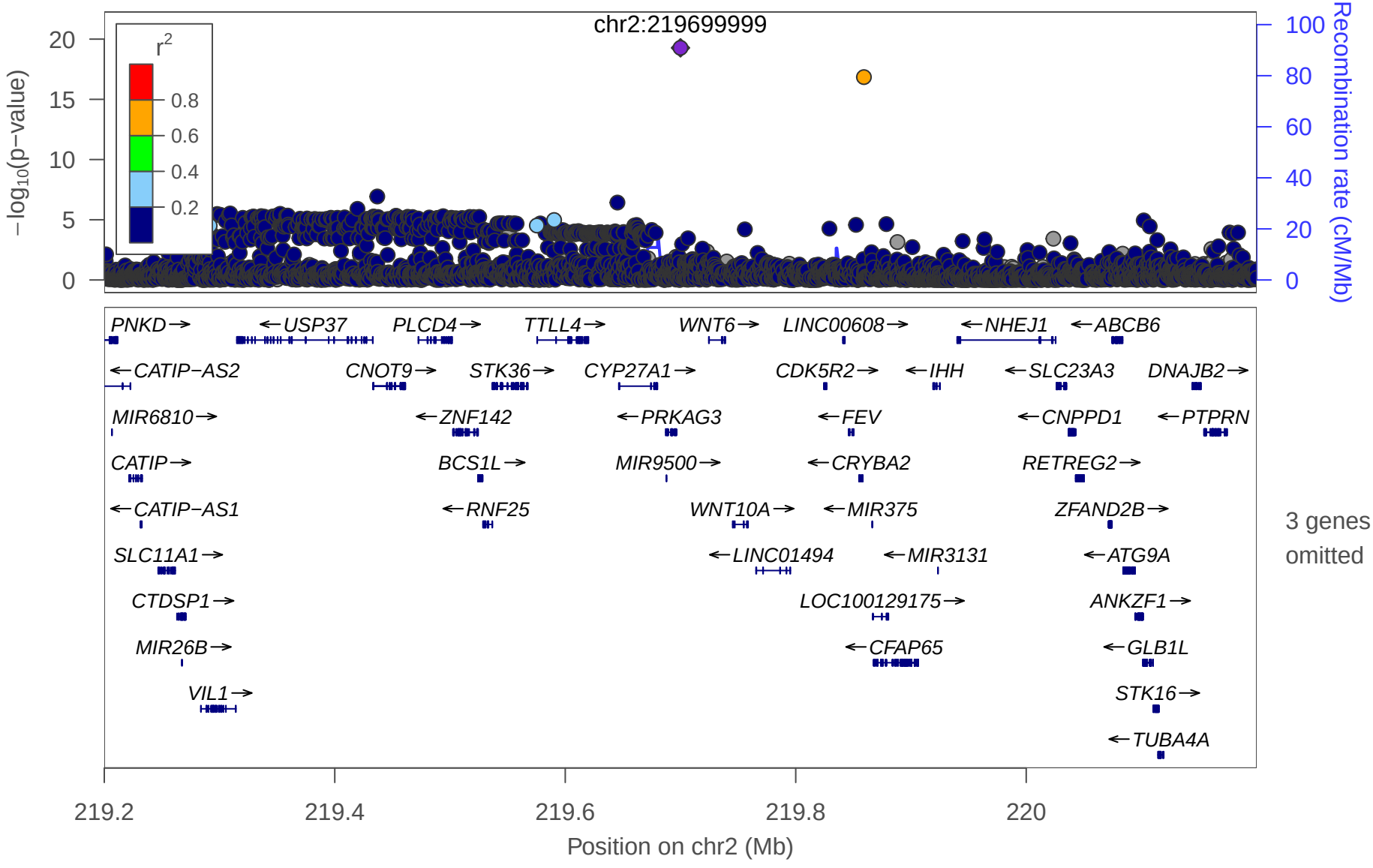

2_18:Gln
chr2:198883098
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
HSPE1−MOB4
BOLL
PLCL1
LINC01923
MOB4
MARS2
RFTN2
198.4
198.6
198.8
199
199.2
Position on chr2 (Mb)

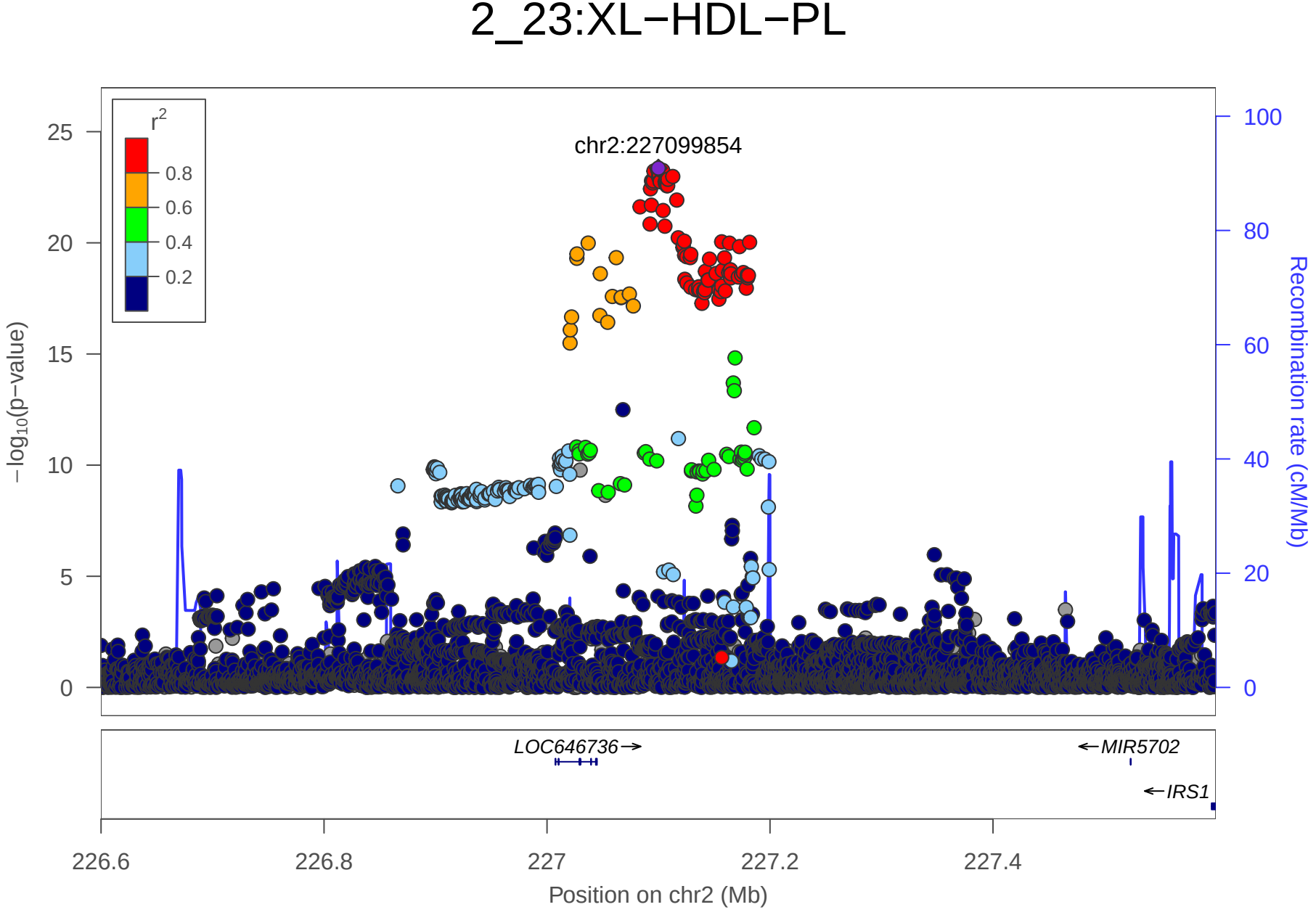

2_19:PUFA
chr2:203496575
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
KIAA2012
BMPR2
FAM117B
WDR12
NBEAL1
SUMO1
ICA1L
CARF
NOP58
SNORD70
SNORD70B
SNORD11B
SNORD11
203
203.2
203.4
203.6
203.8
Position on chr2 (Mb)

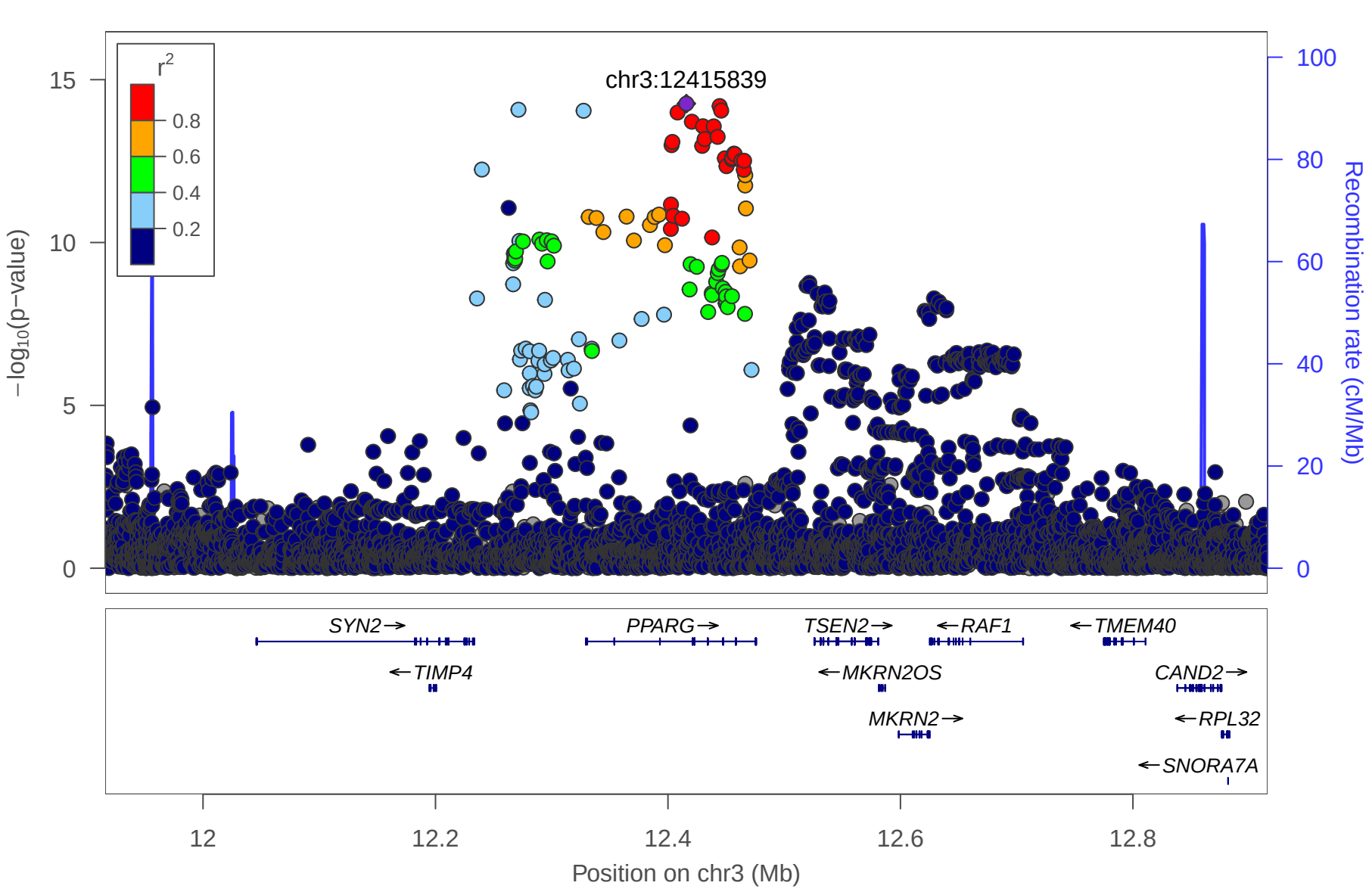

2_20:Gly
r2
0.8
0.6
0.4
0.2
chr2:211540507
1500
1000
500
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←ACADL
LANCL1−AS1→
CPS1→
←MYL1
←LANCL1
CPS1−IT1→
211.2
211.4
211.6
211.8
212
Position on chr2 (Mb)

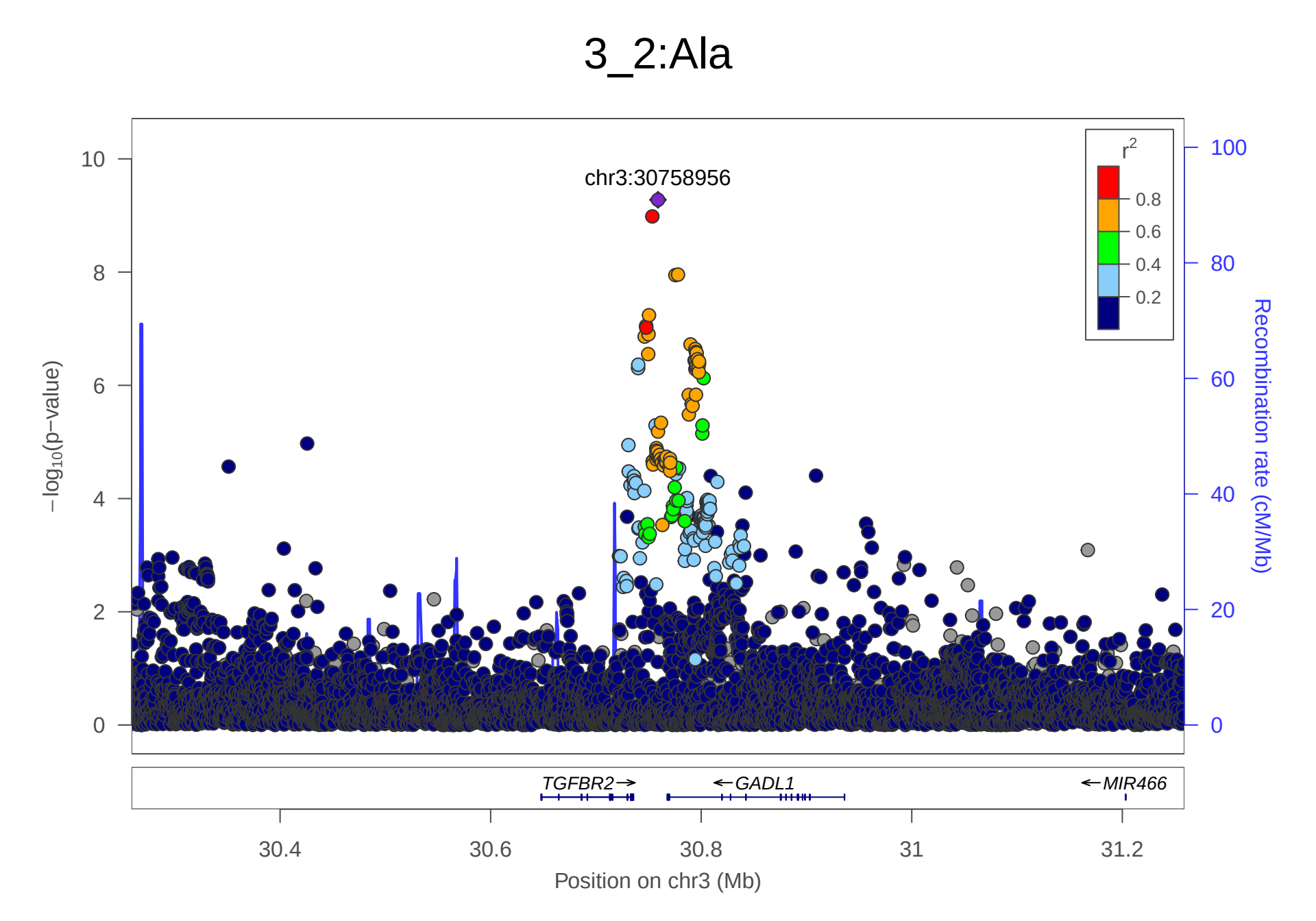

2_21:Crea
chr2:217672824
r2
0.8
0.6
0.4
0.2
15
10
5
0
100
80
60
40
20
0
−log10(p−value)
Recombination rate (cM/Mb)
←MARCH4
RPL37A→
IGFBP2→
←TNP1
DIRC3−AS1→
SMARCAL1→
←LINC01280
←LOC105373876
←DIRC3
←IGFBP5
LINC01921→
217.2
217.4
217.6
217.8
218
Position on chr2 (Mb)

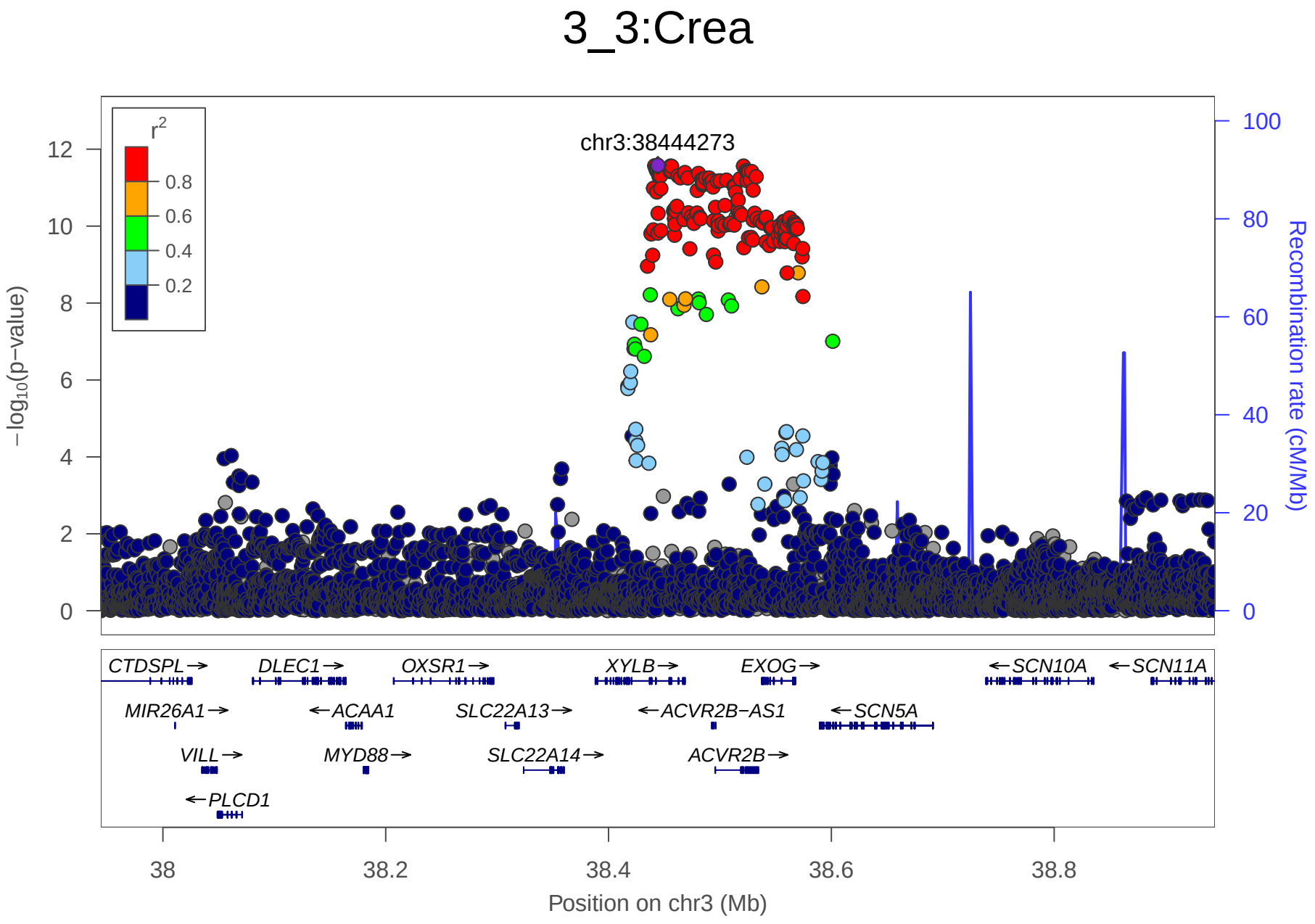
2_22:M−VLDL−TG


chr2:219699999
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PNKD→ ←USP37 PLCD4→ TTLL4→ WNT6→ LINC00608→ ←NHEJ1 ←ABCB6
←CATIP−AS2 CNOT9→ STK36→ CYP27A1→ CDK5R2→ ←IHH ←SLC23A3 DNAJB2→
MIR6810→ ←ZNF142 ←PRKAG3 ←FEV ←CNPPD1 ←PTPRN
CATIP→ BCS1L→ MIR9500→ ←CRYBA2 RETREG2→
←CATIP−AS1 ←RNF25 WNT10A→ ←MIR375 ZFAND2B→
SLC11A1→ ←LINC01494 ←MIR3131 ←ATG9A
CTDSP1→ LOC100129175→ ANKZF1→
MIR26B→ ←CFAP65 ←GLB1L
VIL1→ STK16→
←TUBA4A
3 genes omitted
Position on chr2 (Mb)

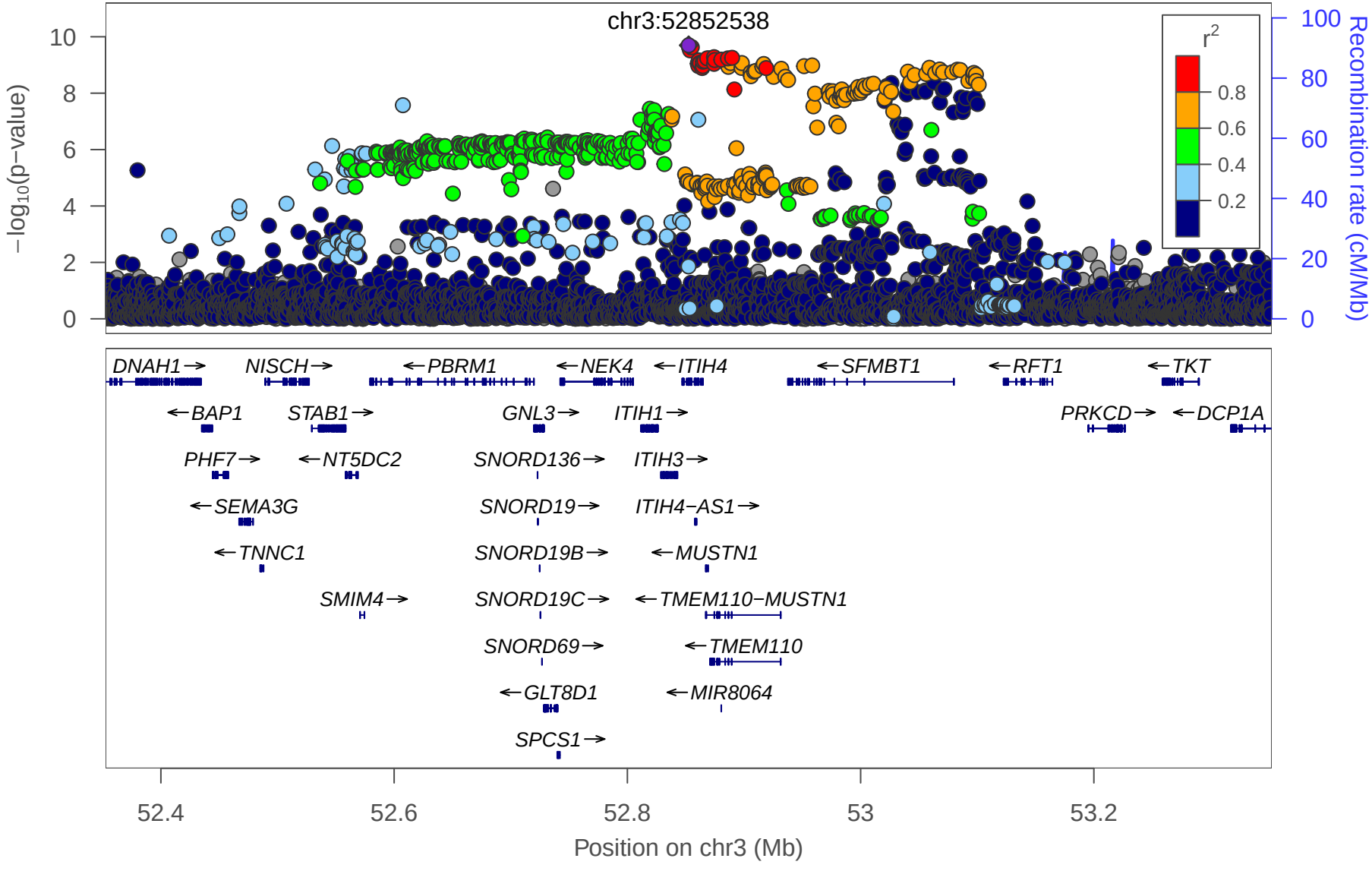

2_23:XL−HDL−PL
chr2:227099854
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LOC646736
MIR5702
IRS1
Position on chr2 (Mb)

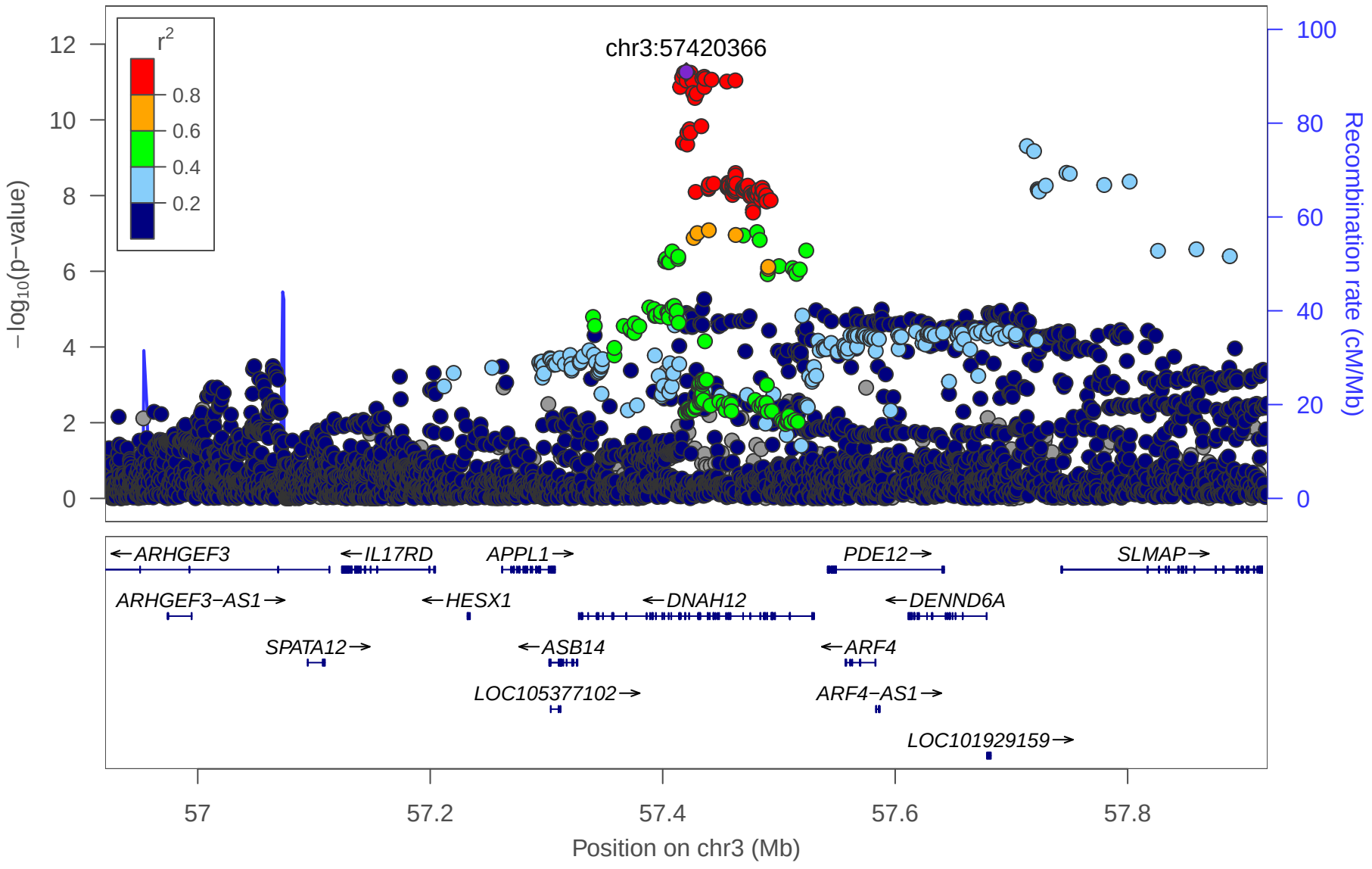

3_1:EstC
chr3:12415839
r2
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
SYN2
PPARG
TSEN2
RAF1
TMEM40
TIMP4
MKRN2OS
CAND2
MKRN2
RPL32
SNORA7A
12
12.2
12.4
12.6
12.8
Position on chr3 (Mb)

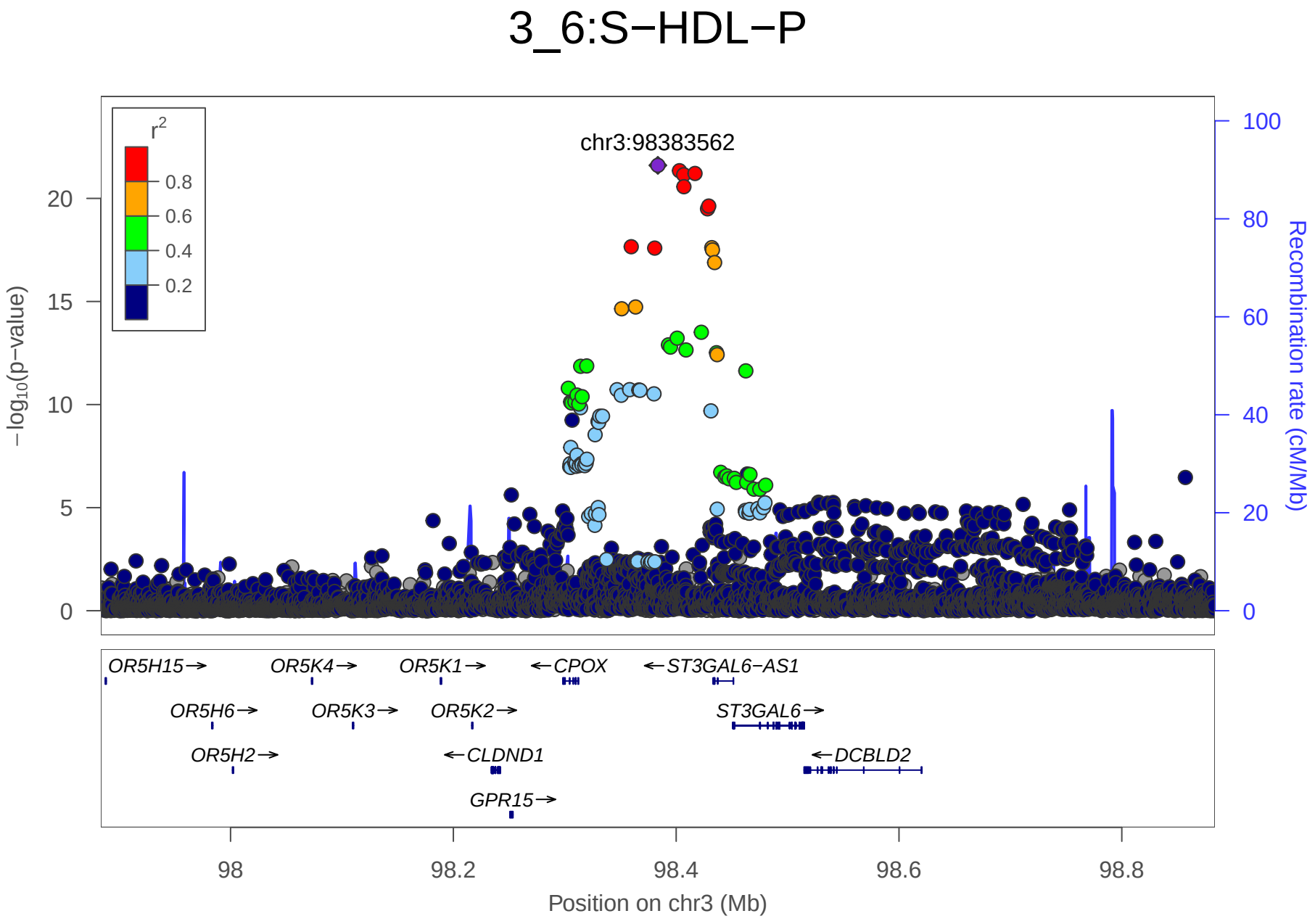

3_2:Ala
chr3:30758956
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
TGFBR2
GADL1
MIR466
Position on chr3 (Mb)

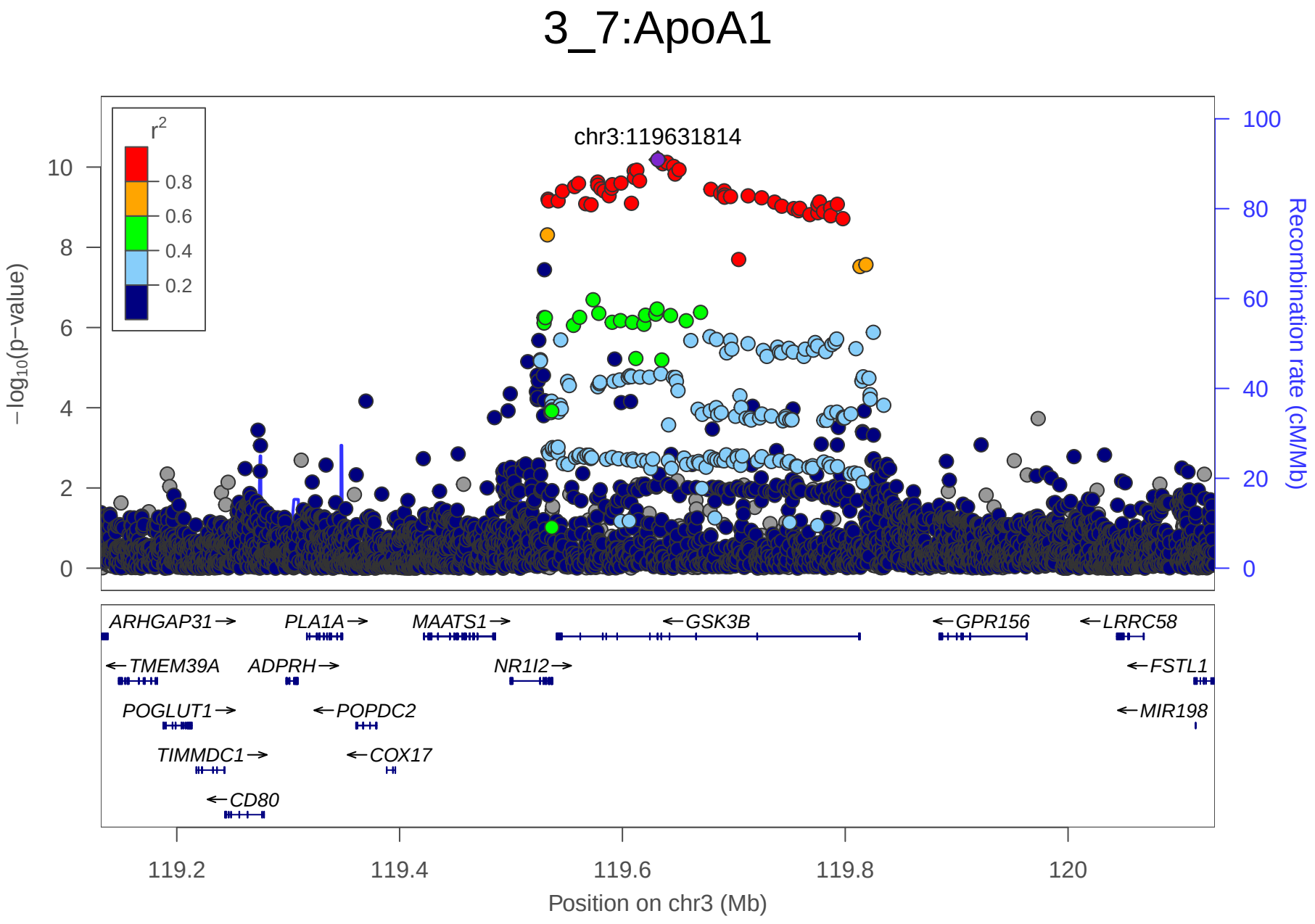

3_3:Crea
chr3:38444273
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CTDSPL→
DLEC1→
OXSR1→
XYLB→
EXOG→
←SCN10A
←SCN11A
MIR26A1→
←ACAA1
SLC22A13→
←ACVR2B−AS1
←SCN5A
VILL→
MYD88→
SLC22A14→
ACVR2B→
←PLCD1
Position on chr3 (Mb)

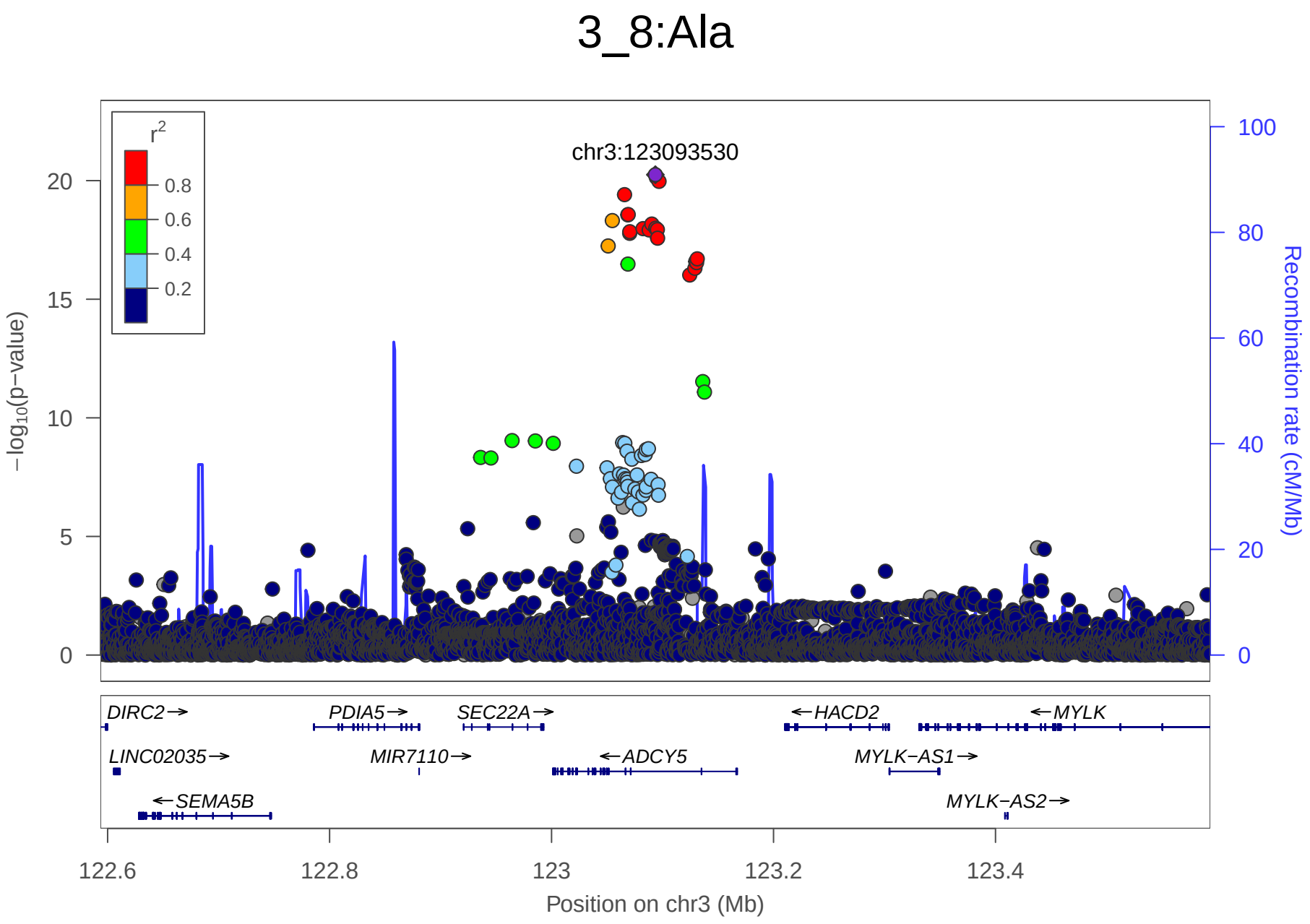
3_4:Crea


chr3:52852538
$-\log_{10}$(p−value)
Recombination rate (cM/Mb)
r^2
0.8
0.6
0.4
0.2
DNAH1→
NISCH→
←PBRM1
←NEK4
←ITIH4
←SFMBT1
←RFT1
←TKT
←BAP1
STAB1→
GNL3→
ITIH1→
PRKCD→
←DCP1A
PHF7→
←NT5DC2
SNORD136→
ITIH3→
←SEMA3G
SNORD19→
ITIH4−AS1→
←TNNC1
SNORD19B→
←MUSTN1
SMIM4→
SNORD19C→
←TMEM110−MUSTN1
SNORD69→
←TMEM110
←GLT8D1
←MIR8064
SPCS1→
52.4
52.6
52.8
53
53.2
Position on chr3 (Mb)

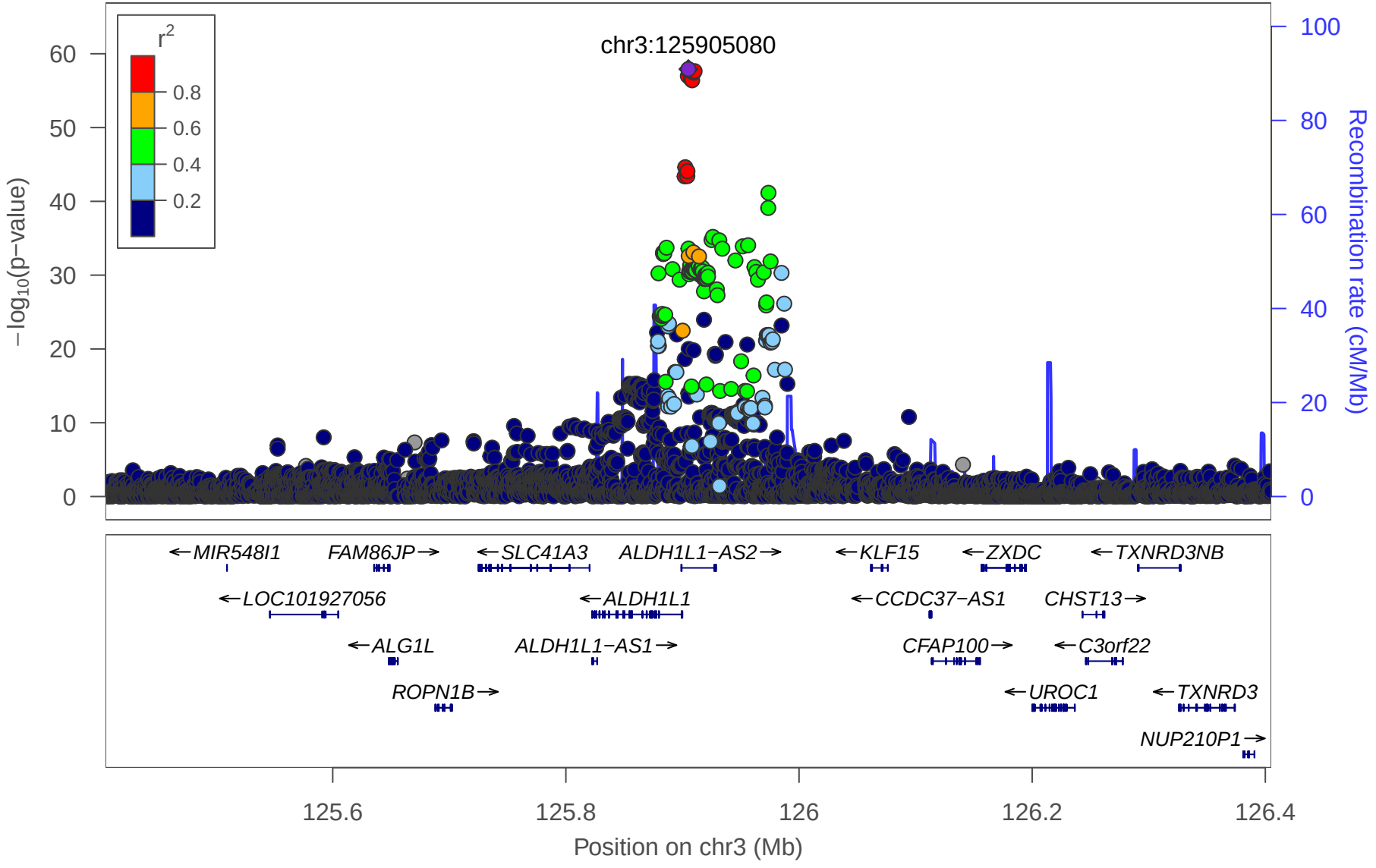

3_5:Serum−TG
chr3:57420366
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ARHGEF3
IL17RD
APPL1
PDE12
SLMAP
ARHGEF3−AS1
HESX1
DNAH12
DENND6A
SPATA12
ASB14
ARF4
LOC105377102
ARF4−AS1
LOC101929159
Position on chr3 (Mb)

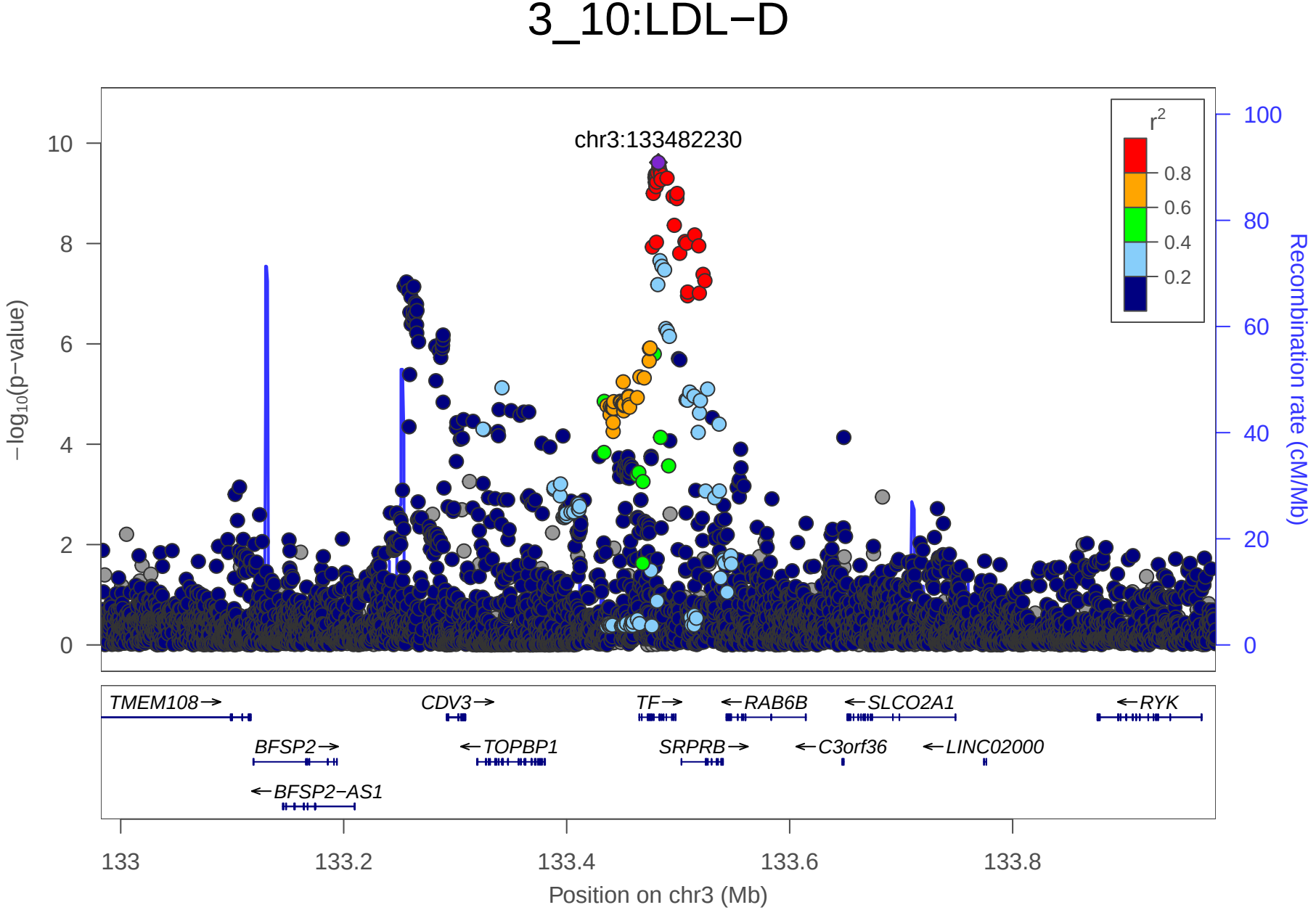

3_6:S−HDL−P
chr3:98383562
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
OR5H15
OR5K4
OR5K1
CPOX
ST3GAL6−AS1
OR5H6
OR5K3
OR5K2
ST3GAL6
OR5H2
CLDND1
DCBLD2
GPR15
Position on chr3 (Mb)

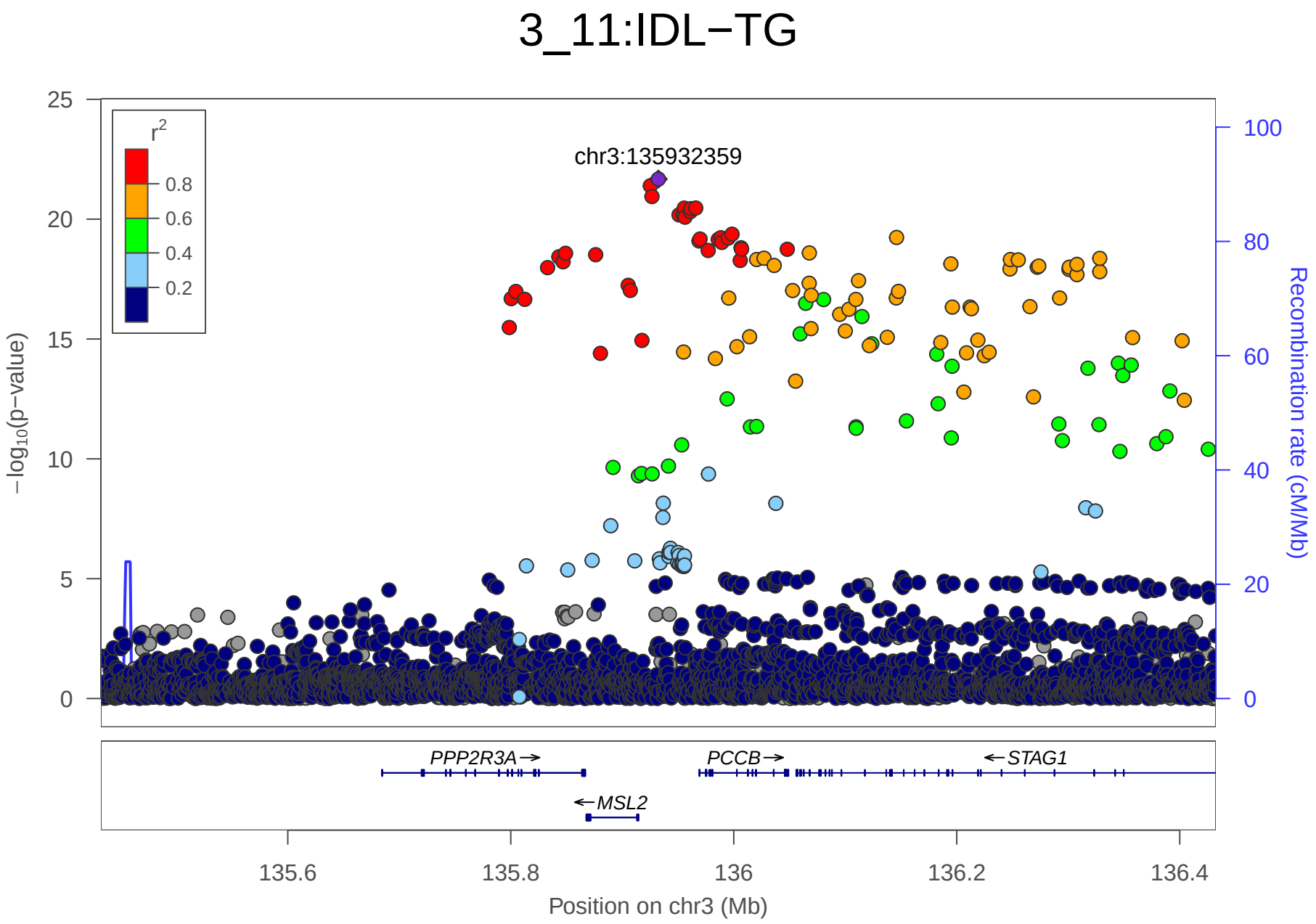

3_7:ApoA1
chr3:119631814
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ARHGAP31
PLA1A
MAATS1
GSK3B
GPR156
LRRC58
TMEM39A
ADPRH
NR1I2
FSTL1
POGLUT1
POPDC2
MIR198
TIMMDC1
COX17
CD80
Position on chr3 (Mb)

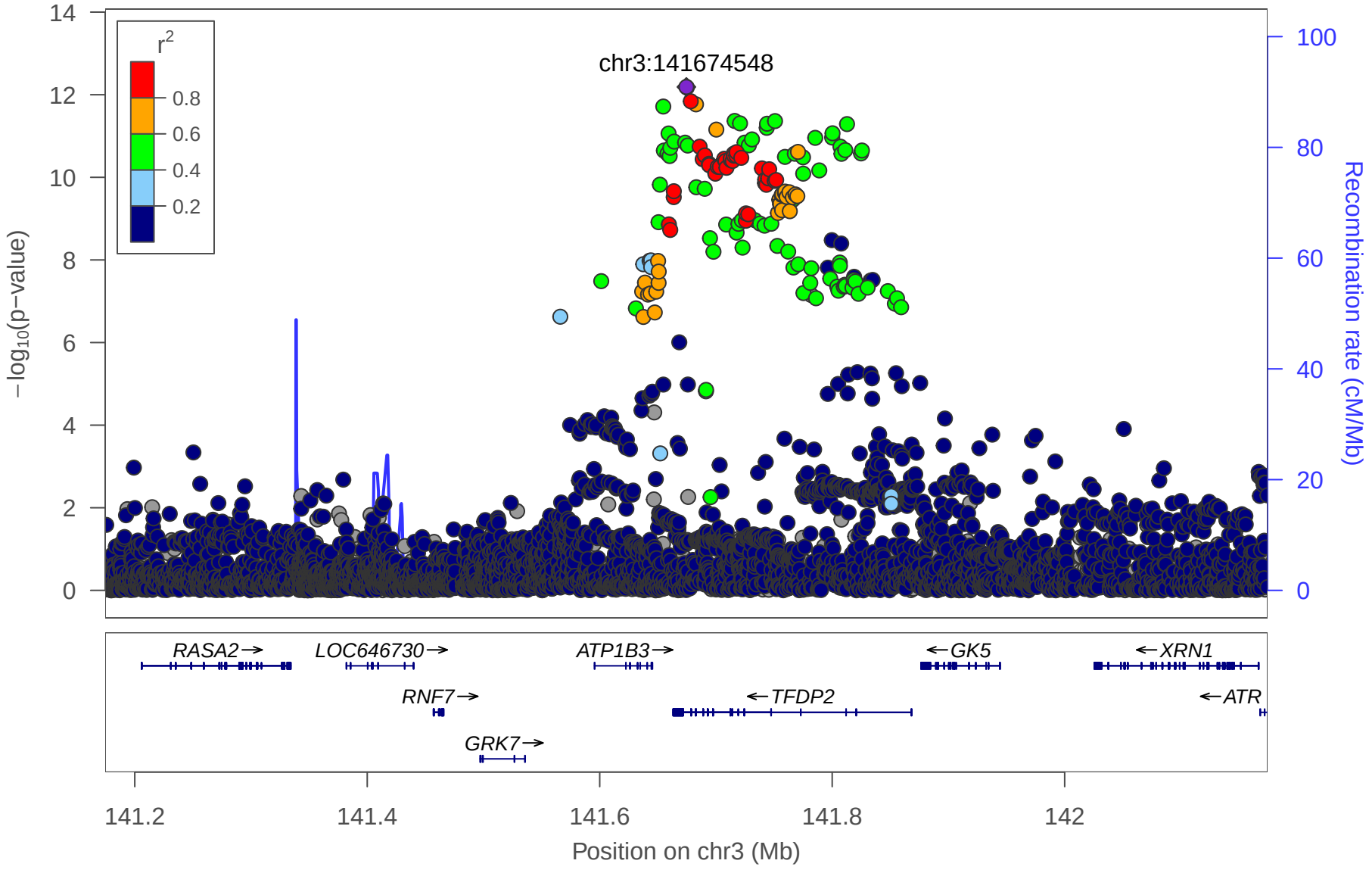

3_8:Ala
chr3:123093530
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DIRC2
PDIA5
SEC22A
HACD2
MYLK
LINC02035
MIR7110
ADCY5
MYLK−AS1
SEMA5B
MYLK−AS2
Position on chr3 (Mb)

3_9:Gly

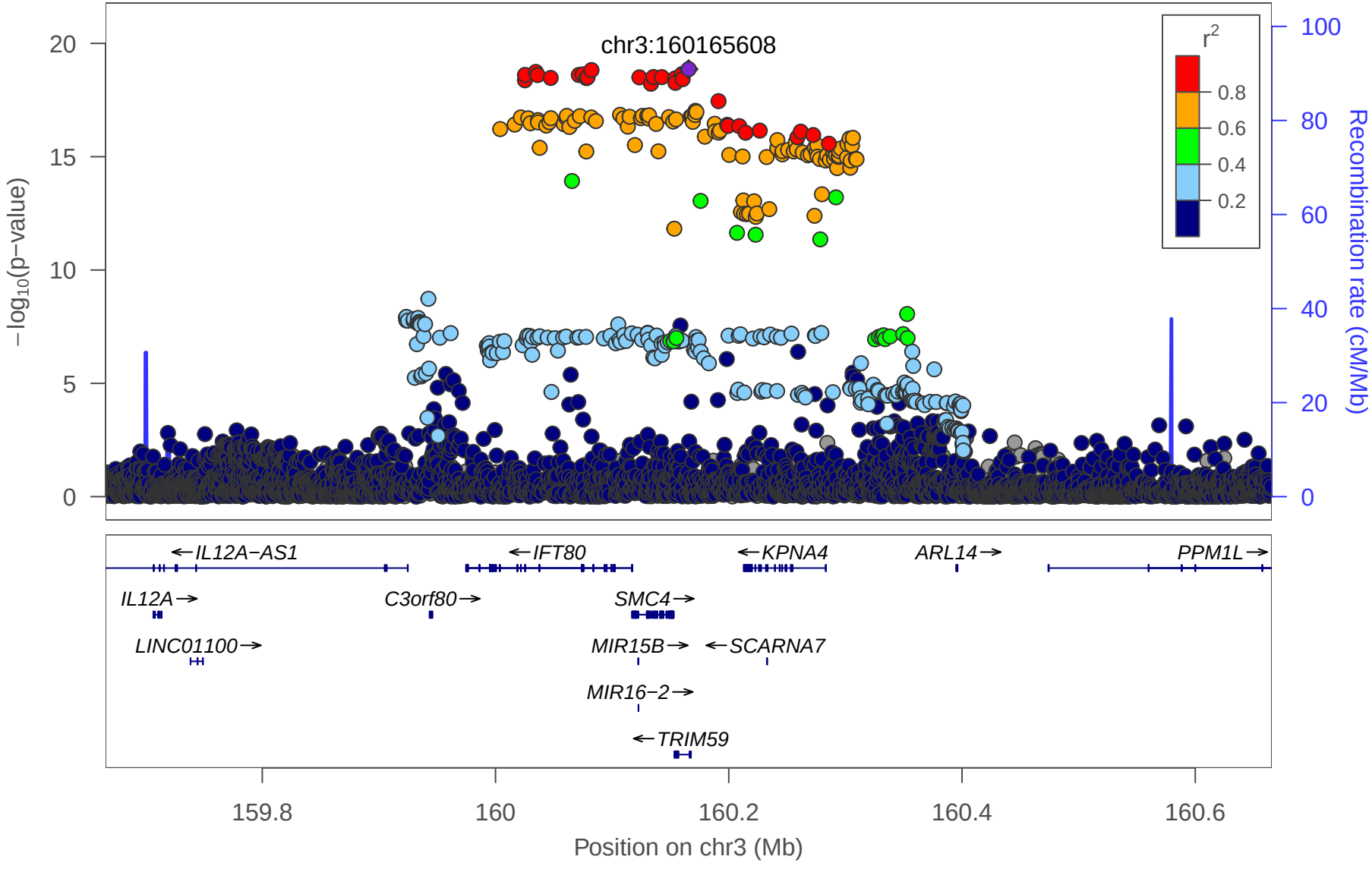

chr3:125905080
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
MIR548I1
FAM86JP
SLC41A3
ALDH1L1−AS2
KLF15
ZXDC
TXNRD3NB
LOC101927056
ALDH1L1
CCDC37−AS1
CHST13
ALG1L
ALDH1L1−AS1
CFAP100
C3orf22
ROPN1B
UROC1
TXNRD3
NUP210P1
Position on chr3 (Mb)

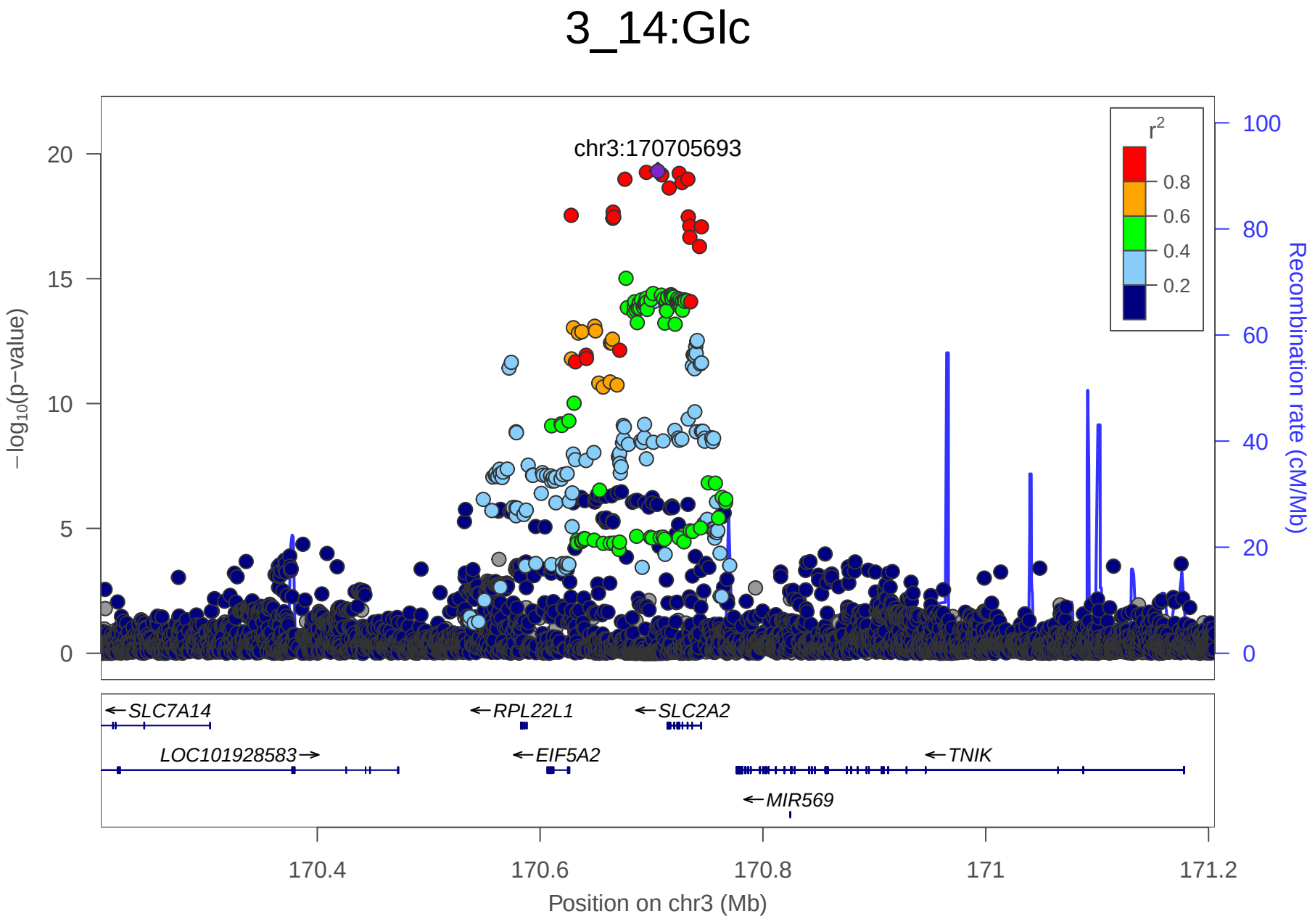

3_10:LDL−D
chr3:133482230
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
TMEM108
CDV3
TF
RAB6B
SLCO2A1
RYK
BFSP2
TOPBP1
SRPRB
C3orf36
LINC02000
BFSP2−AS1
Position on chr3 (Mb)

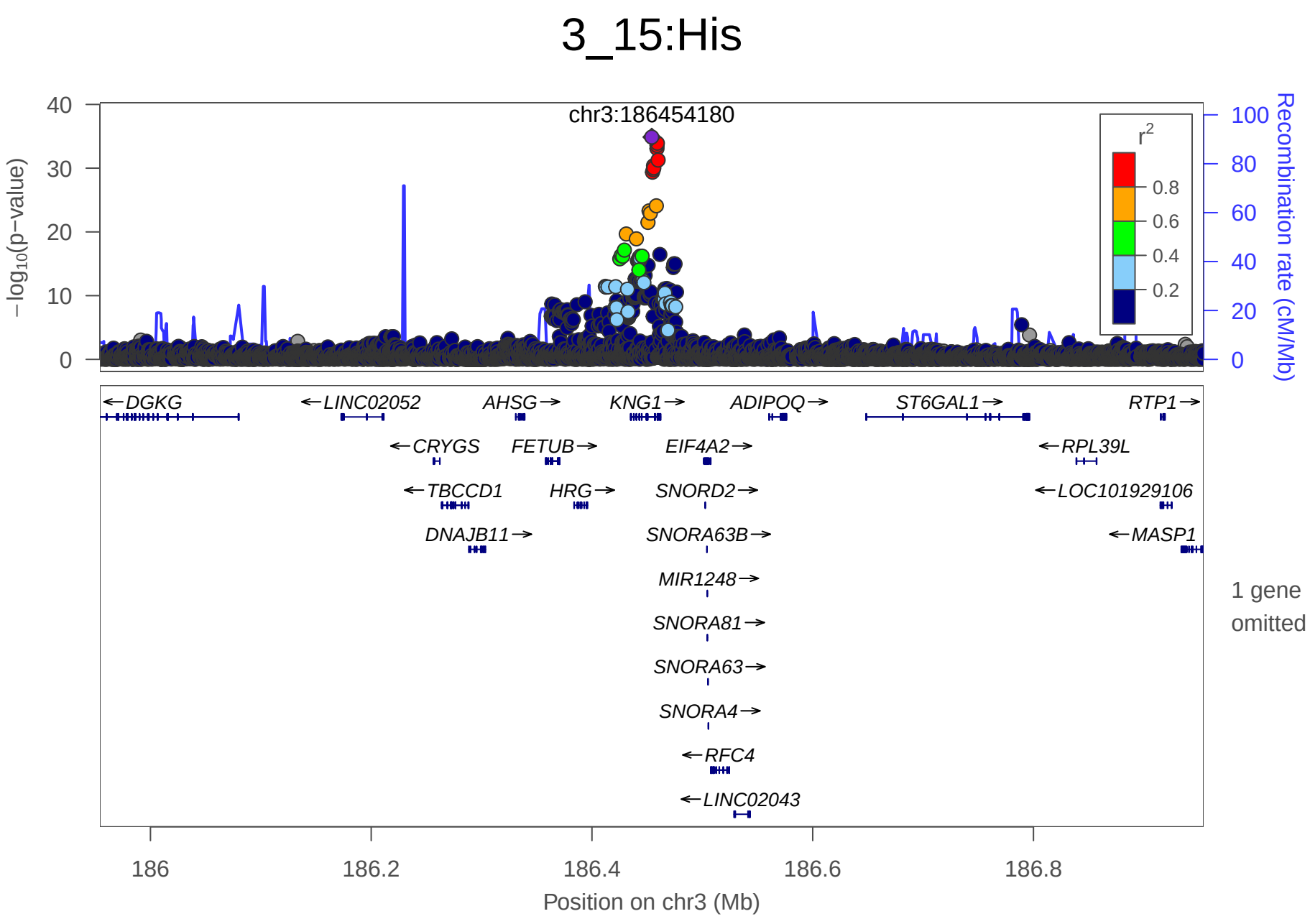

3_11:IDL−TG
chr3:135932359
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PPP2R3A
PCCB
STAG1
MSL2
Position on chr3 (Mb)

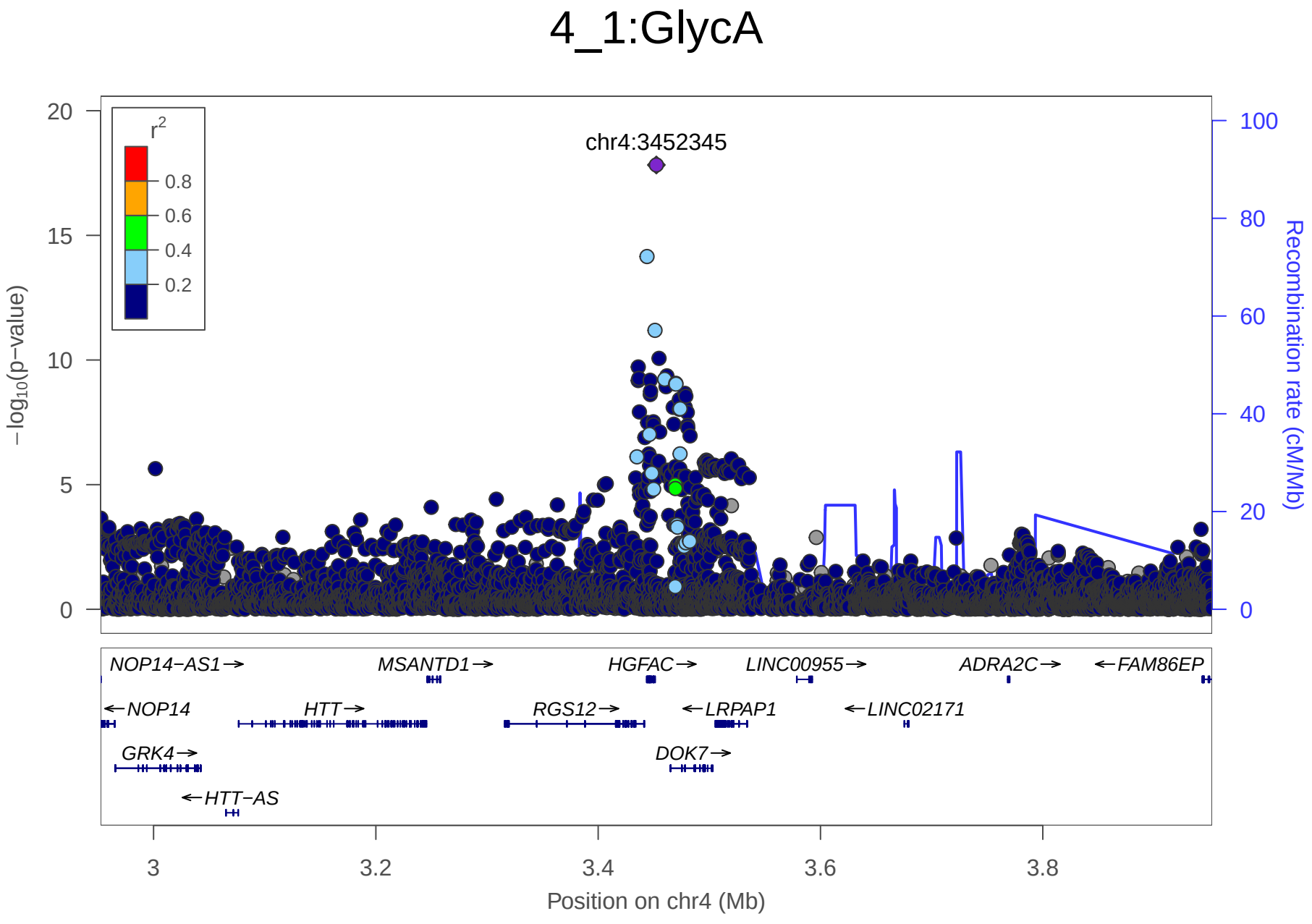

3_12:Crea
chr3:141674548
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
RASA2
LOC646730
ATP1B3
GK5
XRN1
RNF7
TFDP2
ATR
GRK7
141.2
141.4
141.6
141.8
142
Position on chr3 (Mb)

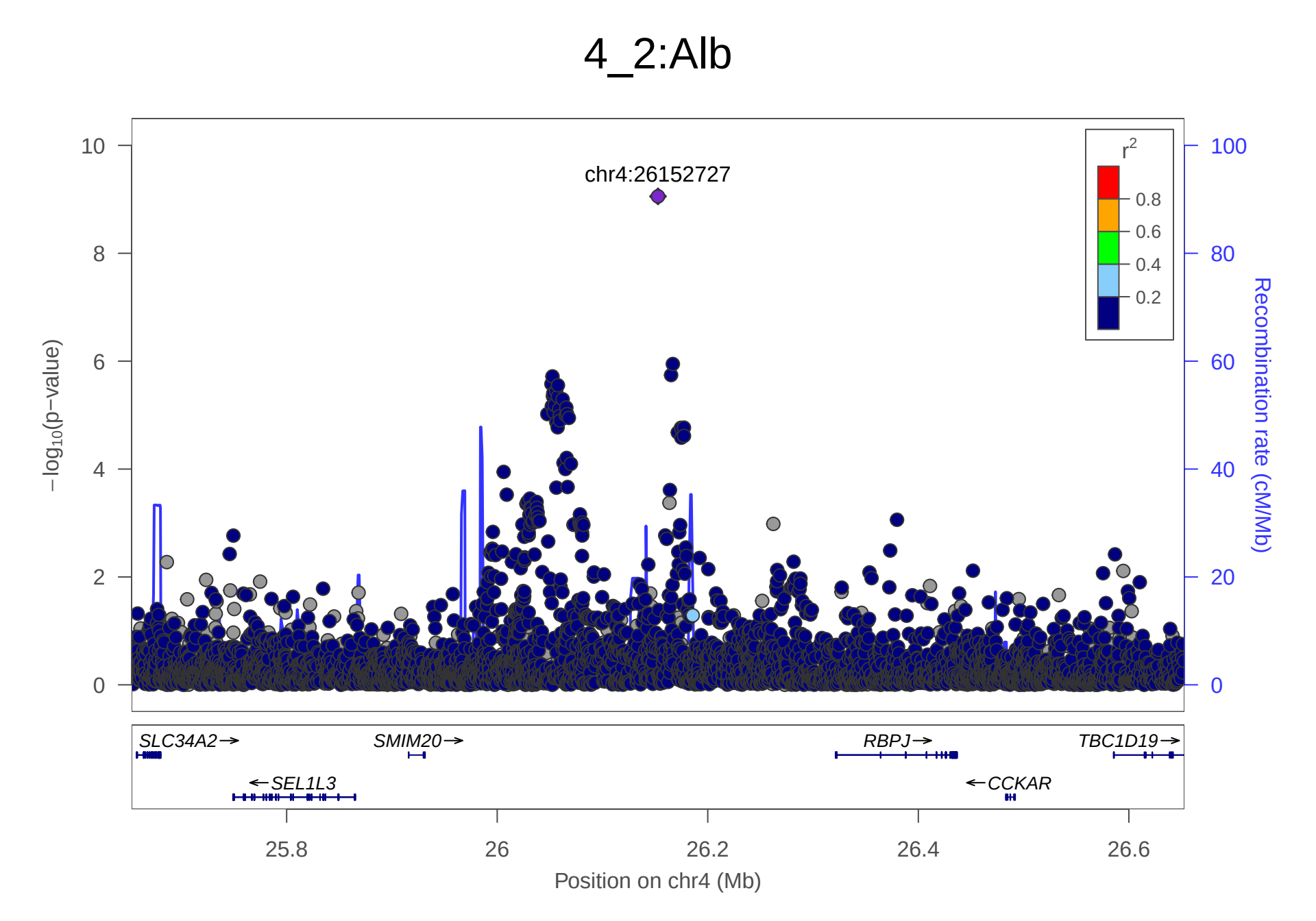
3_13:Ala

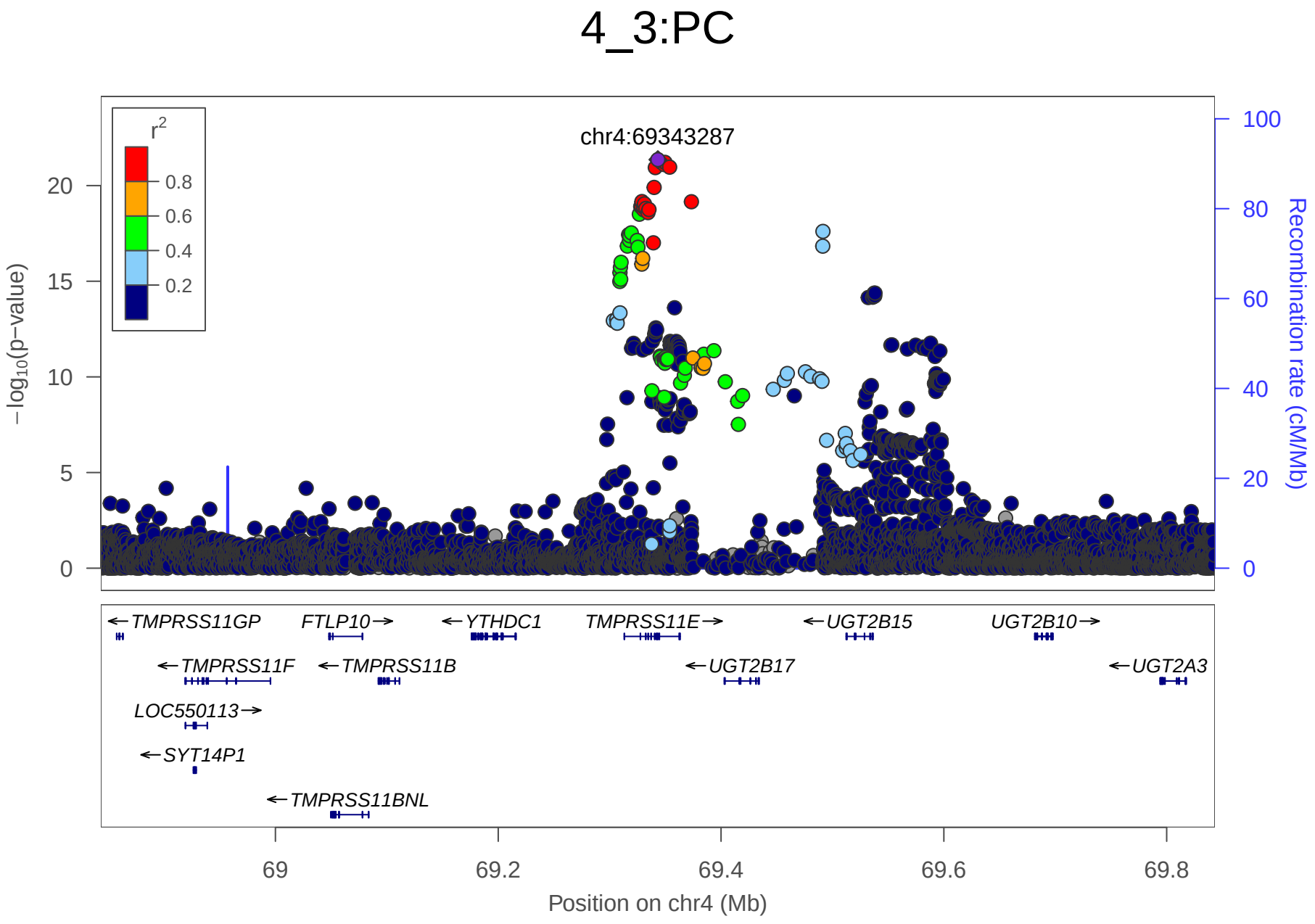

chr3:160165608
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
20
15
10
5
0
100
80
60
40
20
0
IL12A−AS1
IFT80
KPNA4
ARL14
PPM1L
IL12A
C3orf80
SMC4
LINC01100
MIR15B
SCARNA7
MIR16−2
TRIM59
159.8
160
160.2
160.4
160.6
Position on chr3 (Mb)

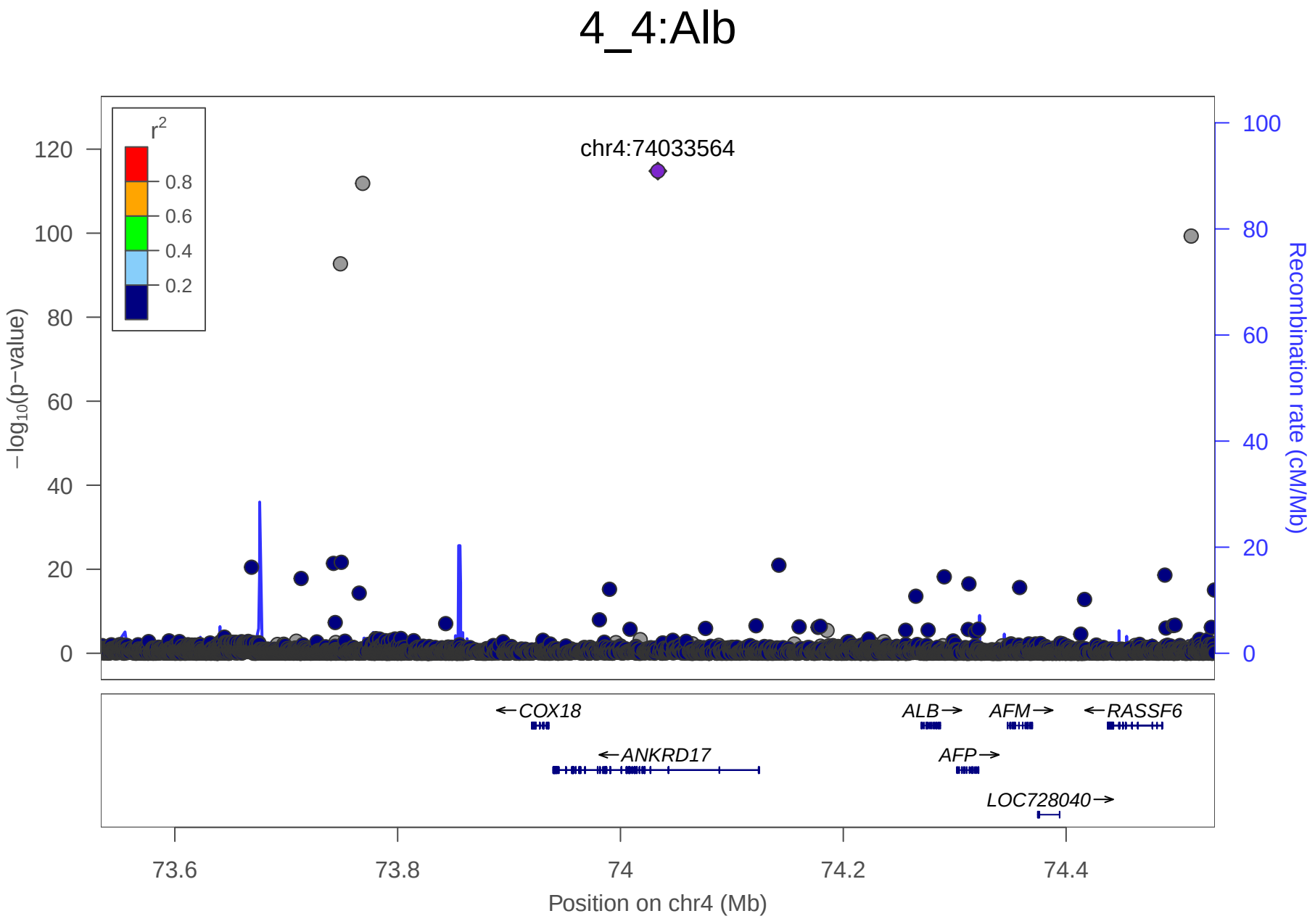

3_14:Glc
chr3:170705693
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SLC7A14
RPL22L1
SLC2A2
LOC101928583
EIF5A2
TNIK
MIR569
Position on chr3 (Mb)


3_15:His
chr3:186454180
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
40
30
20
10
0
100
80
60
40
20
0
←DGKG
←LINC02052
AHSG→
KNG1→
ADIPOQ→
ST6GAL1→
RTP1→
←CRYGS
FETUB→
EIF4A2→
←RPL39L
←TBCCD1
HRG→
SNORD2→
←LOC101929106
DNAJB11→
SNORA63B→
←MASP1
MIR1248→
SNORA81→
SNORA63→
SNORA4→
←RFC4
←LINC02043
1 gene
omitted
186
186.2
186.4
186.6
186.8
Position on chr3 (Mb)

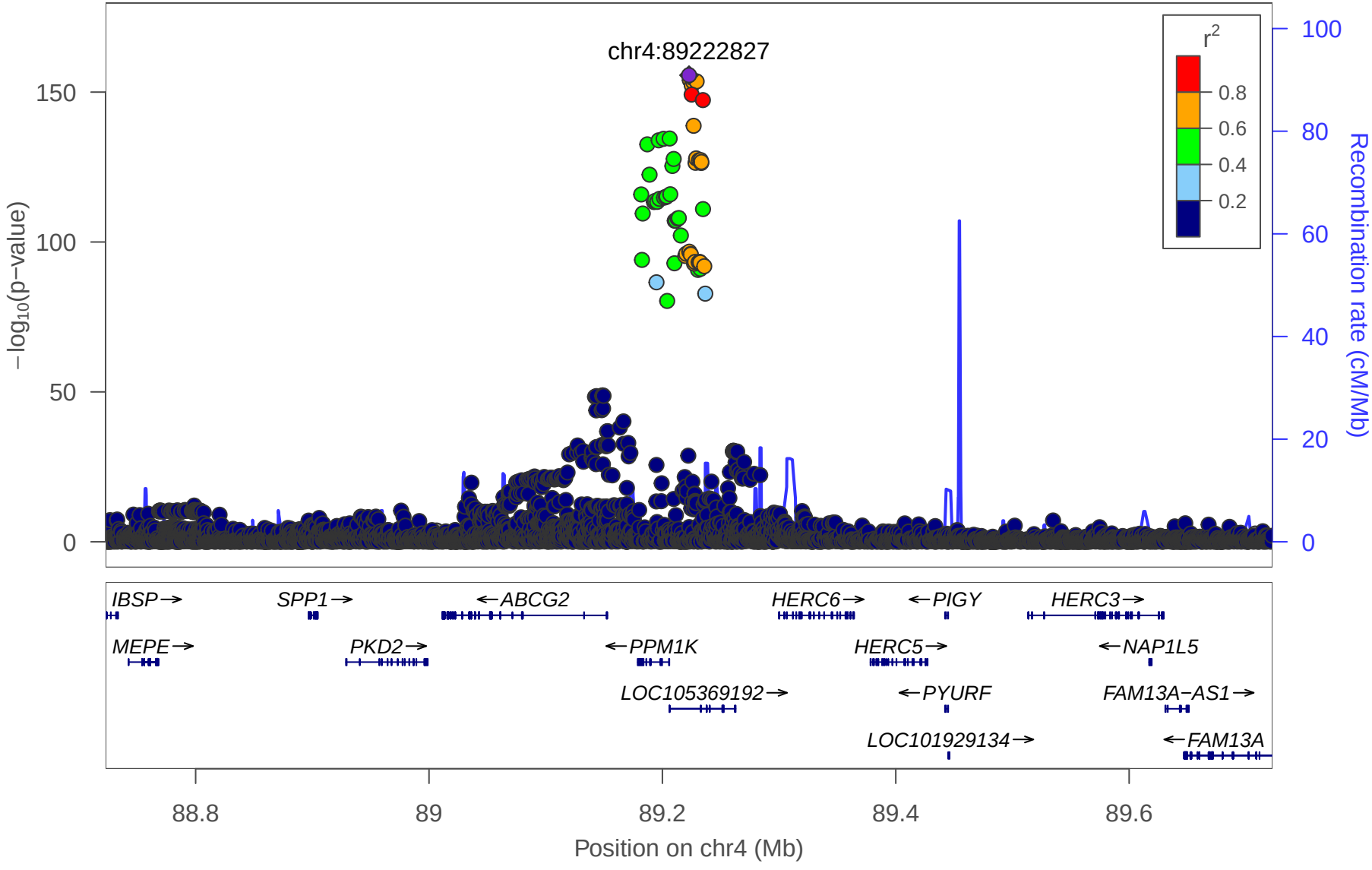

4_1:GlycA
chr4:3452345
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
NOP14−AS1→
MSANTD1→
HGFAC→
LINC00955→
ADRA2C→
←FAM86EP
←NOP14
HTT→
RGS12→
←LRPAP1
←LINC02171
GRK4→
DOK7→
←HTT−AS
Position on chr4 (Mb)

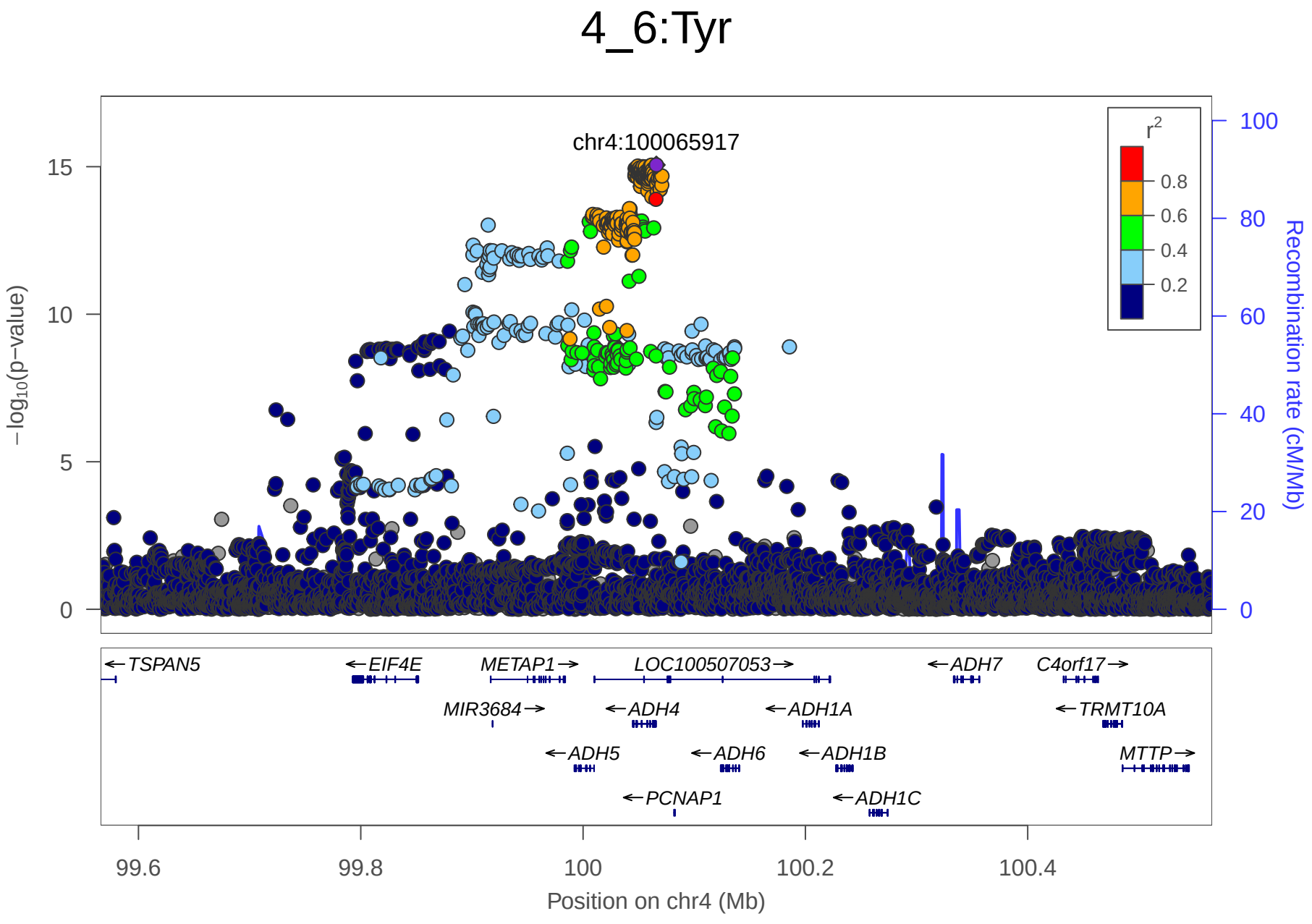

4_2:Alb
chr4:26152727
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SLC34A2
SMIM20
RBPJ
TBC1D19
SEL1L3
CCKAR
Position on chr4 (Mb)

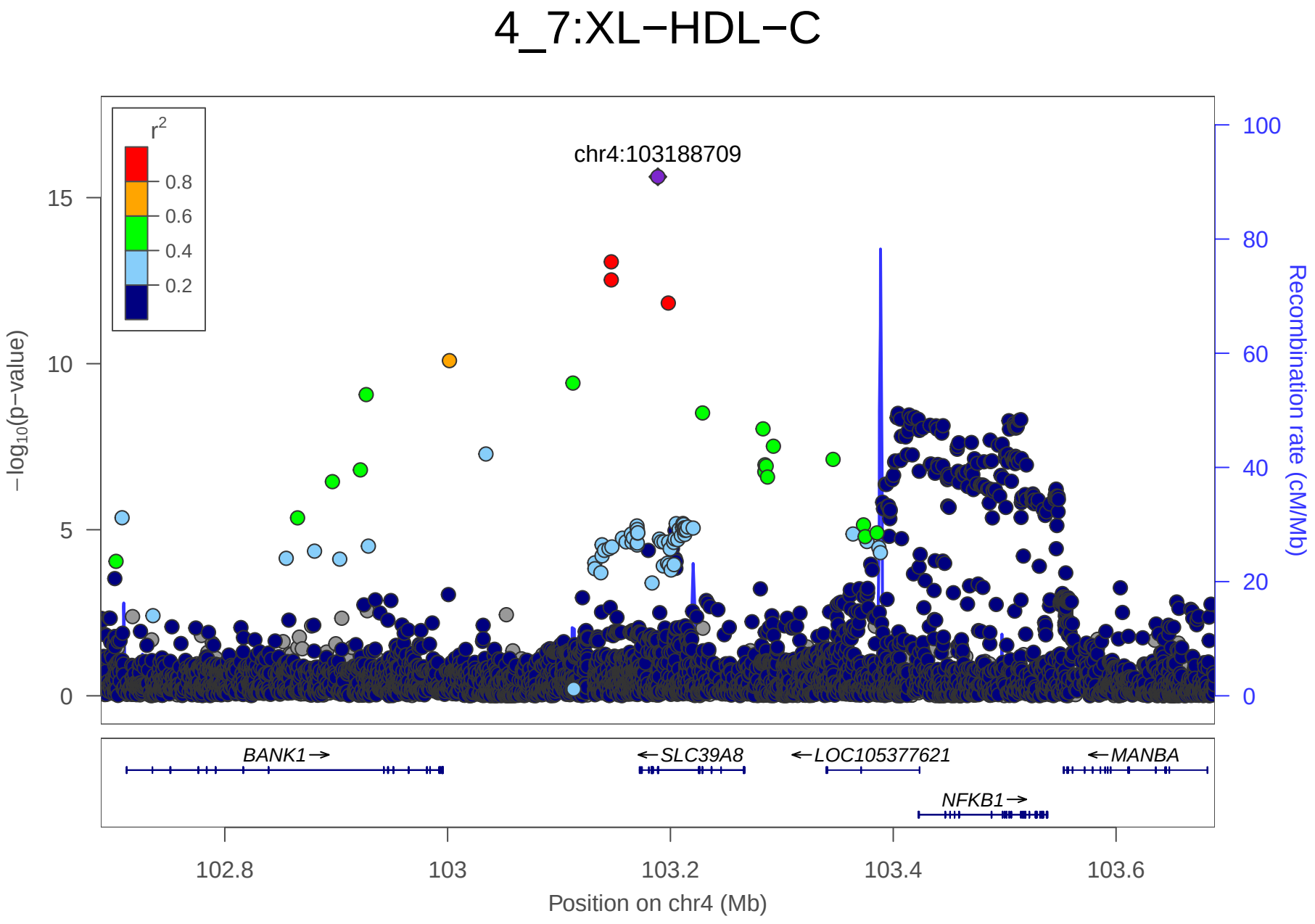

4_3:PC
chr4:69343287
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
TMPRSS11GP
FTLP10
YTHDC1
TMPRSS11E
UGT2B15
UGT2B10
TMPRSS11F
TMPRSS11B
UGT2B17
UGT2A3
LOC550113
SYT14P1
TMPRSS11BNL
Position on chr4 (Mb)

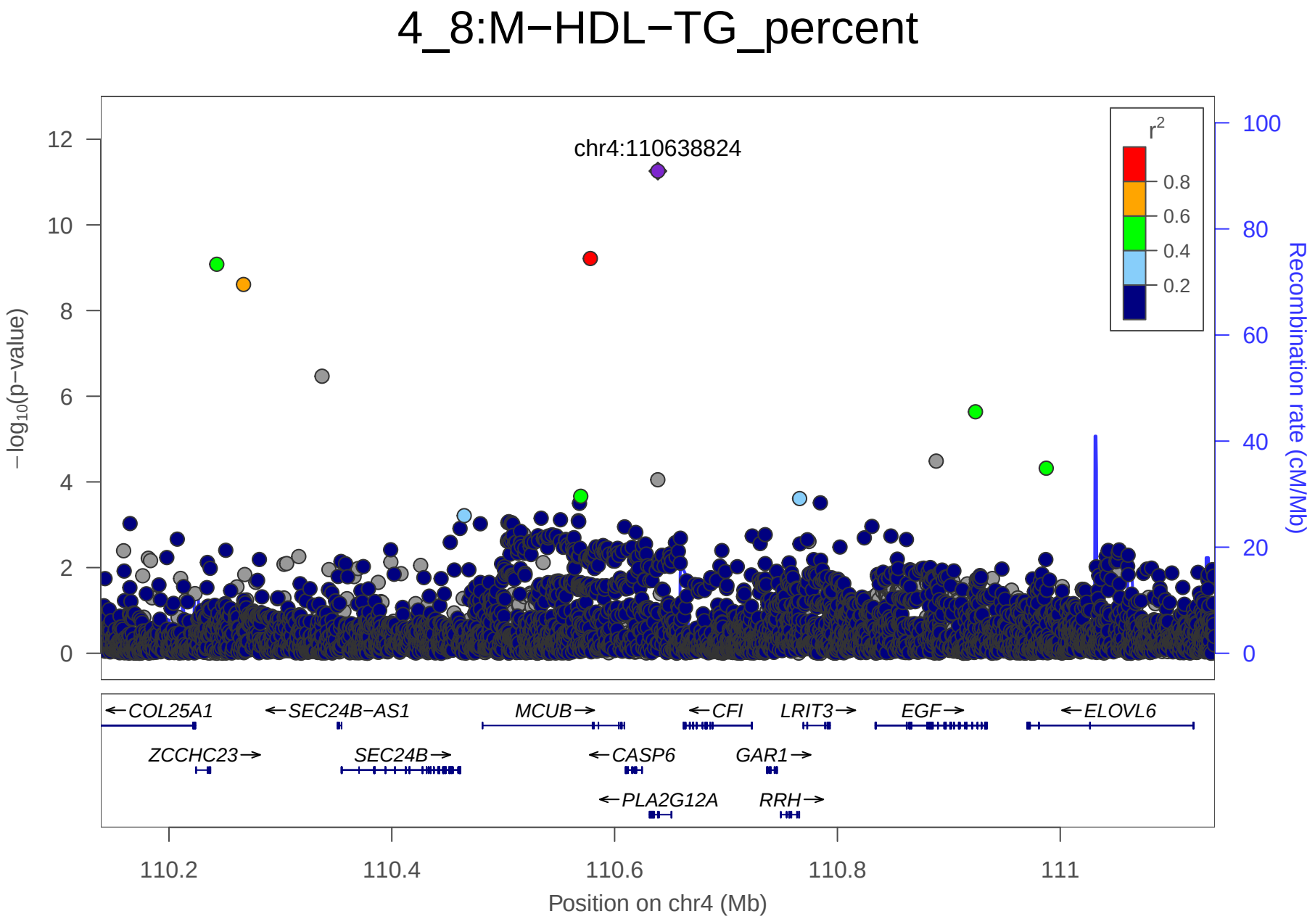

4_4:Alb
chr4:74033564
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
120
100
80
60
40
20
0
100
80
60
40
20
0
COX18
ANKRD17
ALB
AFM
RASSF6
AFP
LOC728040
73.6
73.8
74
74.2
74.4
Position on chr4 (Mb)

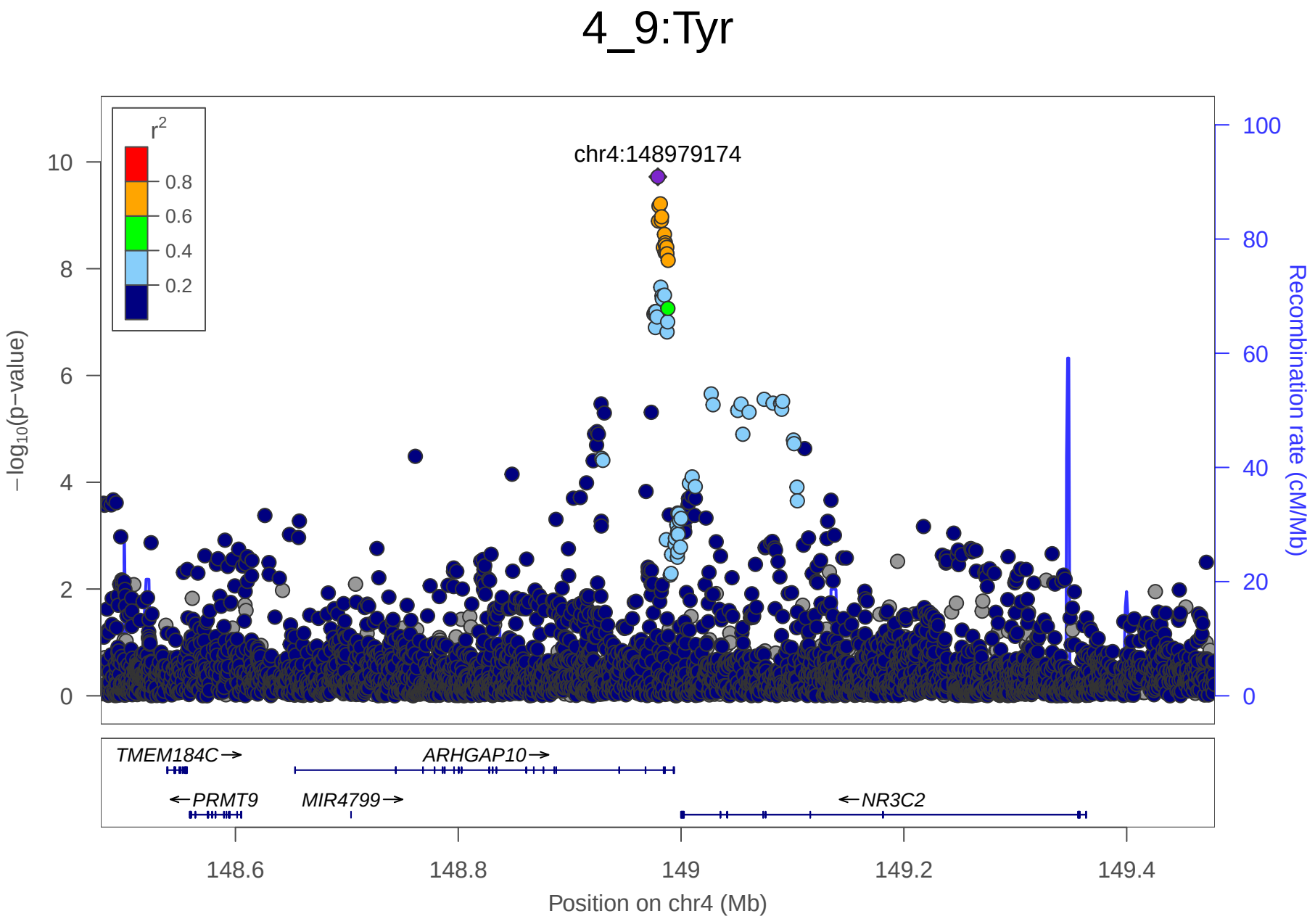
4_5:Val

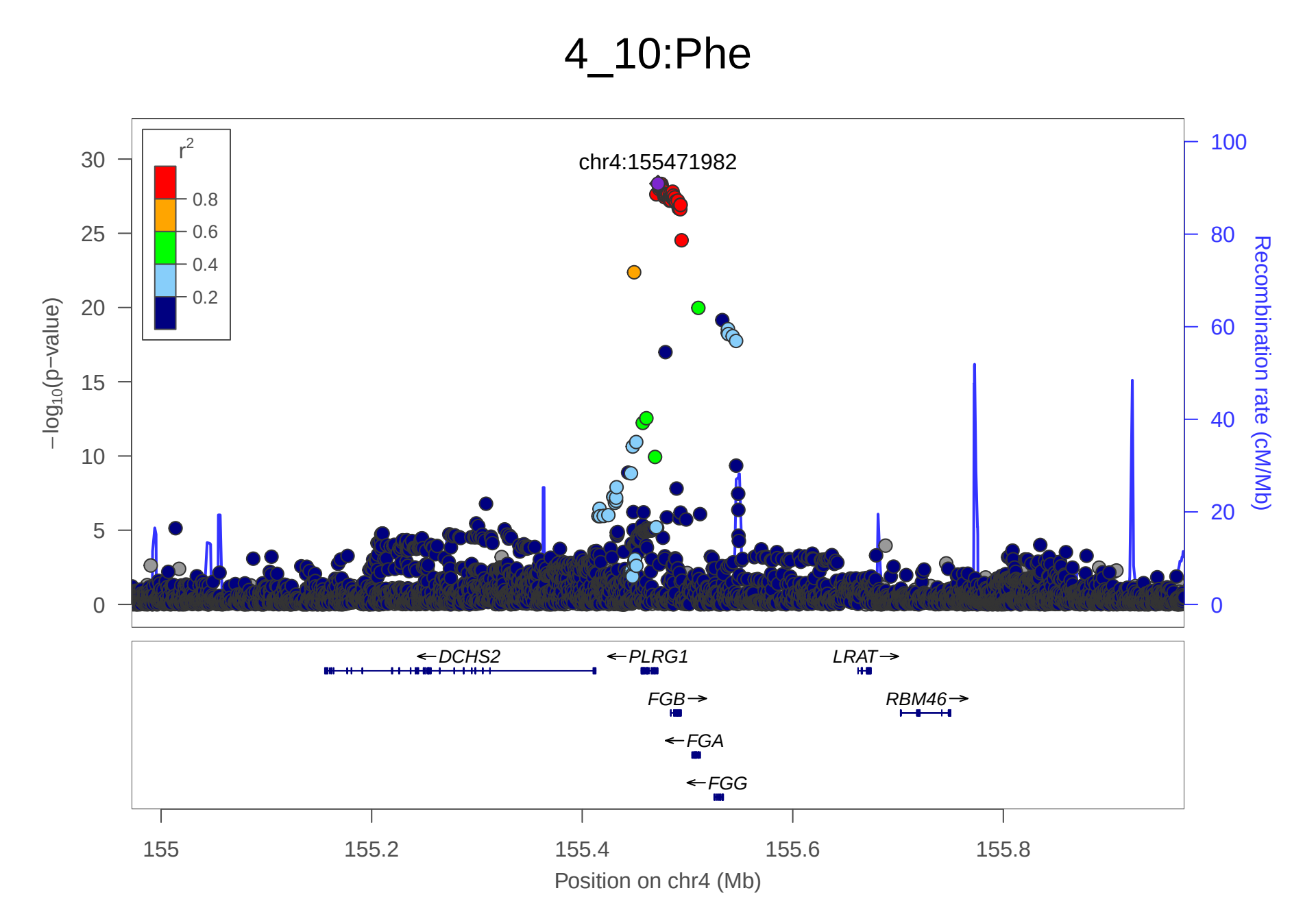

chr4:89222827
r2
0.8
0.6
0.4
0.2
150
100
50
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
IBSP→
SPP1→
←ABCG2
HERC6→
←PIGY
HERC3→
MEPE→
PKD2→
←PPM1K
HERC5→
←NAP1L5
LOC105369192→
←PYURF
FAM13A−AS1→
LOC101929134→
←FAM13A
88.8
89
89.2
89.4
89.6
Position on chr4 (Mb)

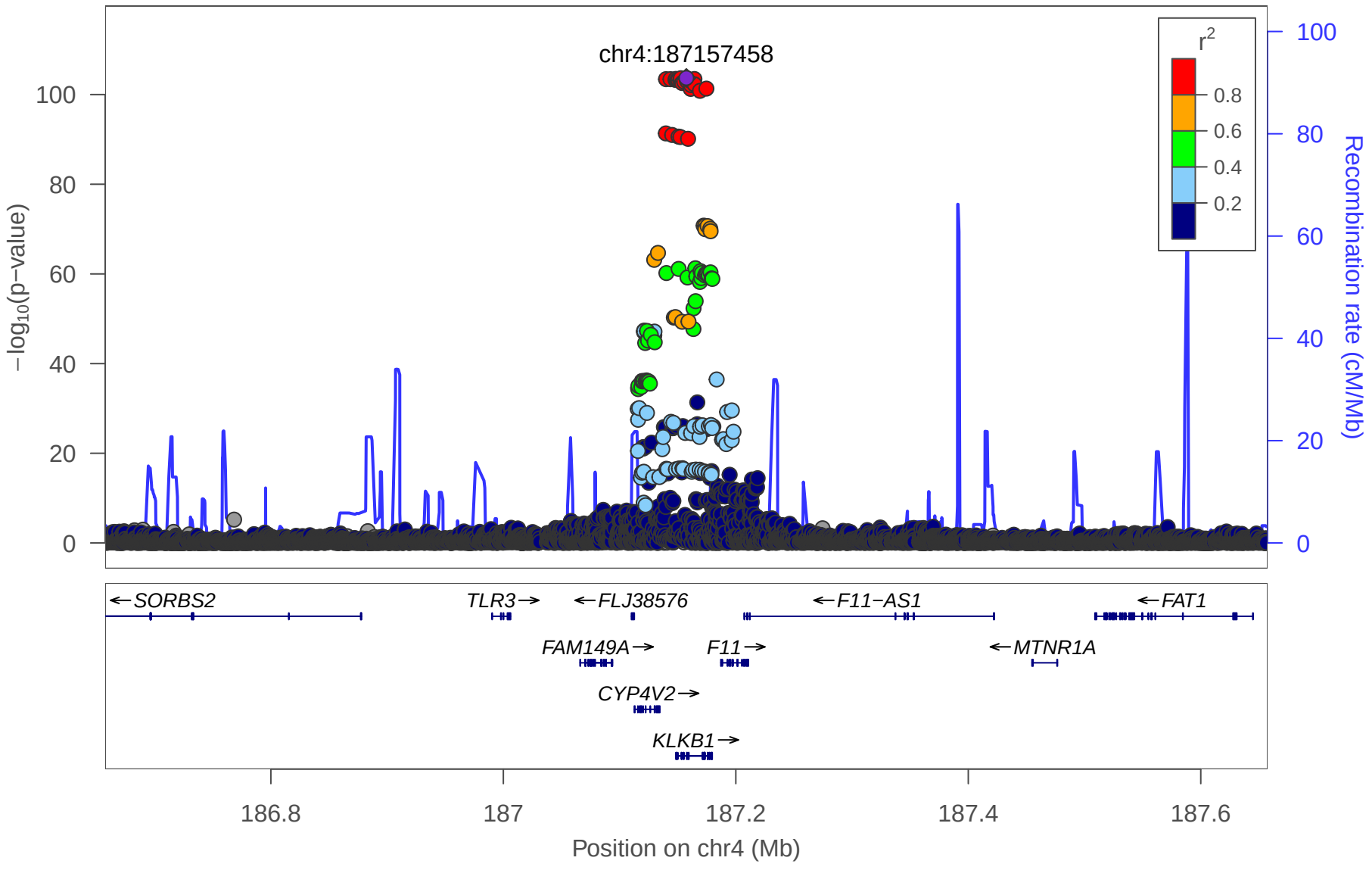

4_6:Tyr
chr4:100065917
r2
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
TSPAN5
EIF4E
METAP1
LOC100507053
ADH7
C4orf17
MIR3684
ADH4
ADH1A
TRMT10A
ADH5
ADH6
ADH1B
MTTP
PCNAP1
ADH1C
99.6
99.8
100
100.2
100.4
Position on chr4 (Mb)

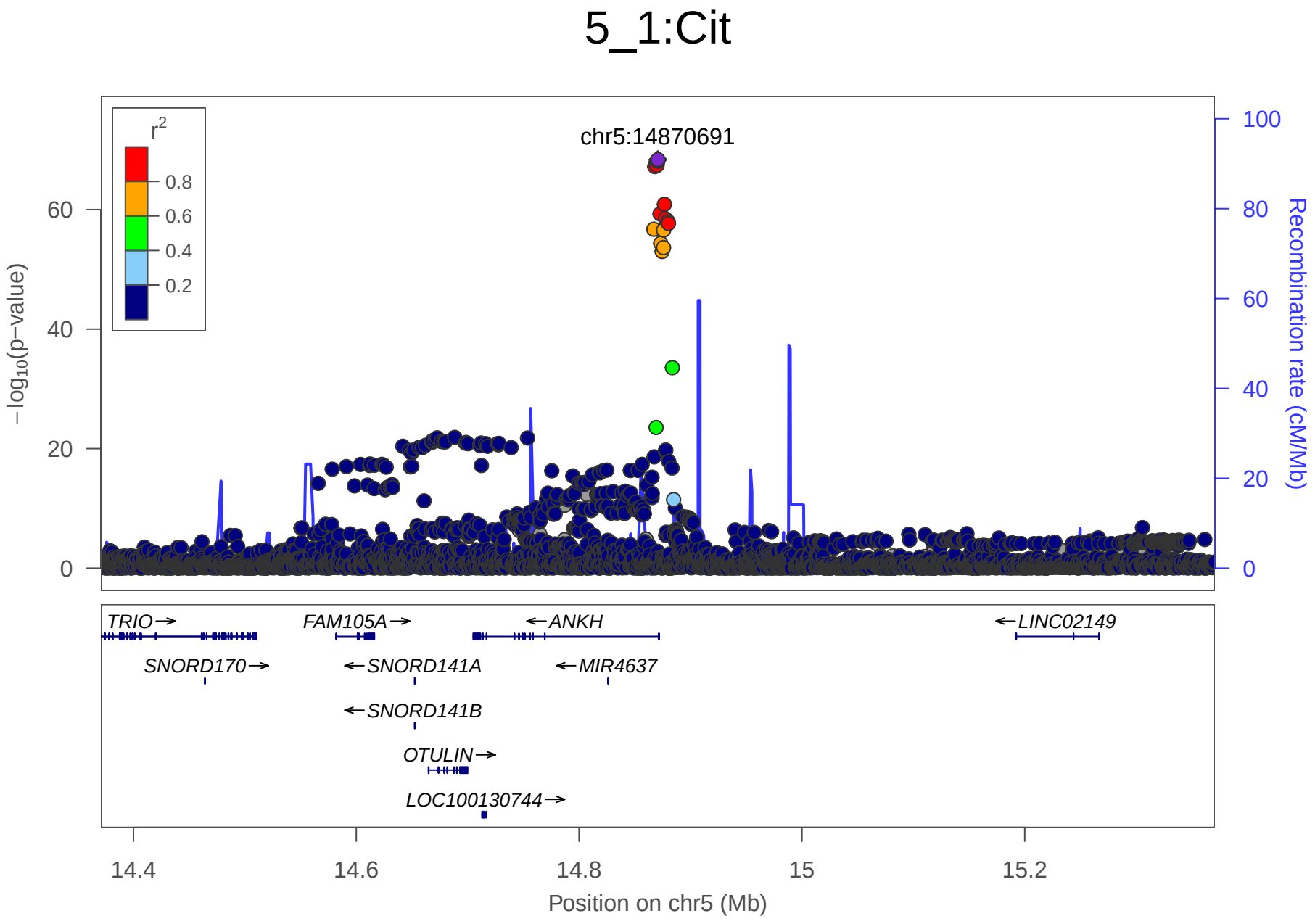

4_7:XL−HDL−C
chr4:103188709
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
BANK1
SLC39A8
LOC105377621
MANBA
NFKB1
Position on chr4 (Mb)

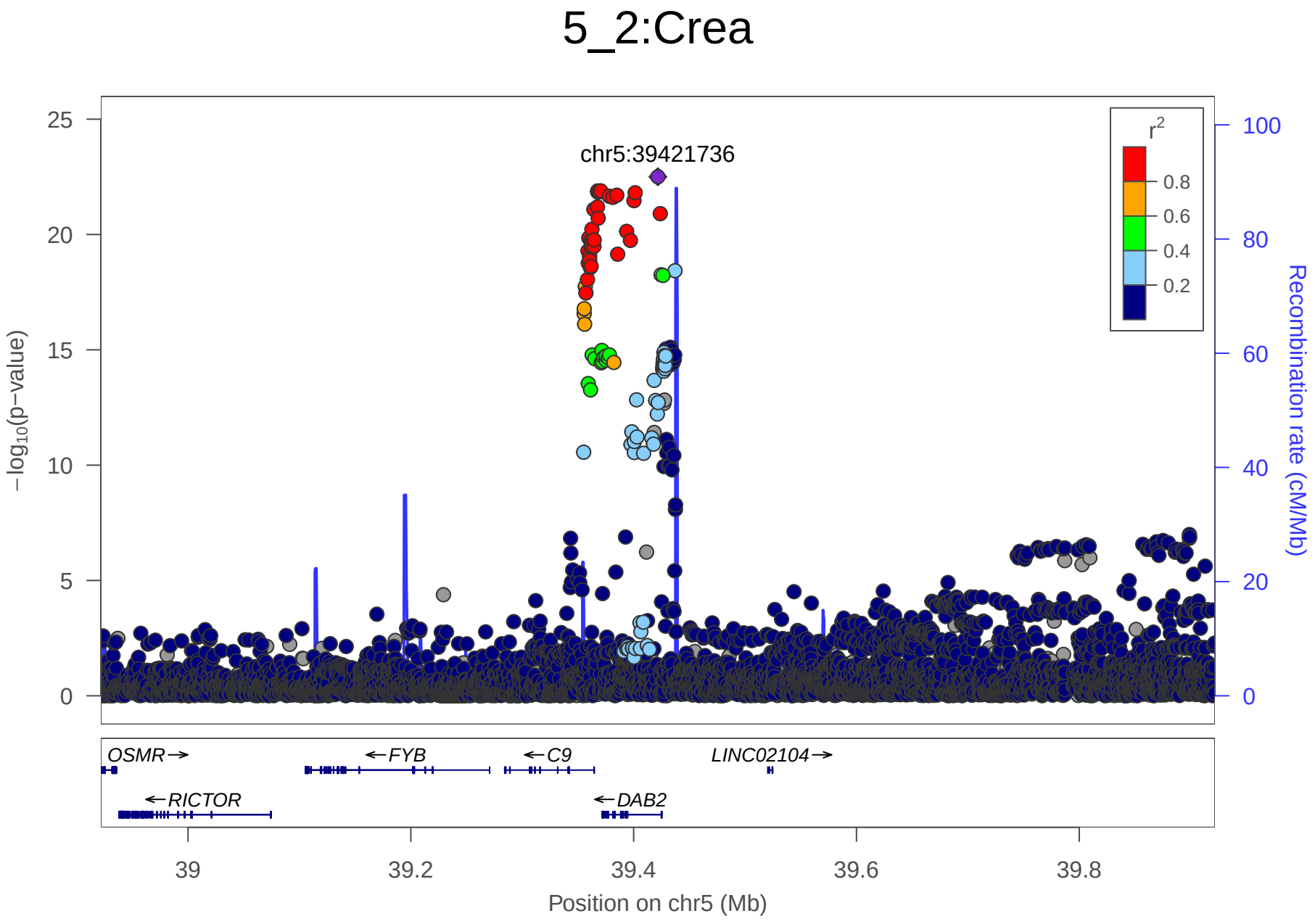

4_8:M−HDL−TG_percent
chr4:110638824
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
COL25A1
SEC24B−AS1
MCUB
CFI
LRIT3
EGF
ELOVL6
ZCCHC23
SEC24B
CASP6
GAR1
PLA2G12A
RRH
Position on chr4 (Mb)


4_9:Tyr
r2
0.8
0.6
0.4
0.2
chr4:148979174
10
8
6
4
2
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
TMEM184C
ARHGAP10
PRMT9
MIR4799
NR3C2
148.6
148.8
149
149.2
149.4
Position on chr4 (Mb)

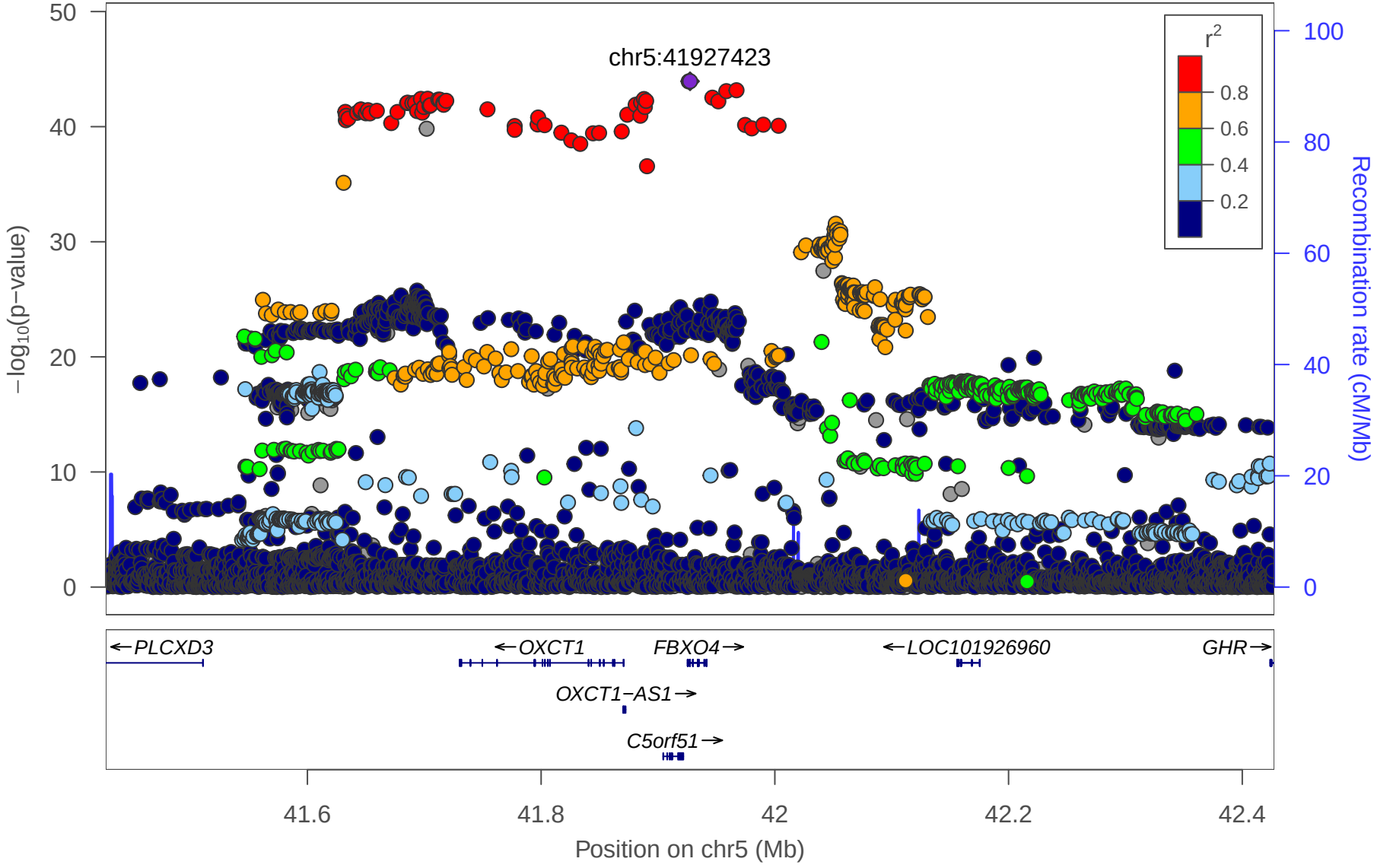

4_10:Phe
chr4:155471982
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DCHS2
PLRG1
LRAT
FGB
RBM46
FGA
FGG
Position on chr4 (Mb)

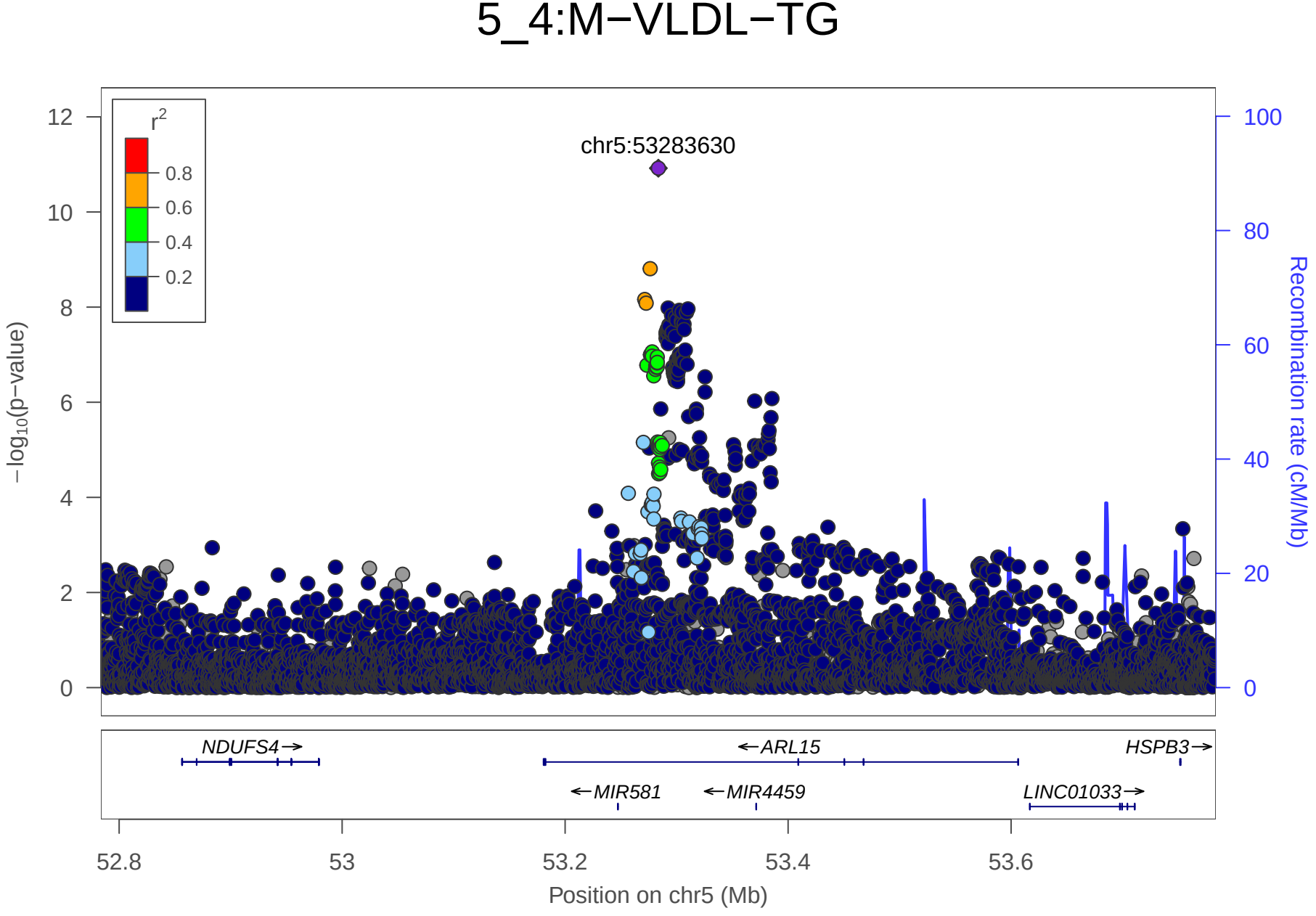

4_11:Phe
chr4:187157458
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
100
80
60
40
20
0
SORBS2
TLR3
FLJ38576
F11−AS1
FAT1
FAM149A
F11
MTNR1A
CYP4V2
KLKB1
186.8
187
187.2
187.4
187.6
Position on chr4 (Mb)

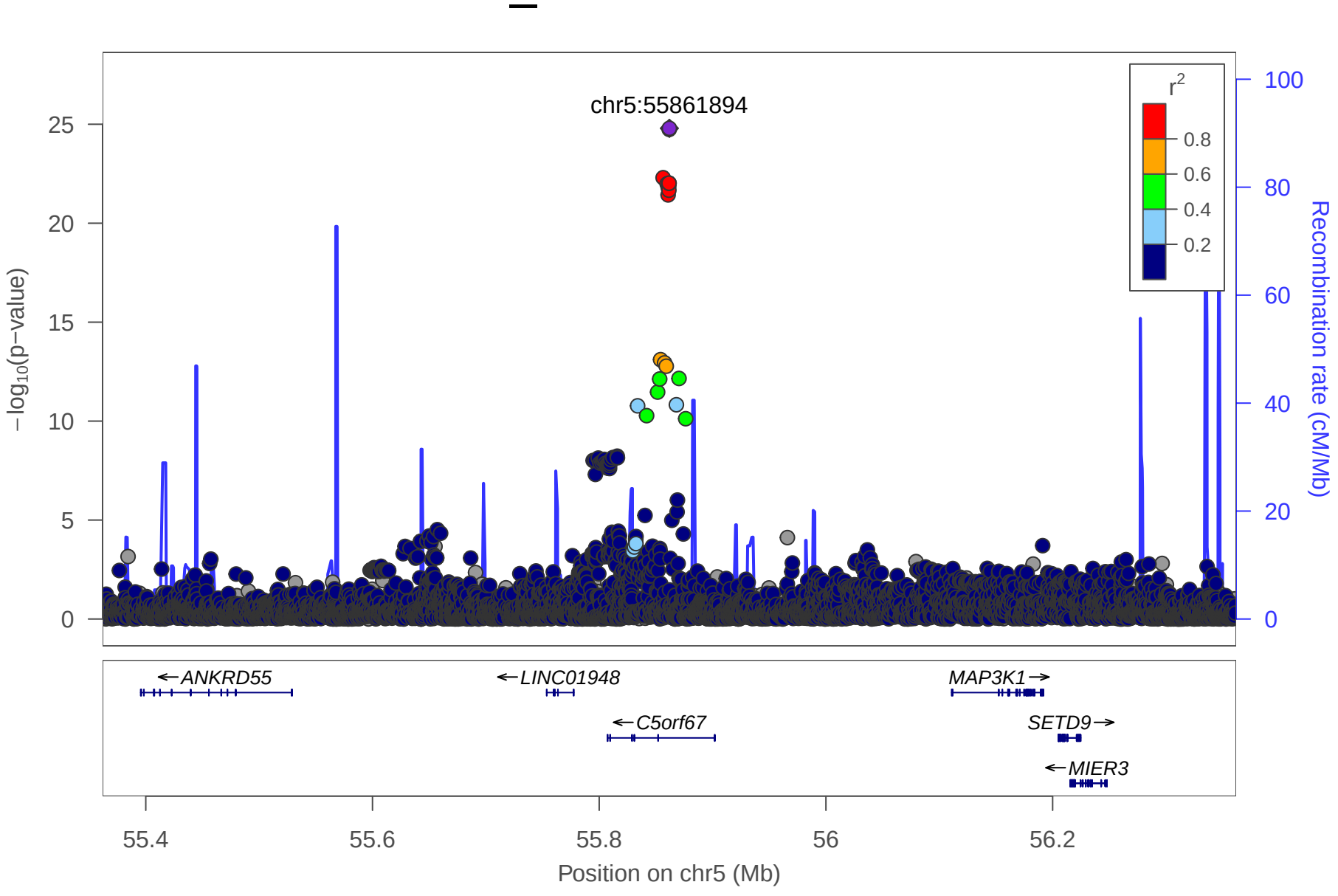

5_1:Cit
chr5:14870691
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
TRIO
FAM105A
ANKH
LINC02149
SNORD170
SNORD141A
MIR4637
SNORD141B
OTULIN
LOC100130744
Position on chr5 (Mb)

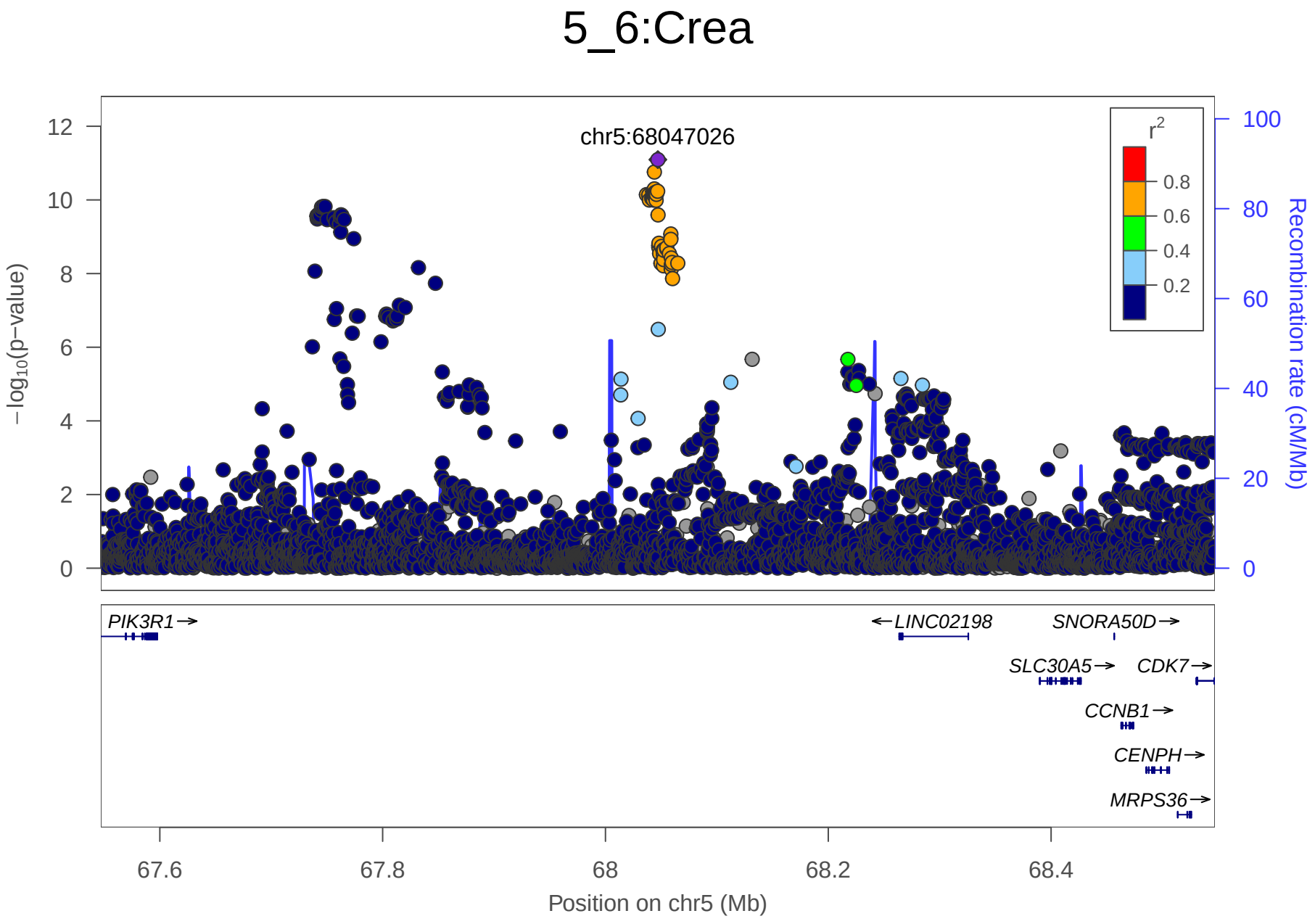

5_2:Crea
chr5:39421736
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
25
20
15
10
5
0
100
80
60
40
20
0
OSMR
FYB
C9
LINC02104
RICTOR
DAB2
39
39.2
39.4
39.6
39.8
Position on chr5 (Mb)

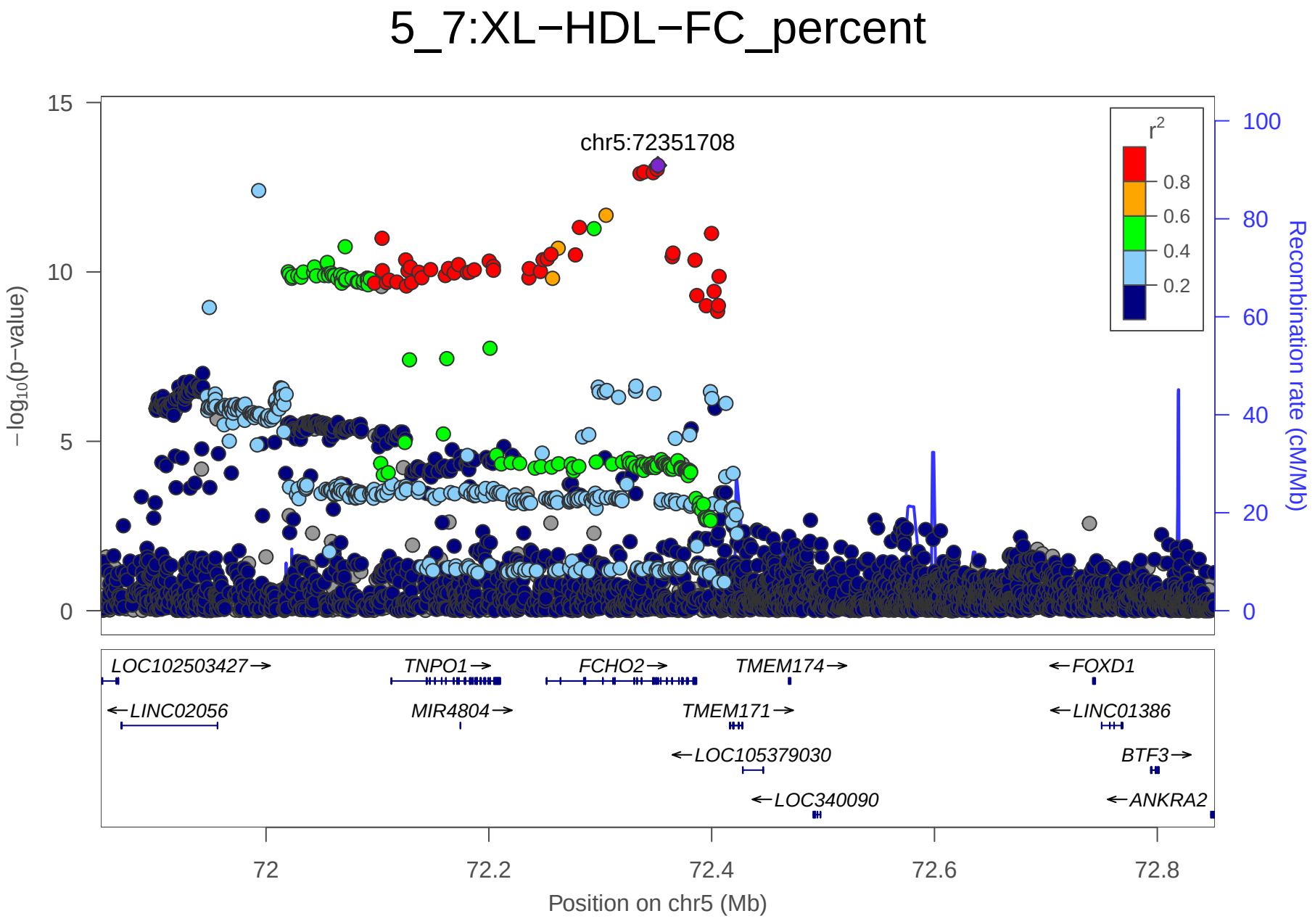
5_3:Acetone

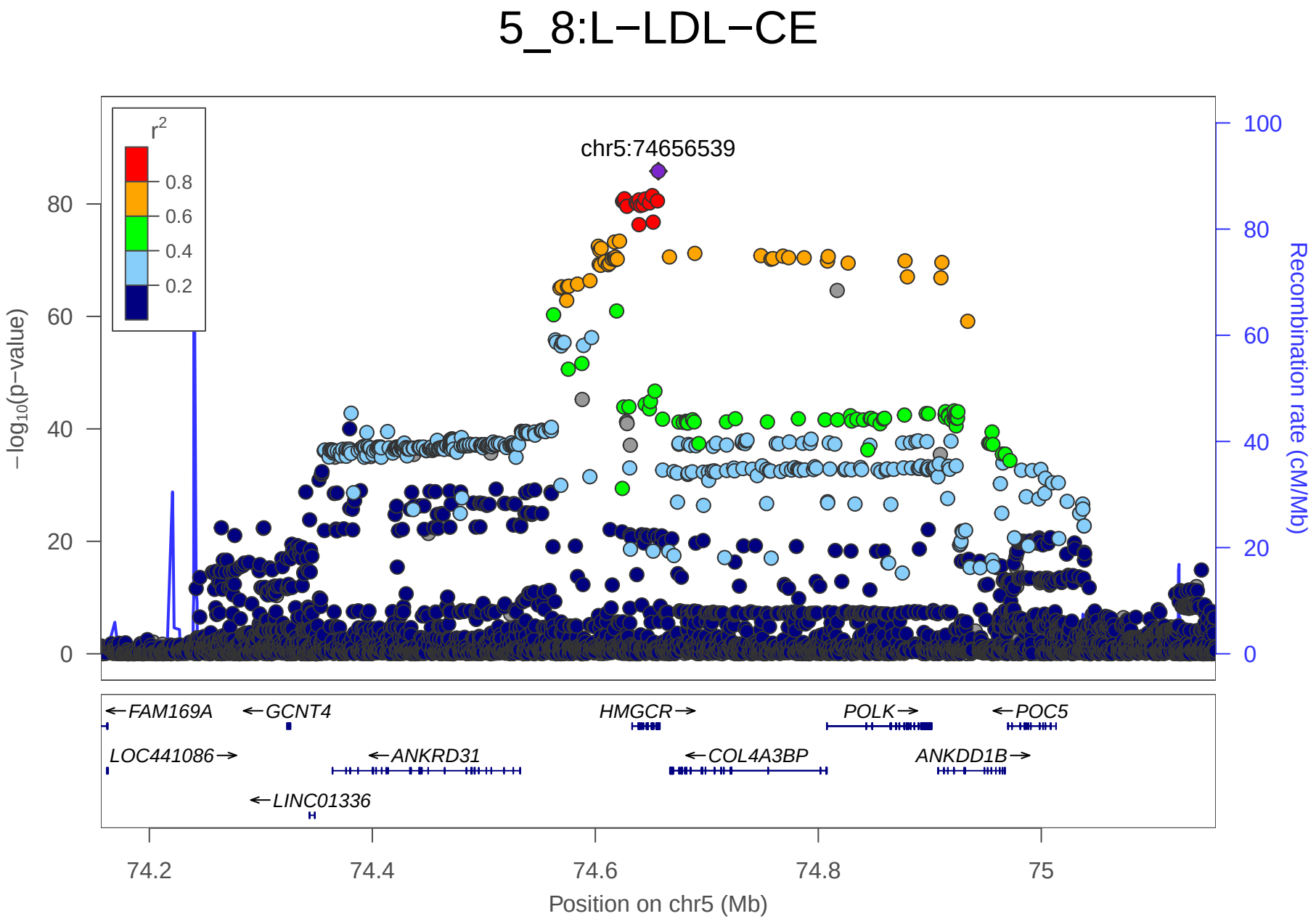

chr5:41927423
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
50
40
30
20
10
0
100
80
60
40
20
0
←PLCXD3
←OXCT1
FBXO4→
←LOC101926960
GHR→
OXCT1−AS1→
C5orf51→
41.6
41.8
42
42.2
42.4
Position on chr5 (Mb)

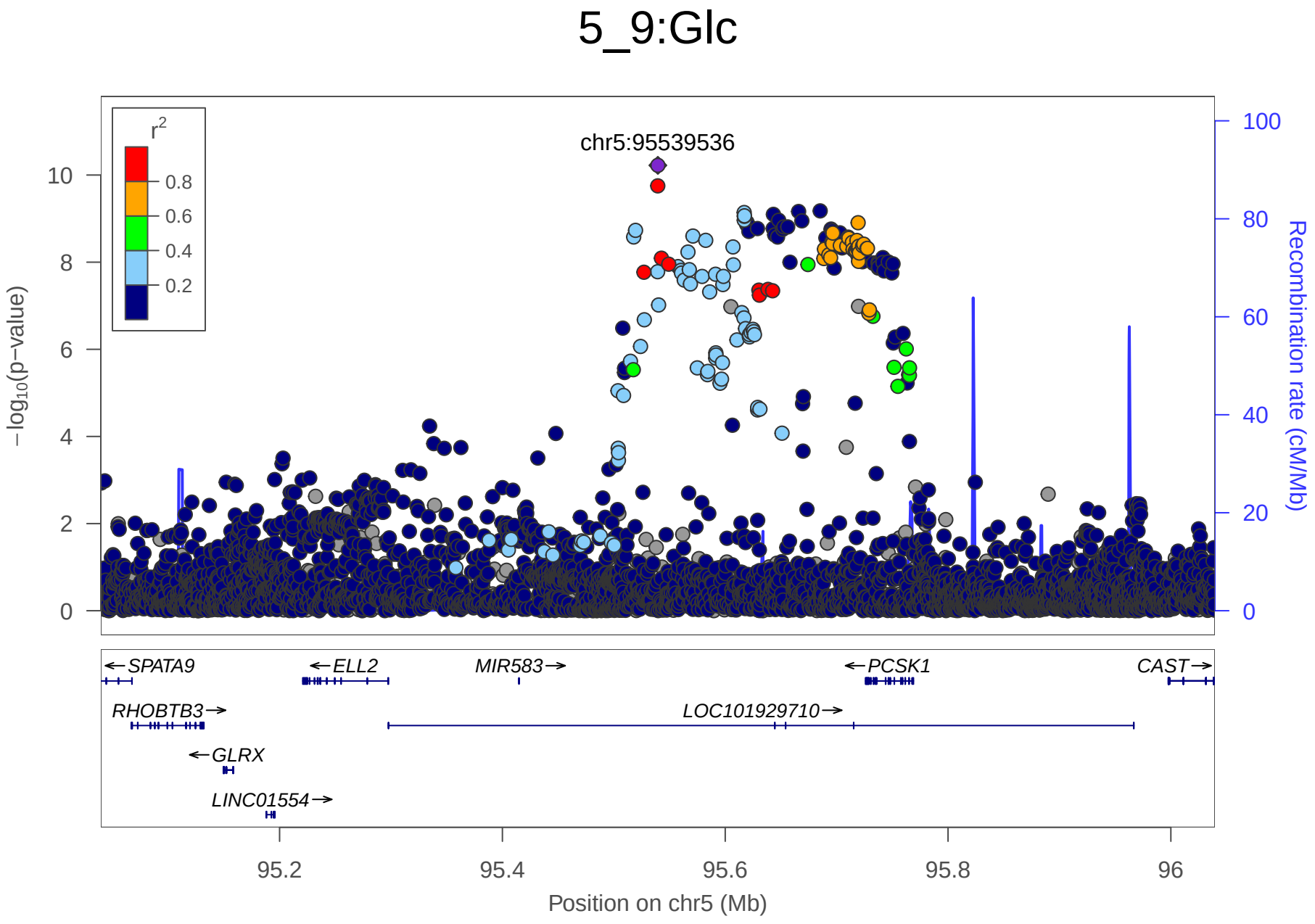

5_4:M−VLDL−TG
chr5:53283630
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
NDUFS4
ARL15
HSPB3
MIR581
MIR4459
LINC01033
Position on chr5 (Mb)

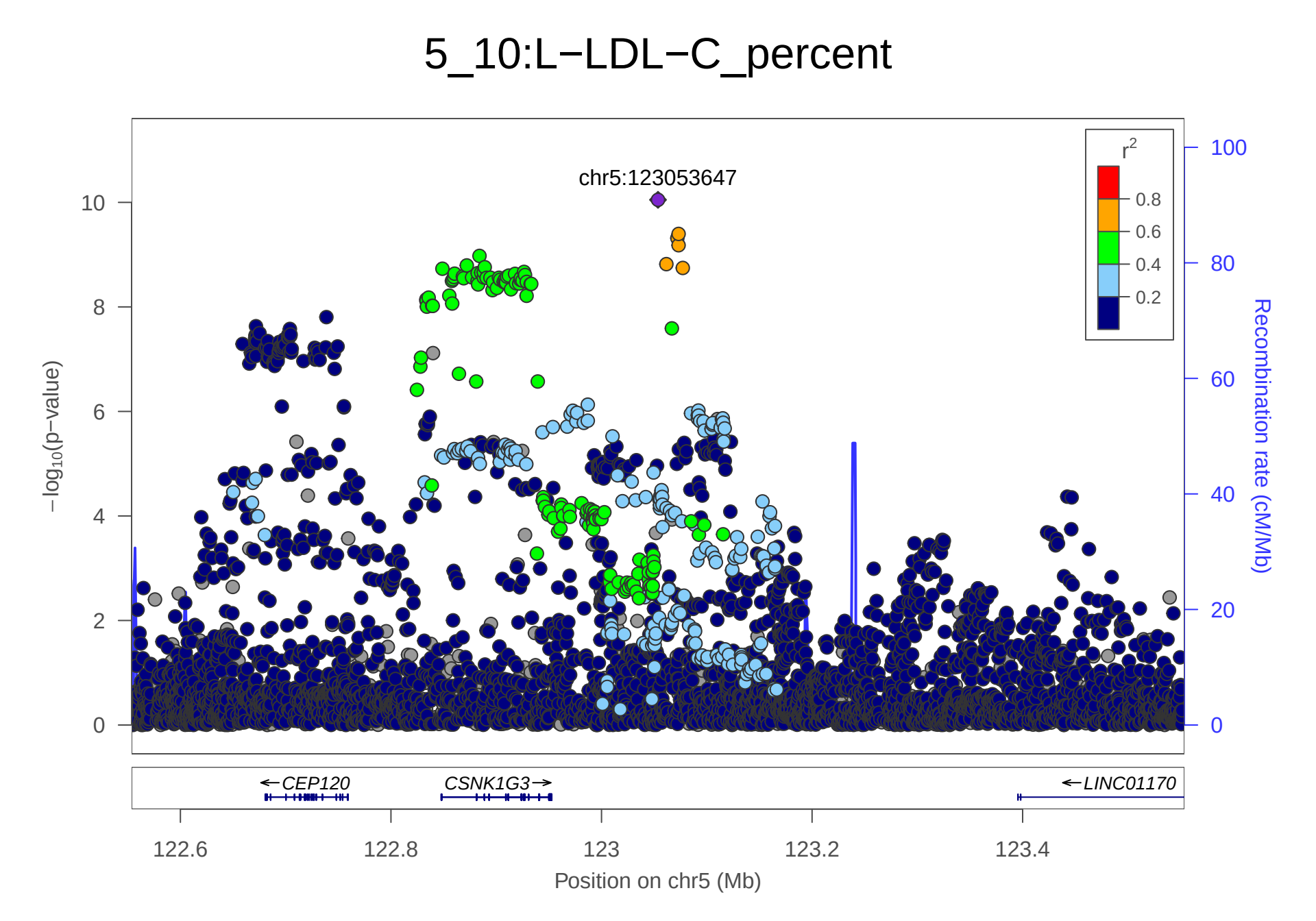

5_5:M−VLDL−TG
chr5:55861894
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
25
20
15
10
5
0
100
80
60
40
20
0
←ANKRD55
←LINC01948
MAP3K1→
←C5orf67
SETD9→
←MIER3
55.4
55.6
55.8
56
56.2
Position on chr5 (Mb)

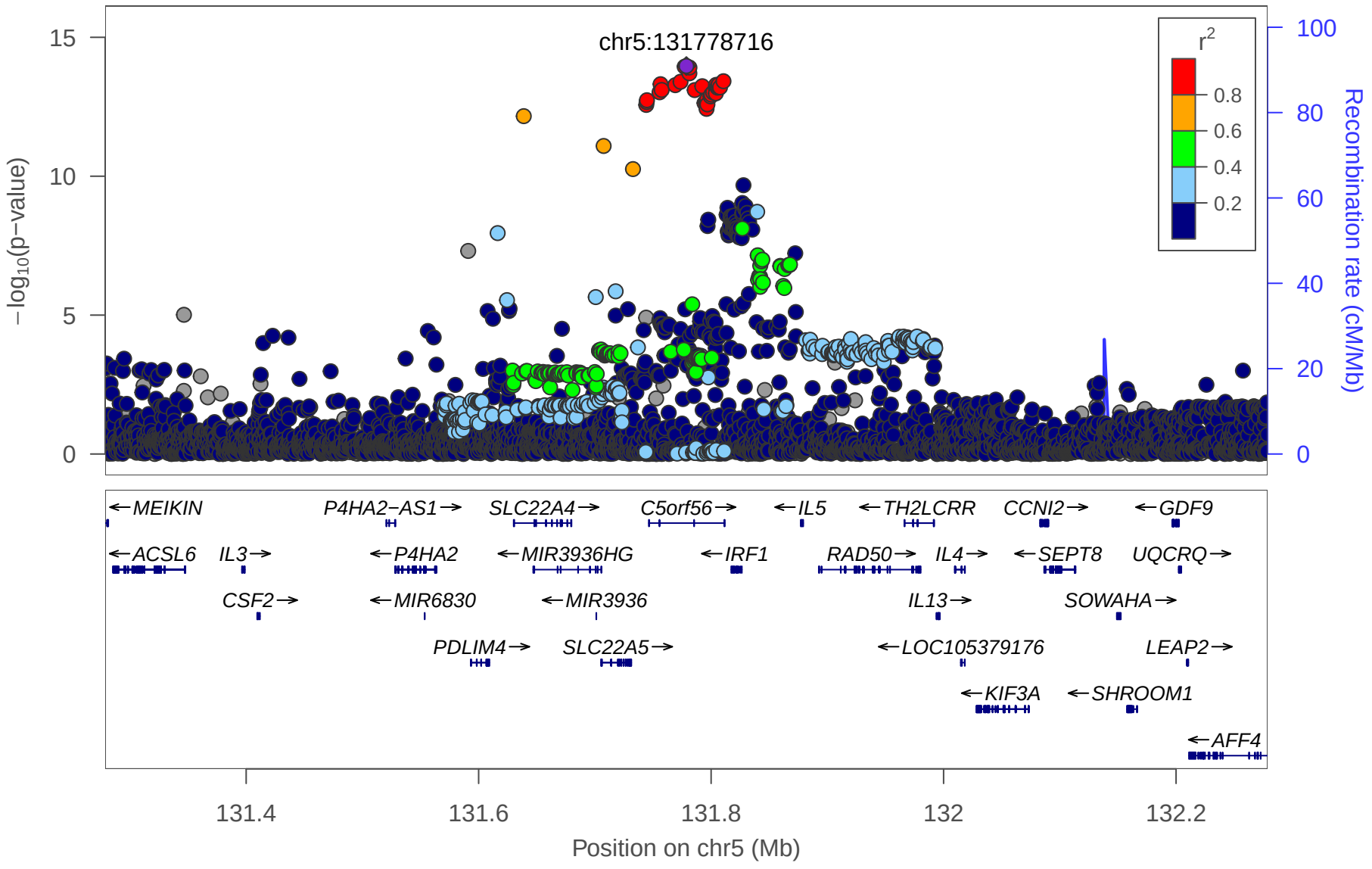

5_6:Crea
chr5:68047026
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PIK3R1
LINC02198
SNORA50D
SLC30A5
CDK7
CCNB1
CENPH
MRPS36
Position on chr5 (Mb)

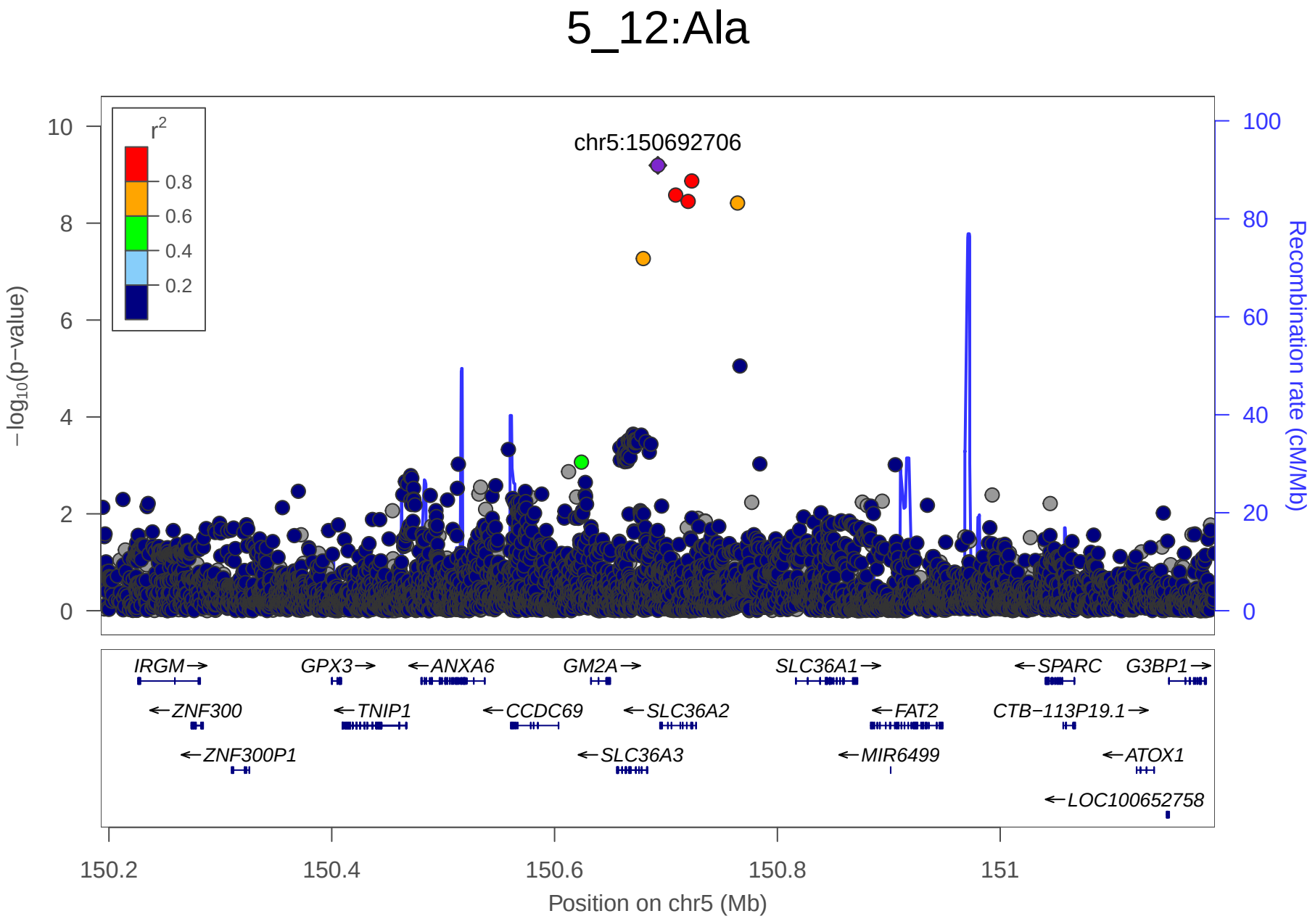

5_7:XL−HDL−FC_percent
chr5:72351708
r2
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
LOC102503427
TNPO1
FCHO2
TMEM174
FOXD1
LINC02056
MIR4804
TMEM171
LINC01386
LOC105379030
BTF3
LOC340090
ANKRA2
72
72.2
72.4
72.6
72.8
Position on chr5 (Mb)

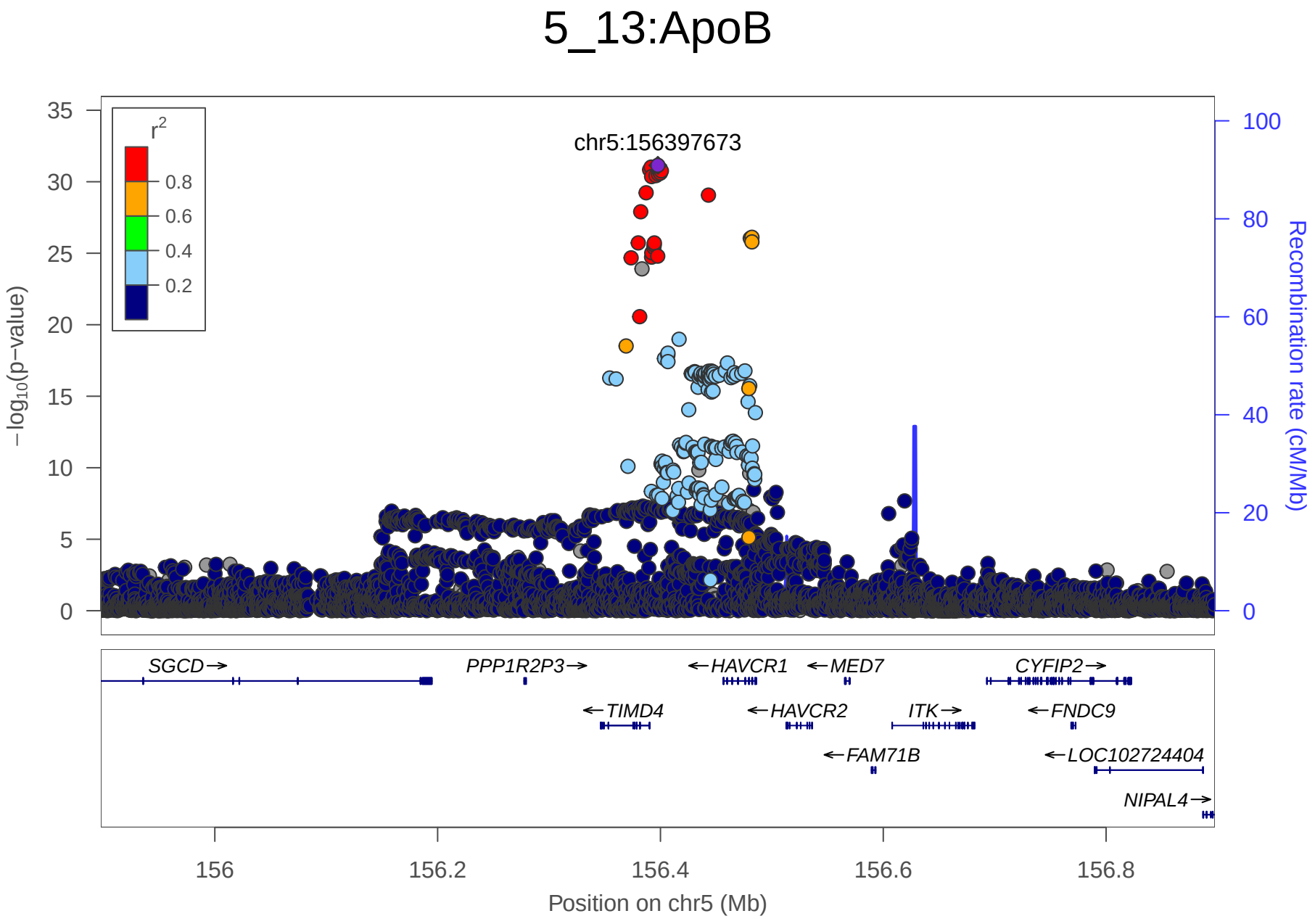

5_8:L−LDL−CE
chr5:74656539
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FAM169A
GCNT4
HMGCR
POLK
POC5
LOC441086
ANKRD31
COL4A3BP
ANKDD1B
LINC01336
Position on chr5 (Mb)

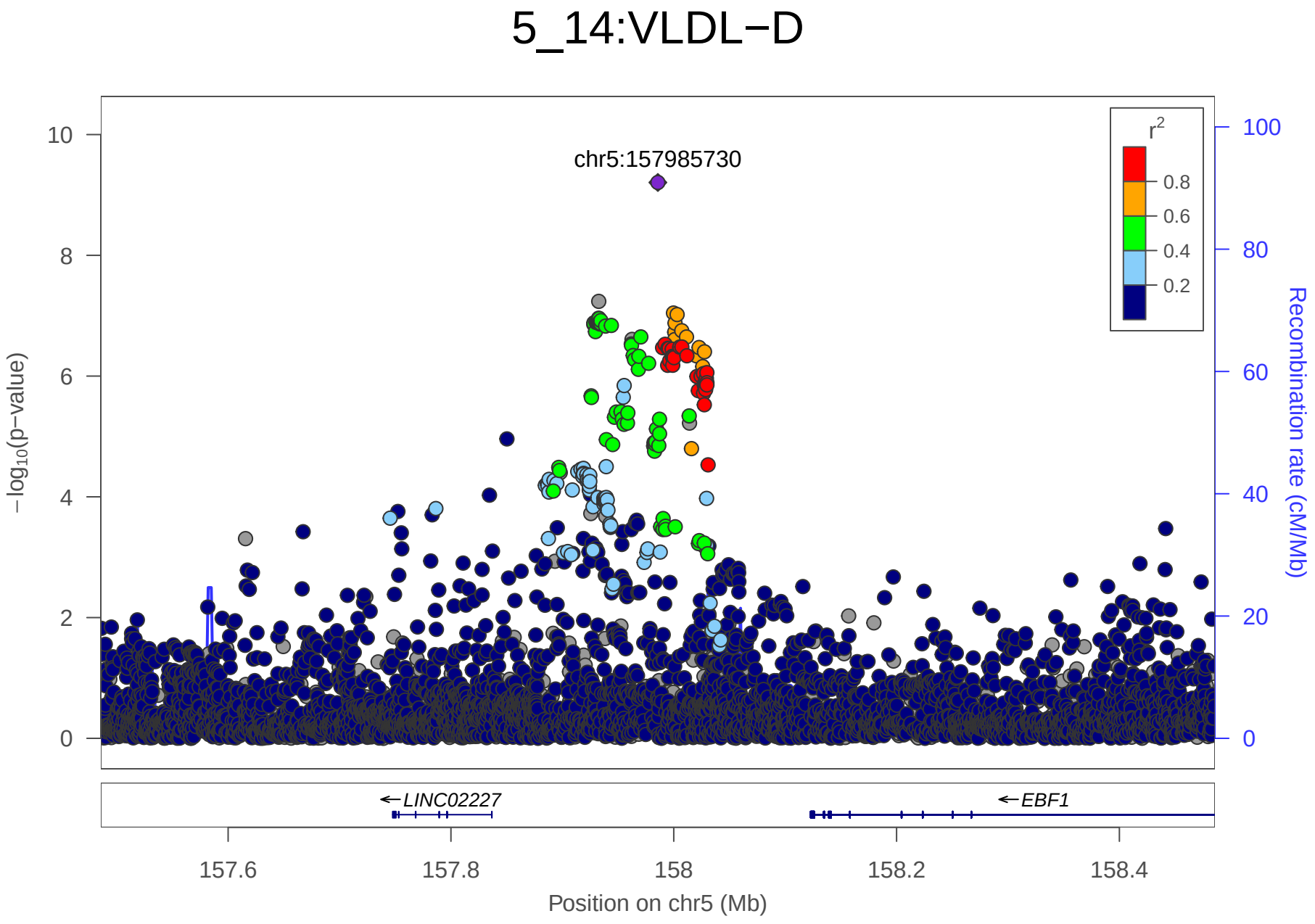

5_9:Glc
chr5:95539536
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SPATA9
ELL2
MIR583
PCSK1
CAST
RHOBTB3
LOC101929710
GLRX
LINC01554
95.2
95.4
95.6
95.8
96
Position on chr5 (Mb)

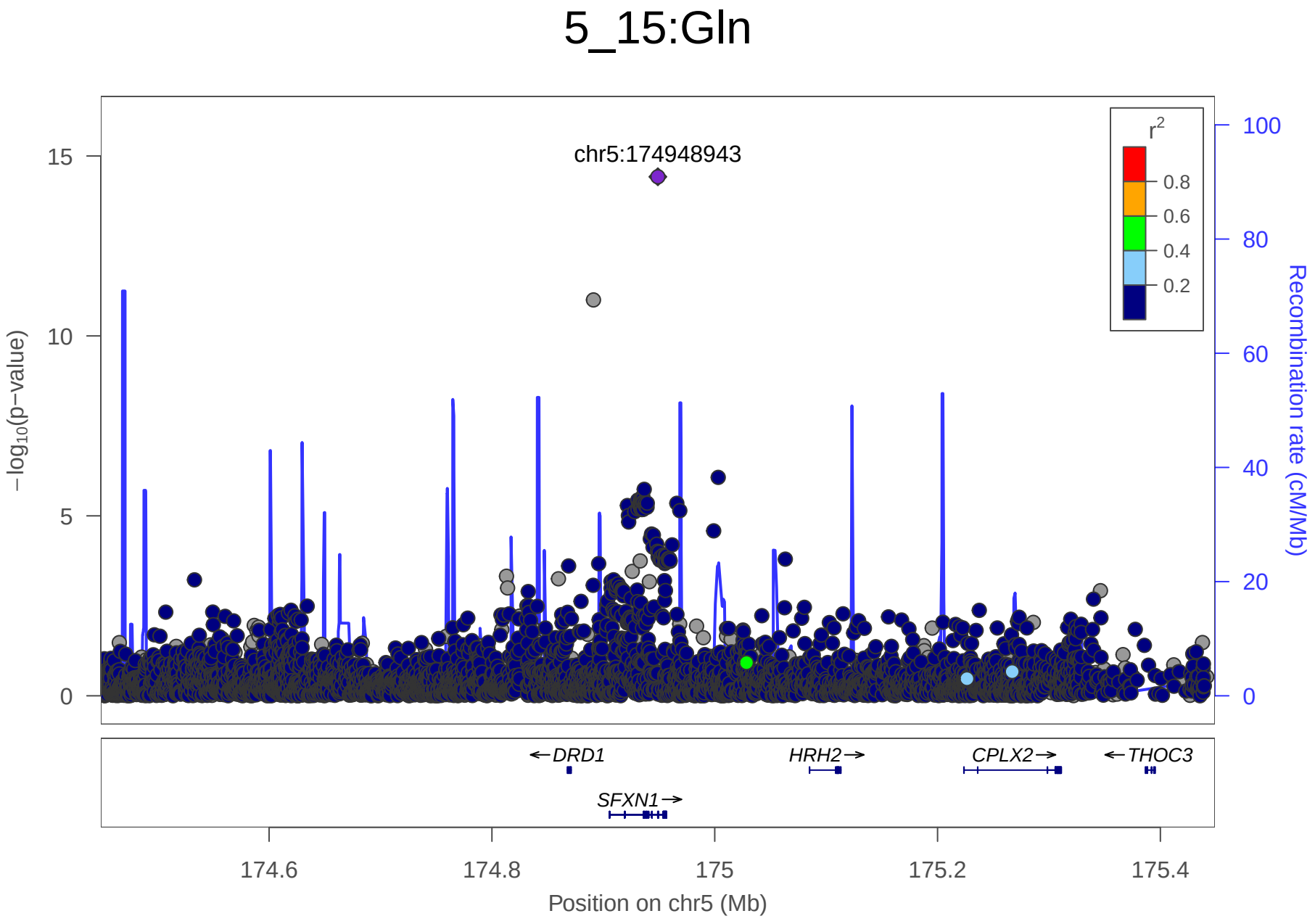

5_10:L−LDL−C_percent
chr5:123053647
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CEP120
CSNK1G3
LINC01170
Position on chr5 (Mb)

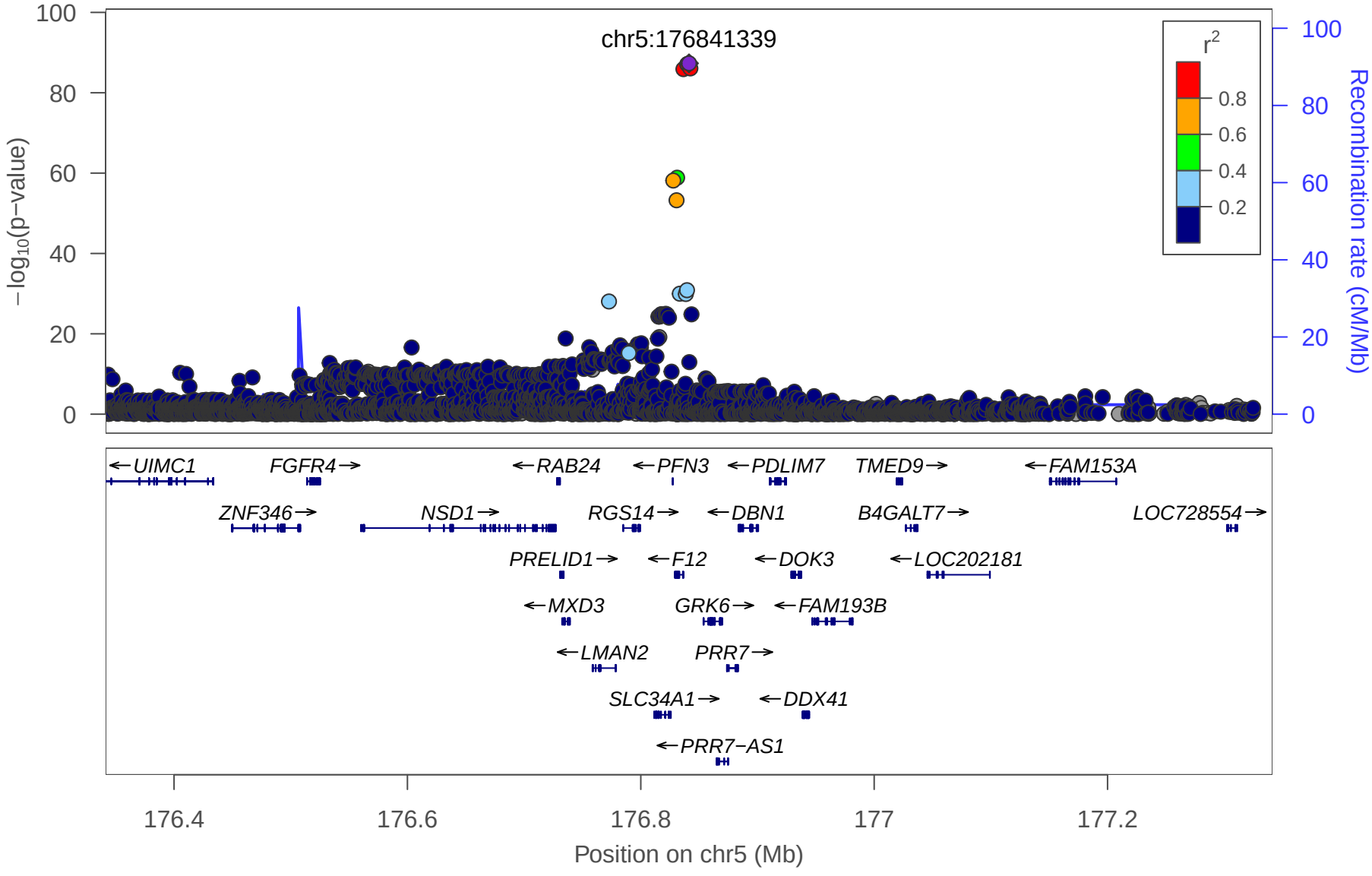

5_11:LDL−D
chr5:131778716
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
MEIKIN
P4HA2−AS1
SLC22A4
C5orf56
IL5
TH2LCRR
CCNI2
GDF9
ACSL6
IL3
P4HA2
MIR3936HG
IRF1
RAD50
IL4
SEPT8
UQCRQ
CSF2
MIR6830
MIR3936
IL13
SOWAHA
PDLIM4
SLC22A5
LOC105379176
LEAP2
KIF3A
SHROOM1
AFF4
131.4
131.6
131.8
132
132.2
Position on chr5 (Mb)

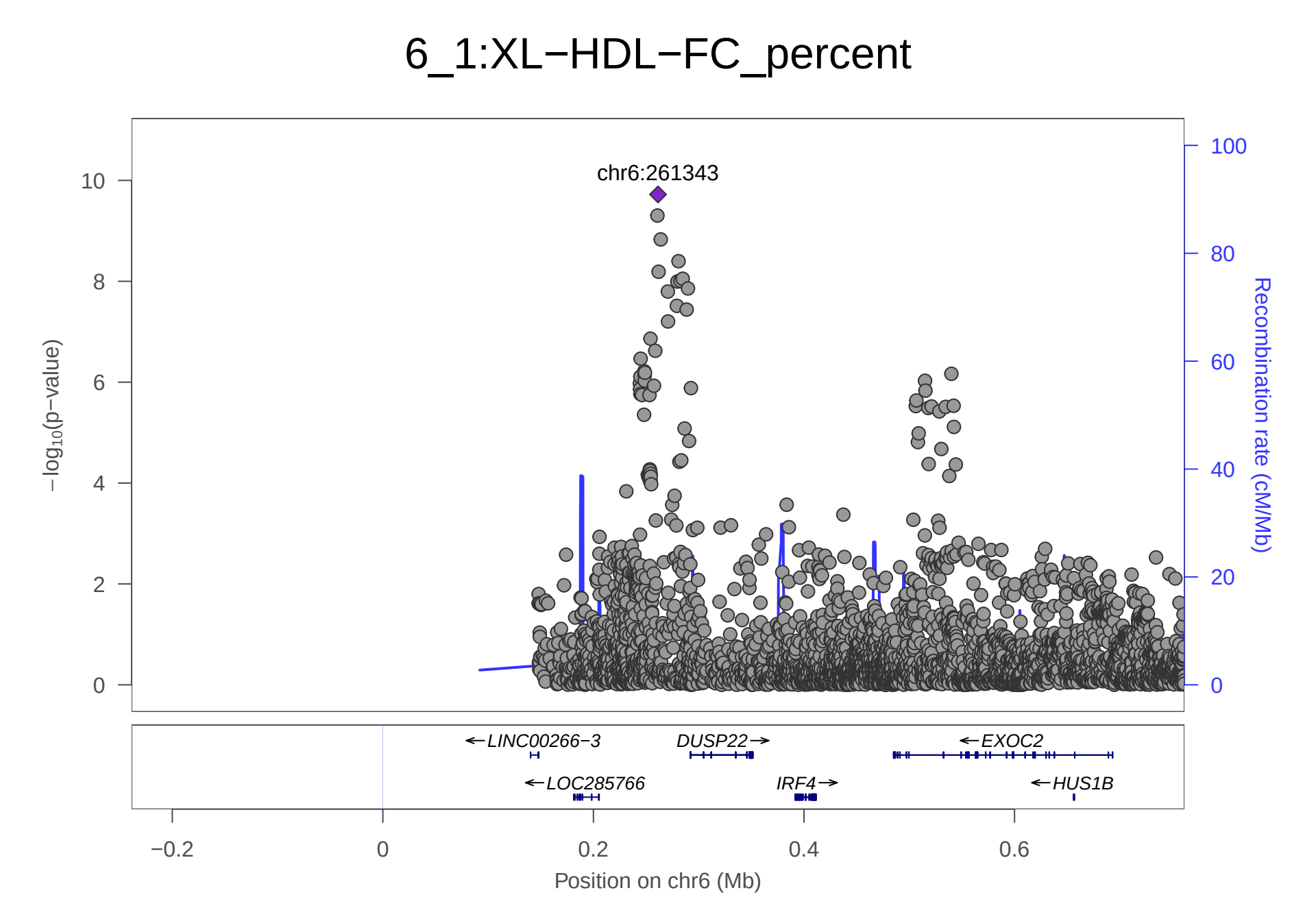

5_12:Ala
chr5:150692706
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
IRGM
GPX3
ANXA6
GM2A
SLC36A1
SPARC
G3BP1
ZNF300
TNIP1
CCDC69
SLC36A2
FAT2
CTB−113P19.1
ZNF300P1
SLC36A3
MIR6499
ATOX1
LOC100652758
150.2
150.4
150.6
150.8
151
Position on chr5 (Mb)

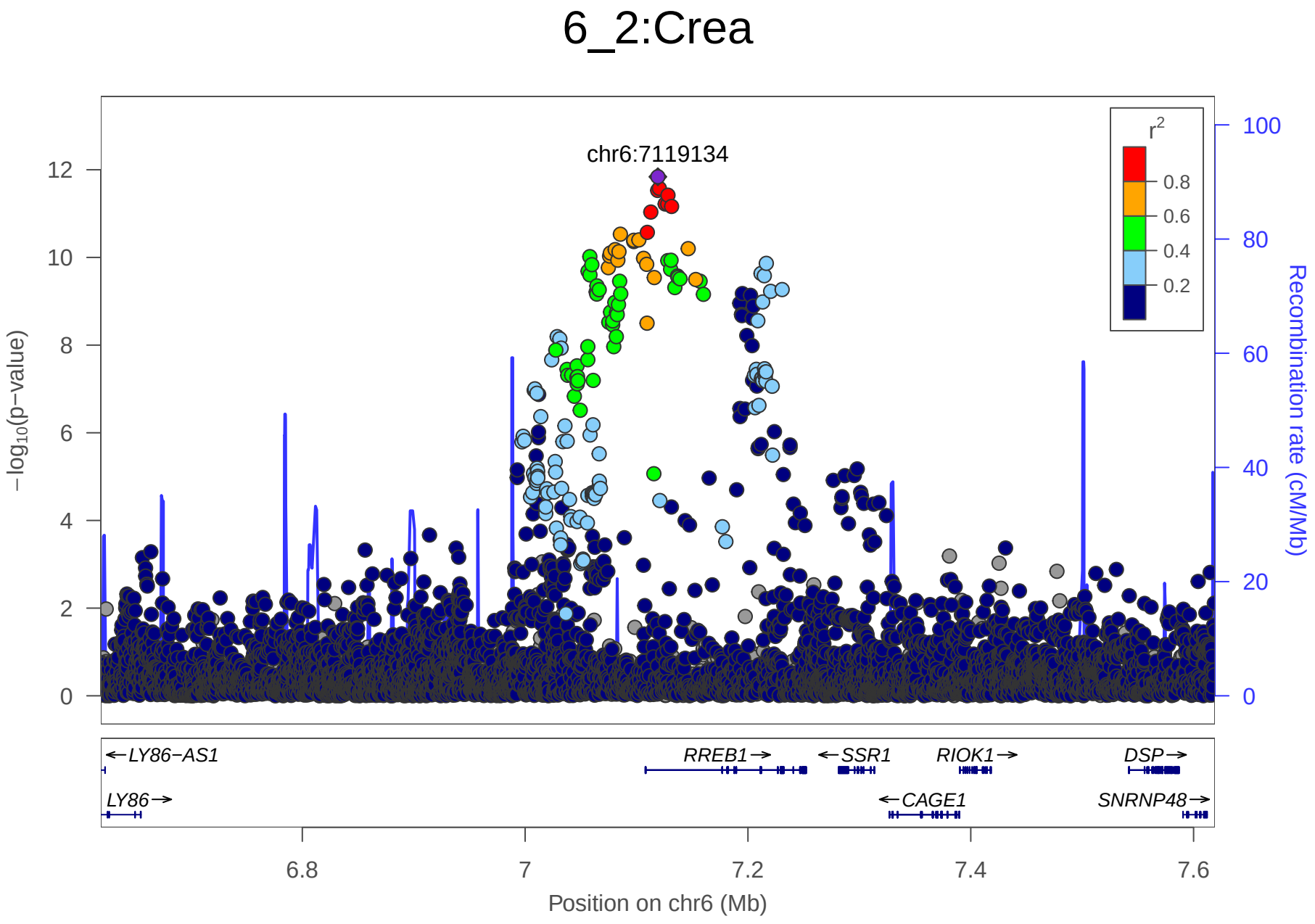

5_13:ApoB
chr5:156397673
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SGCD
PPP1R2P3
HAVCR1
MED7
CYFIP2
TIMD4
HAVCR2
ITK
FNDC9
FAM71B
LOC102724404
NIPAL4
Position on chr5 (Mb)

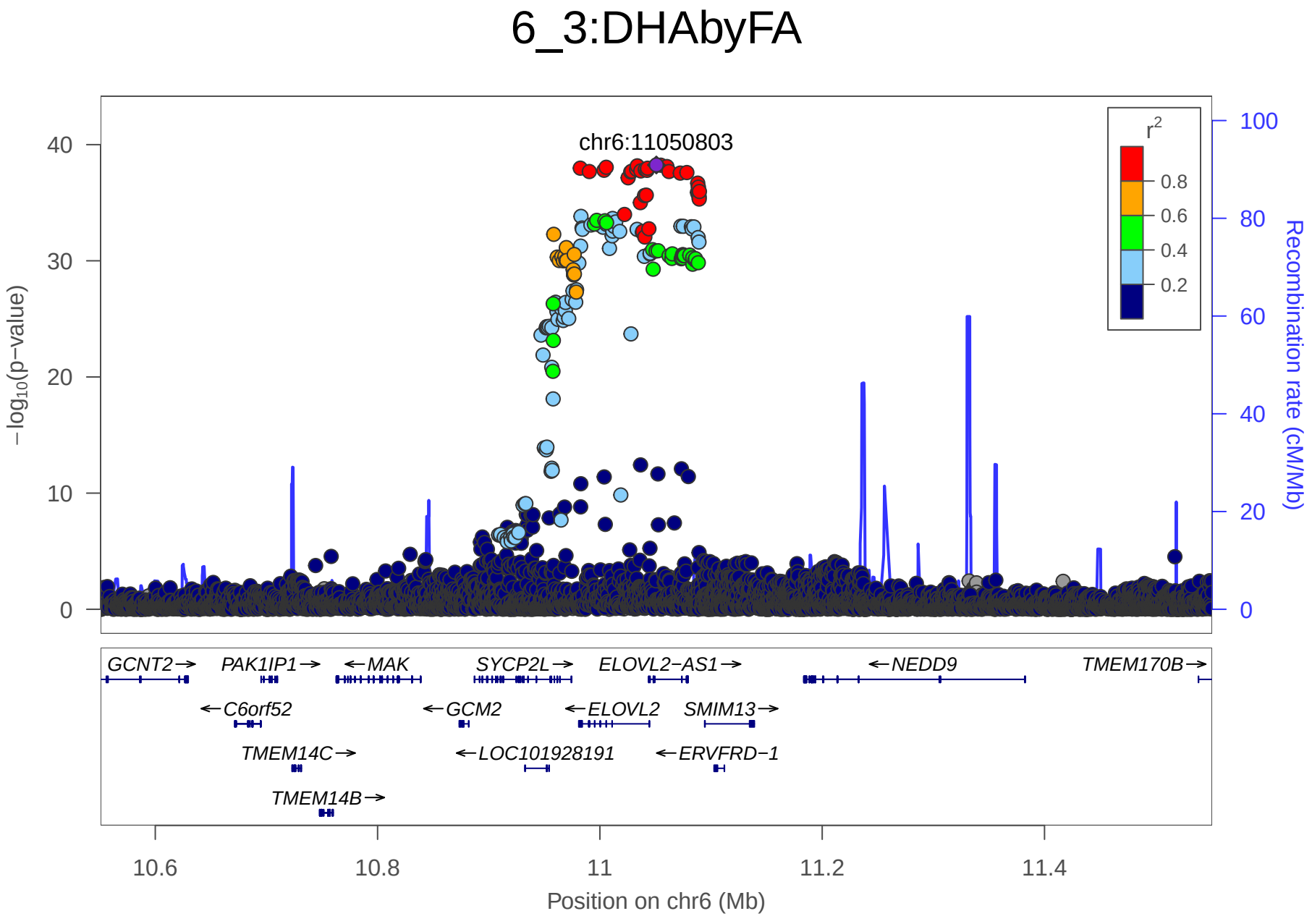

5_14:VLDL−D
chr5:157985730
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LINC02227
EBF1
Position on chr5 (Mb)

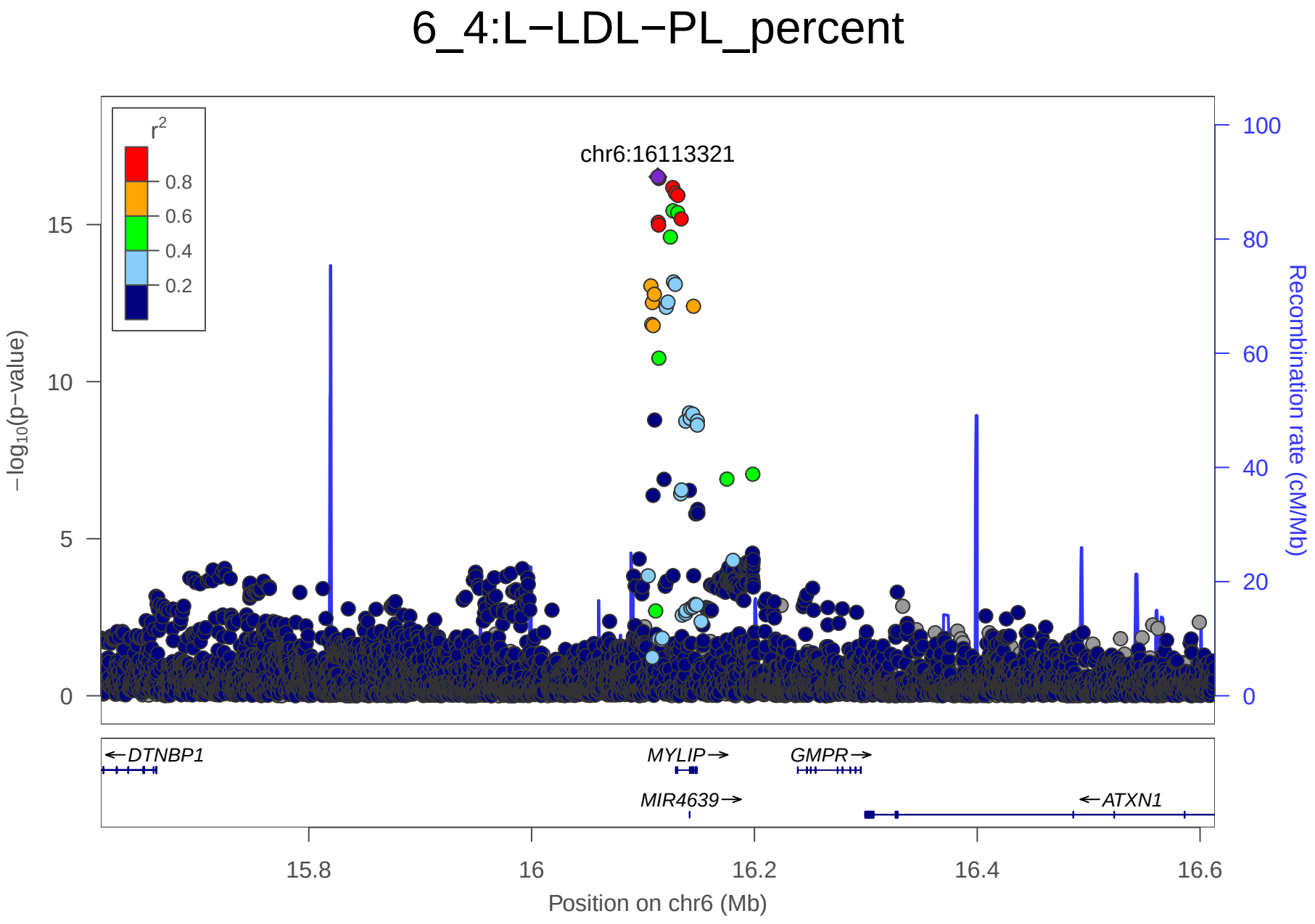

5_15:Gln
chr5:174948943
r2
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←DRD1
HRH2→
CPLX2→
←THOC3
SFXN1→
174.6
174.8
175
175.2
175.4
Position on chr5 (Mb)

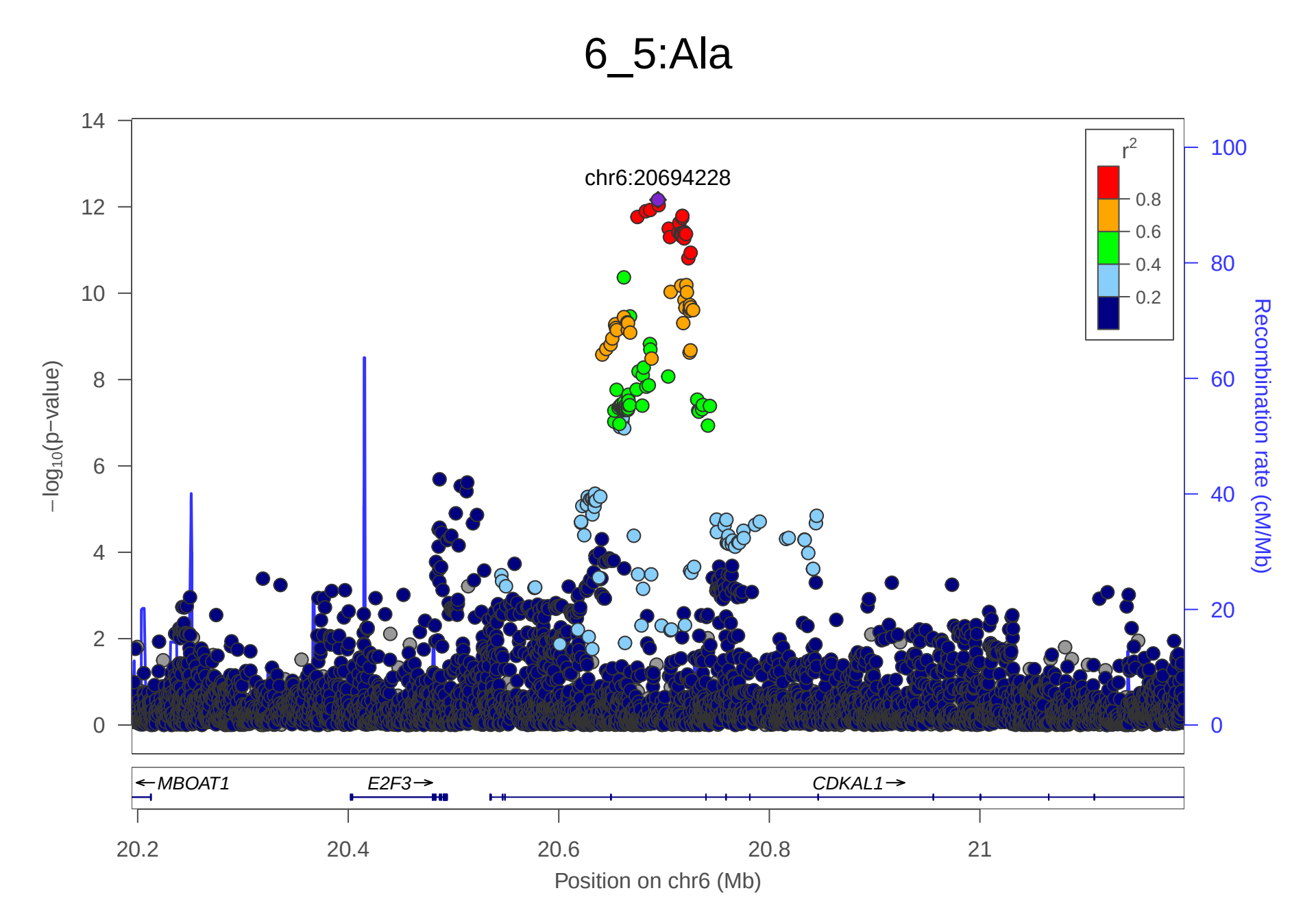

5_16:Phe
chr5:176841339
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
100
80
60
40
20
0
UIMC1
FGFR4
RAB24
PFN3
PDLIM7
TMED9
FAM153A
ZNF346
NSD1
RGS14
DBN1
B4GALT7
LOC728554
PRELID1
F12
DOK3
LOC202181
MXD3
GRK6
FAM193B
LMAN2
PRR7
SLC34A1
DDX41
PRR7−AS1
176.4
176.6
176.8
177
177.2
Position on chr5 (Mb)

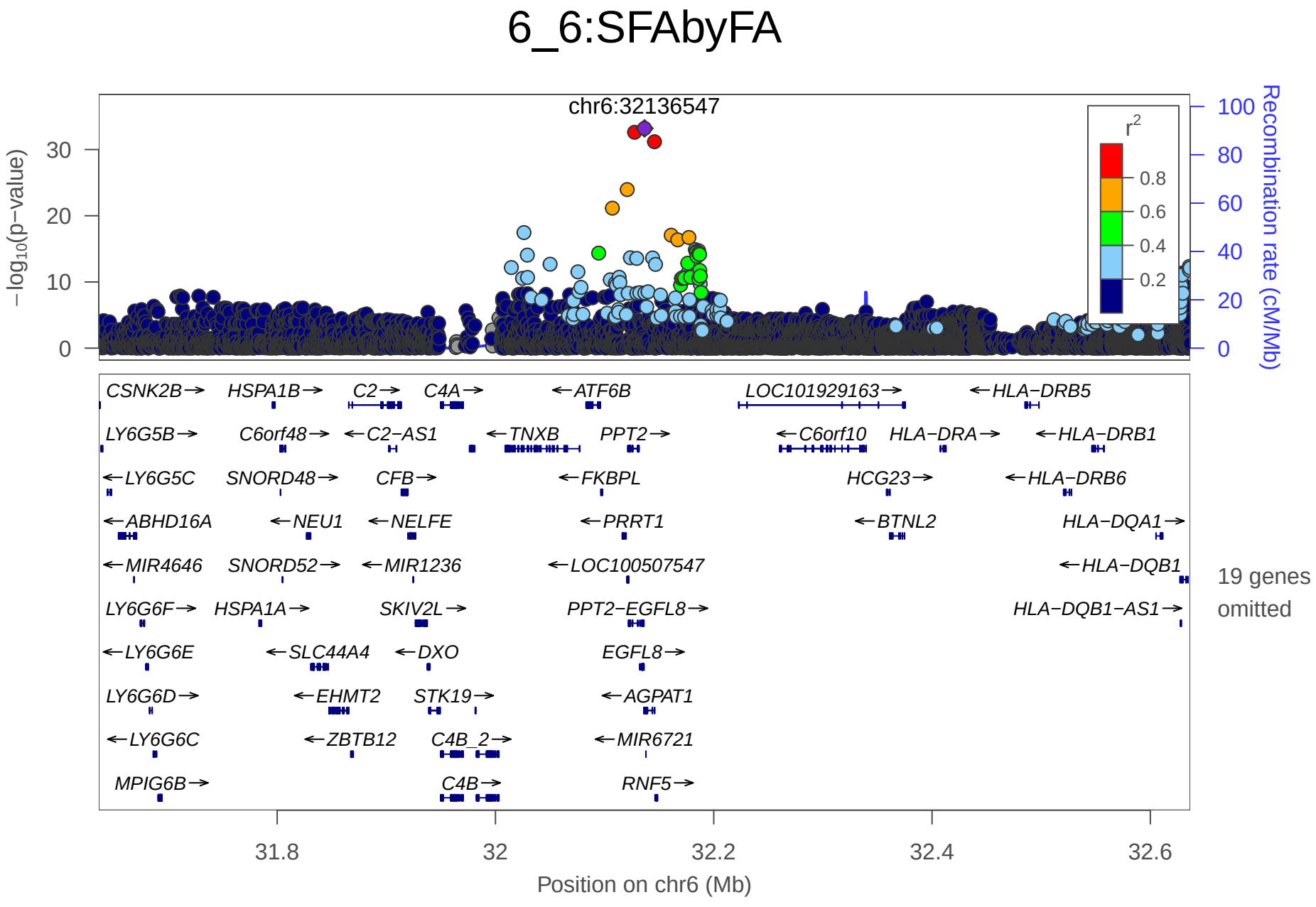

6_1:XL−HDL−FC_percent
chr6:261343
−log10(p−value)
Recombination rate (cM/Mb)
LINC00266−3
DUSP22
EXOC2
LOC285766
IRF4
HUS1B
Position on chr6 (Mb)

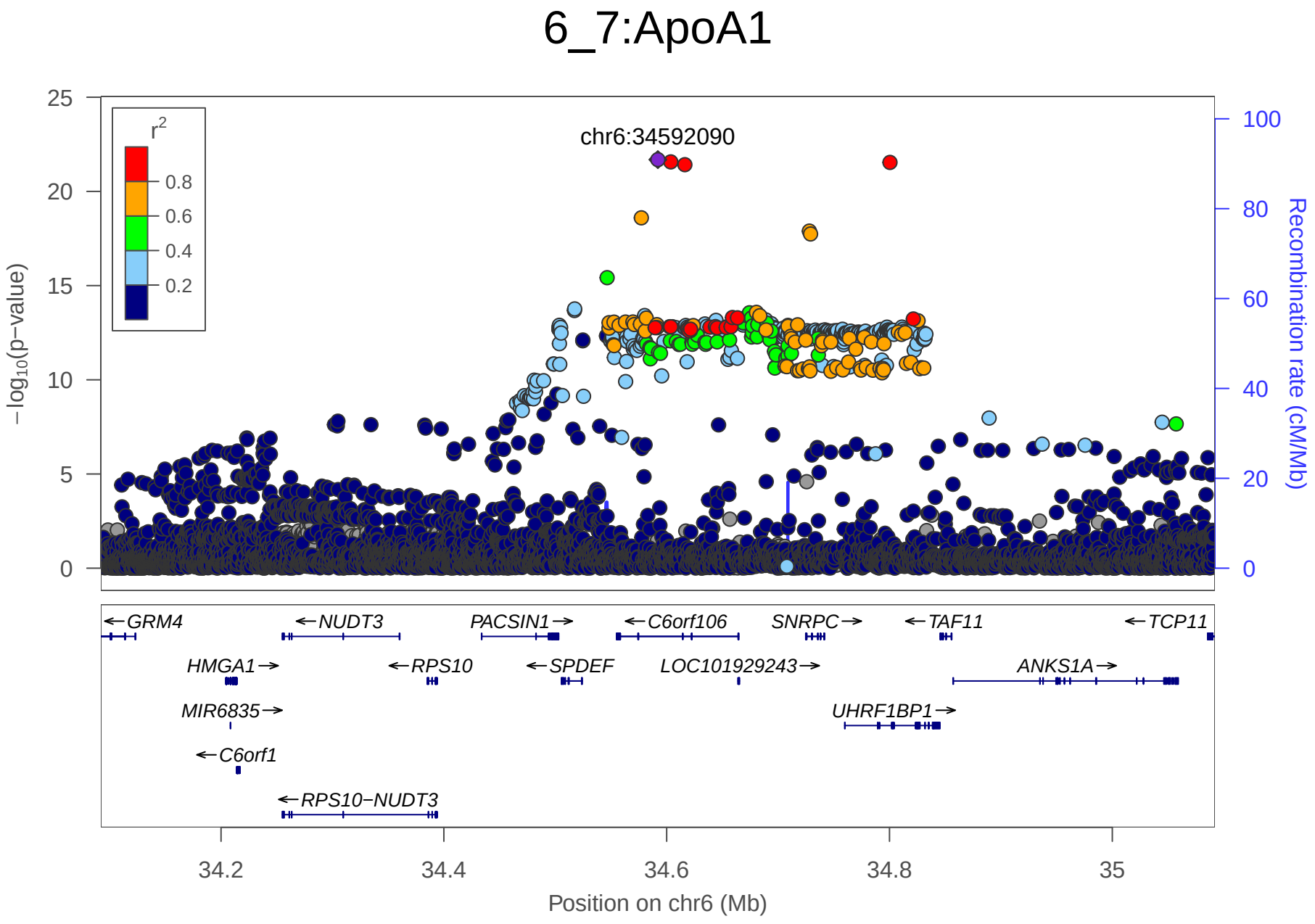

6_2:Crea
chr6:7119134
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LY86−AS1
LY86
RREB1
SSR1
RIOK1
CAGE1
DSP
SNRNP48
Position on chr6 (Mb)

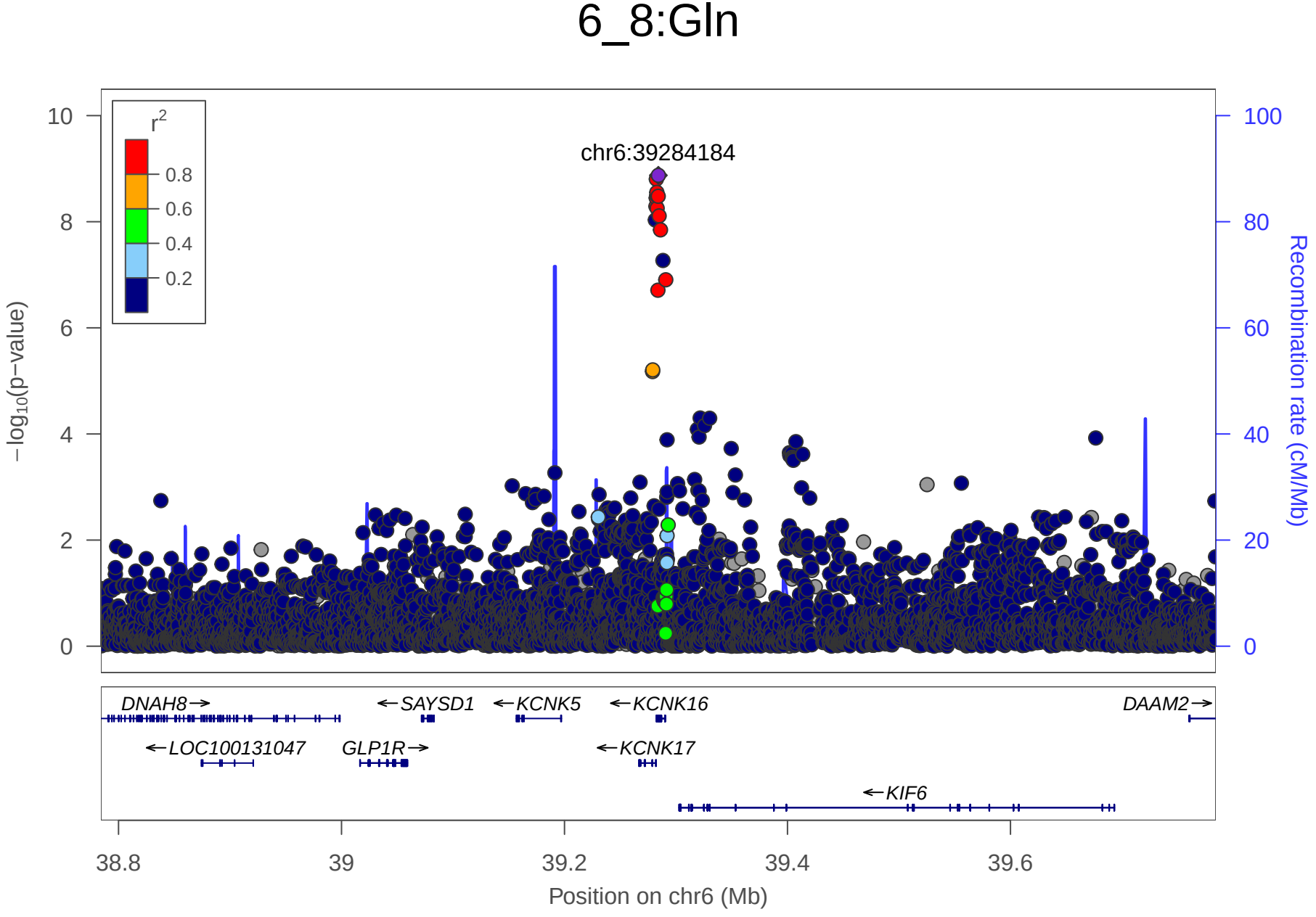

6_3:DHAbyFA
chr6:11050803
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
GCNT2→
PAK1IP1→
←MAK
SYCP2L→
ELOVL2−AS1→
←NEDD9
TMEM170B→
←C6orf52
←GCM2
←ELOVL2
SMIM13→
TMEM14C→
←LOC101928191
←ERVFRD−1
TMEM14B→
Position on chr6 (Mb)

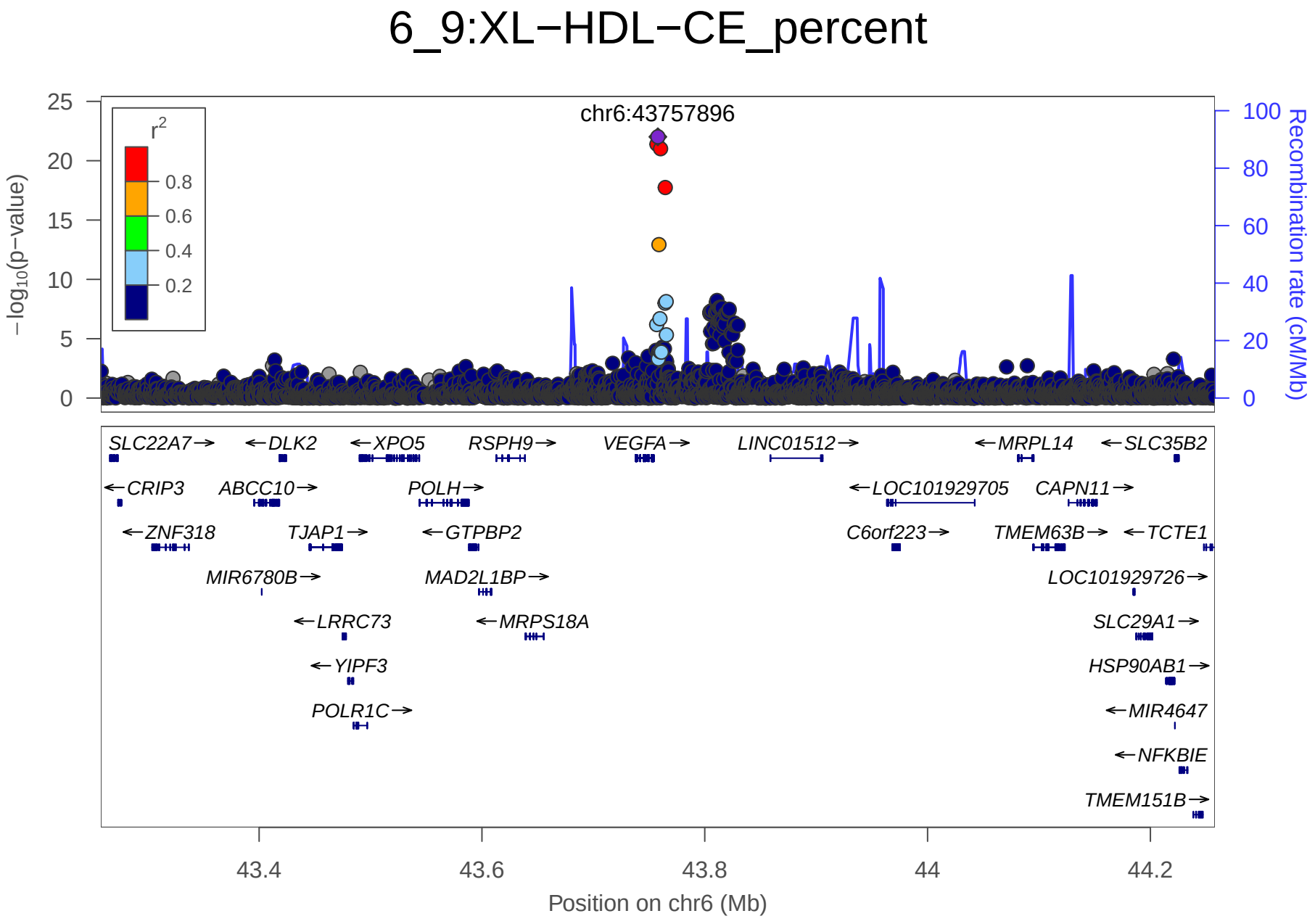

6_4:L−LDL−PL_percent
r2
0.8
0.6
0.4
0.2
chr6:16113321
−log10(p−value)
15
10
5
0
100
80
60
40
20
0
Recombination rate (cM/Mb)
←DTNBP1
MYLIP→
GMPR→
MIR4639→
←ATXN1
15.8
16
16.2
16.4
16.6
Position on chr6 (Mb)

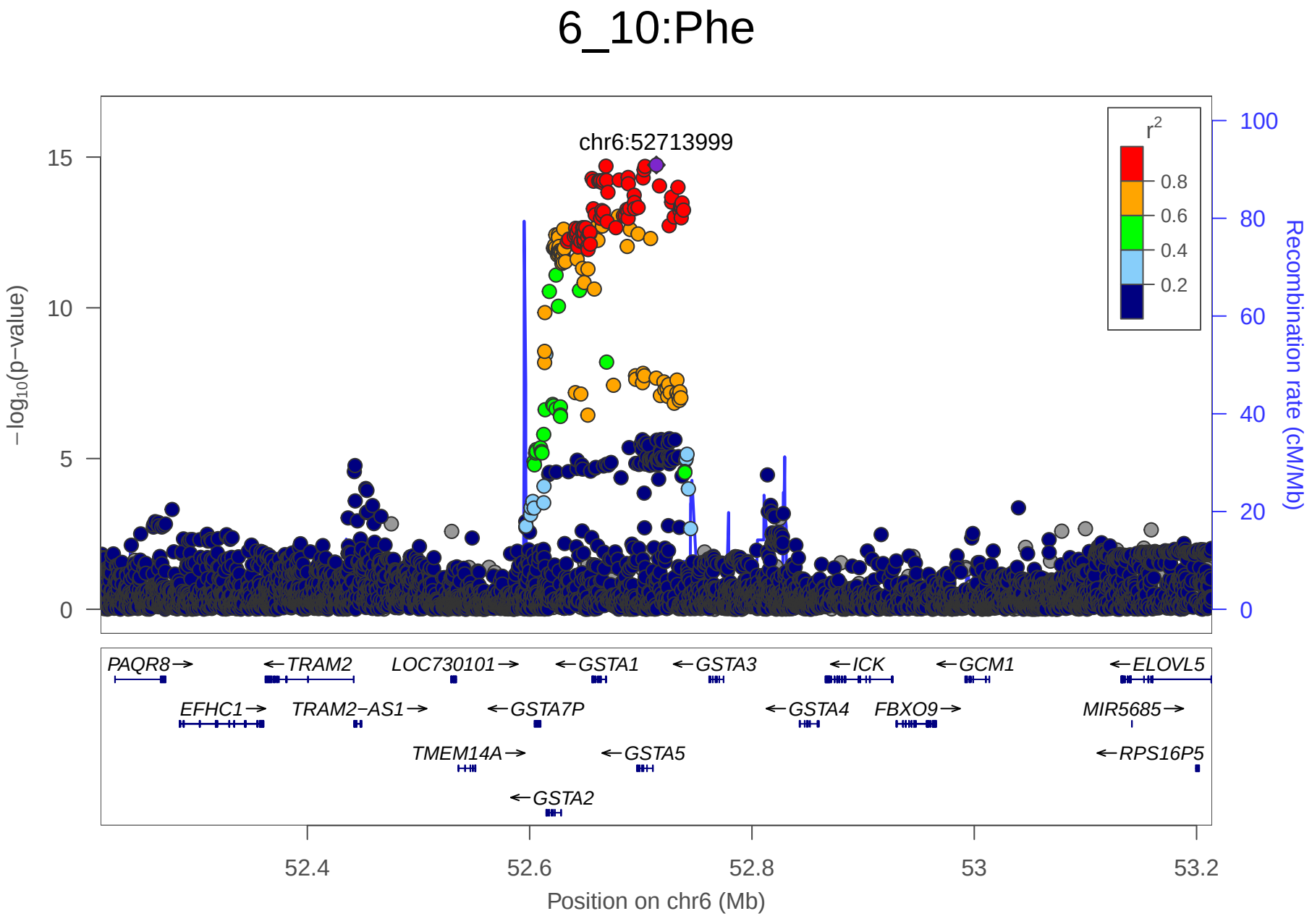

6_5:Ala
chr6:20694228
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
MBOAT1
E2F3
CDKAL1
Position on chr6 (Mb)

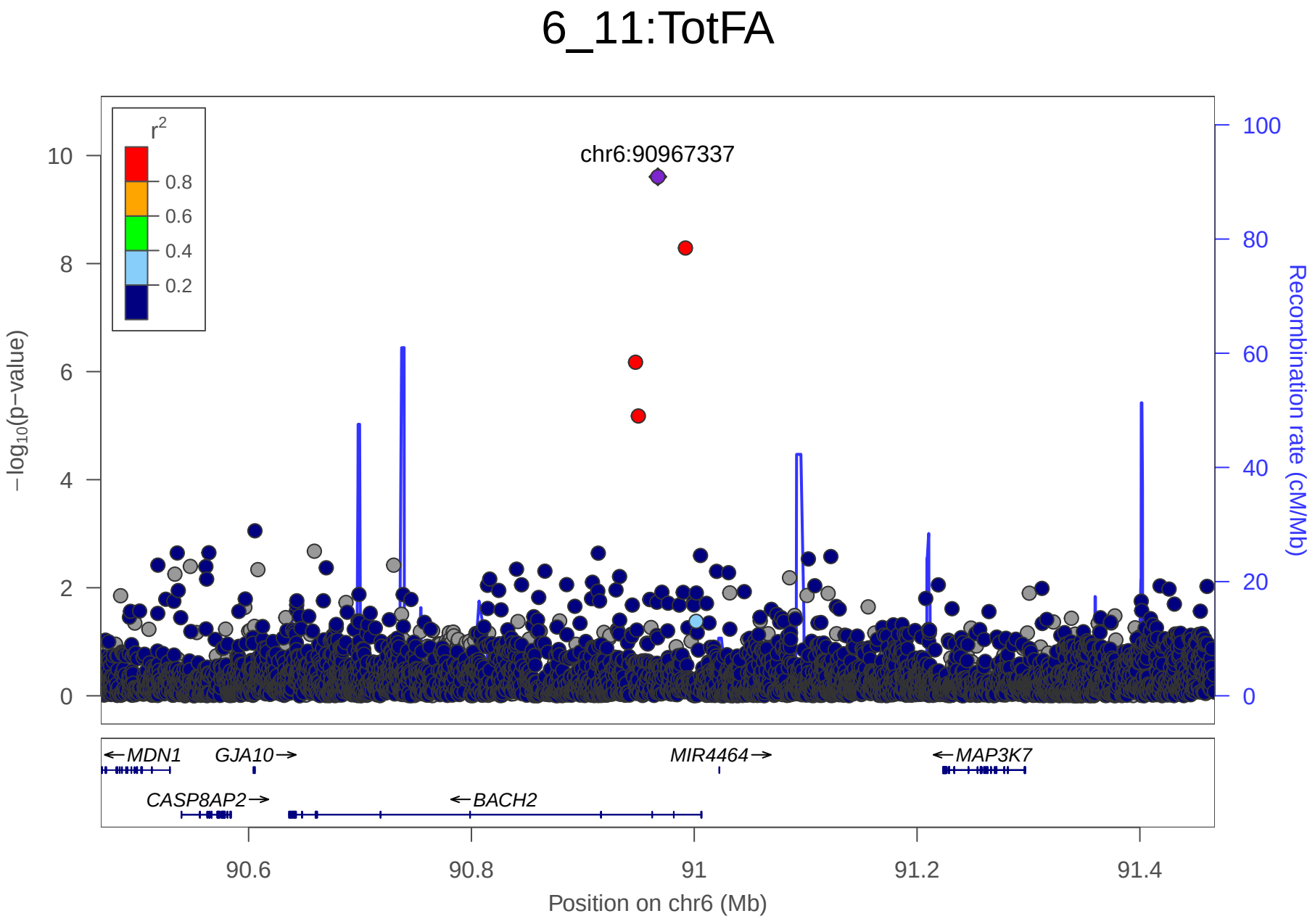

6_6:SFAbyFA
chr6:32136547
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CSNK2B→ HSPA1B→ C2→ C4A→ ←ATF6B LOC101929163→ ←HLA−DRB5
LY6G5B→ C6orf48→ ←C2−AS1 ←TNXB PPT2→ ←C6orf10 HLA−DRA→ ←HLA−DRB1
←LY6G5C SNORD48→ CFB→ ←FKBPL HCG23→ ←HLA−DRB6
←ABHD16A ←NEU1 ←NELFE ←PRRT1 ←BTNL2 HLA−DQA1→
←MIR4646 SNORD52→ ←MIR1236 ←LOC100507547 ←HLA−DQB1
LY6G6F→ HSPA1A→ SKIV2L→ PPT2−EGFL8→ HLA−DQB1−AS1→
←LY6G6E ←SLC44A4 ←DXO EGFL8→
LY6G6D→ ←EHMT2 STK19→ ←AGPAT1
←LY6G6C ←ZBTB12 C4B_2→ ←MIR6721
MPIG6B→ C4B→ RNF5→
19 genes omitted
Position on chr6 (Mb)

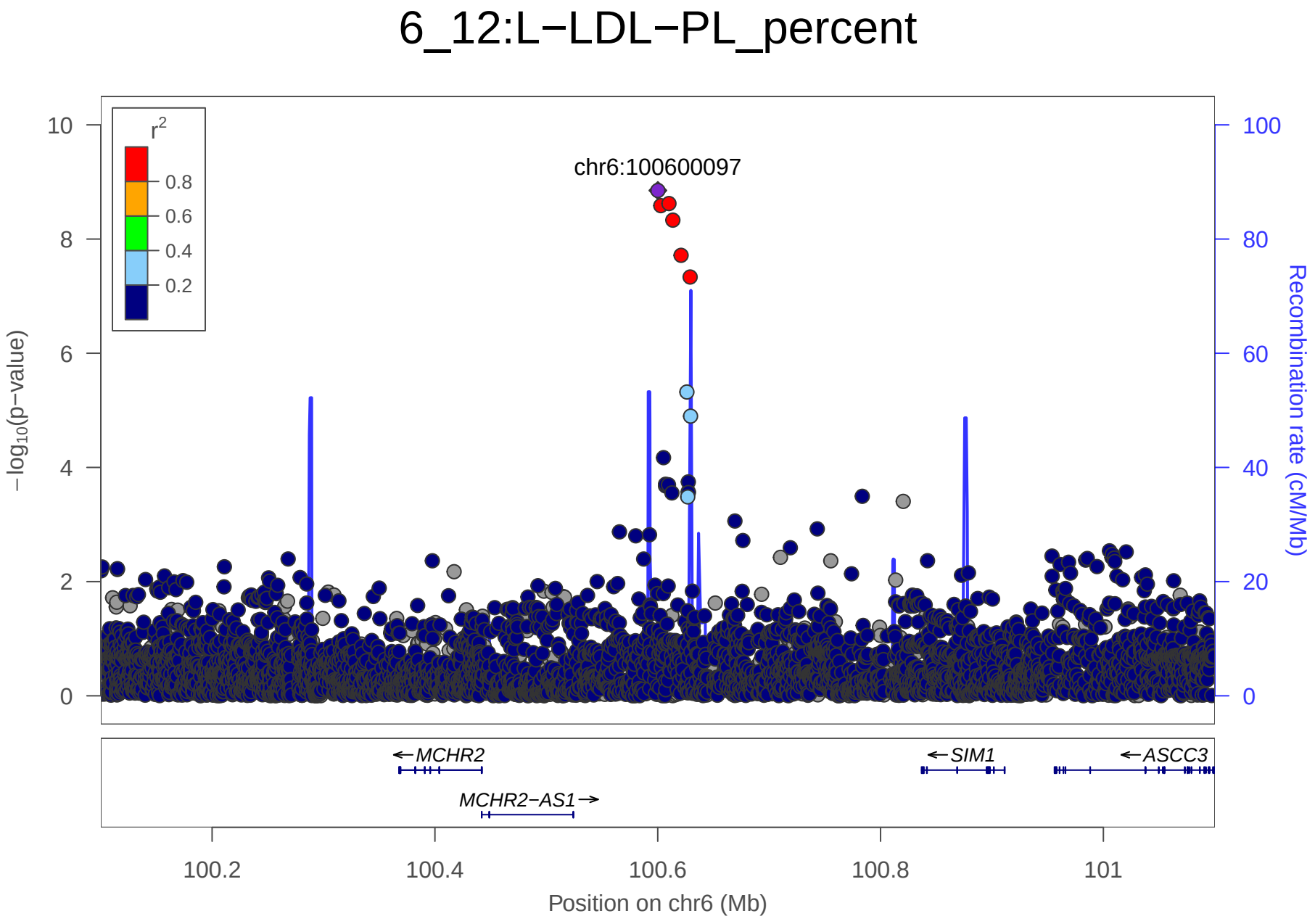

6_7:ApoA1
chr6:34592090
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
25
20
15
10
5
0
100
80
60
40
20
0
←GRM4
←NUDT3
PACSIN1→
←C6orf106
SNRPC→
←TAF11
←TCP11
HMGA1→
←RPS10
←SPDEF
LOC101929243→
ANKS1A→
MIR6835→
UHRF1BP1→
←C6orf1
←RPS10−NUDT3
34.2
34.4
34.6
34.8
35
Position on chr6 (Mb)


6_8:Gln
chr6:39284184
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DNAH8
SAYSD1
KCNK5
KCNK16
DAAM2
LOC100131047
GLP1R
KCNK17
KIF6
Position on chr6 (Mb)

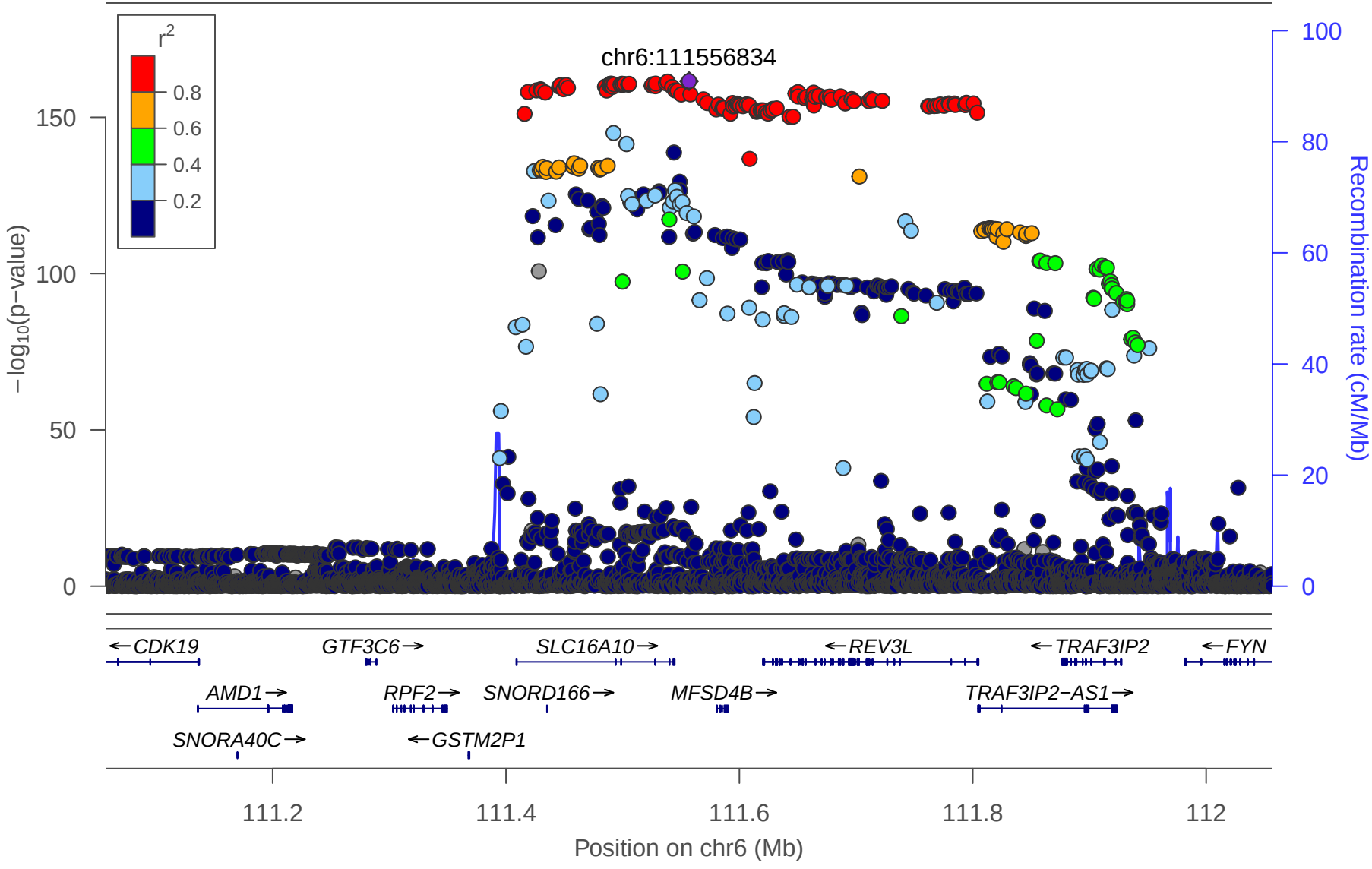

6_9:XL−HDL−CE_percent
chr6:43757896
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SLC22A7
DLK2
XPO5
RSPH9
VEGFA
LINC01512
MRPL14
SLC35B2
CRIP3
ABCC10
POLH
LOC101929705
CAPN11
ZNF318
TJAP1
GTPBP2
C6orf223
TMEM63B
TCTE1
MIR6780B
MAD2L1BP
LOC101929726
LRRC73
MRPS18A
SLC29A1
YIPF3
HSP90AB1
POLR1C
MIR4647
NFKBIE
TMEM151B
Position on chr6 (Mb)

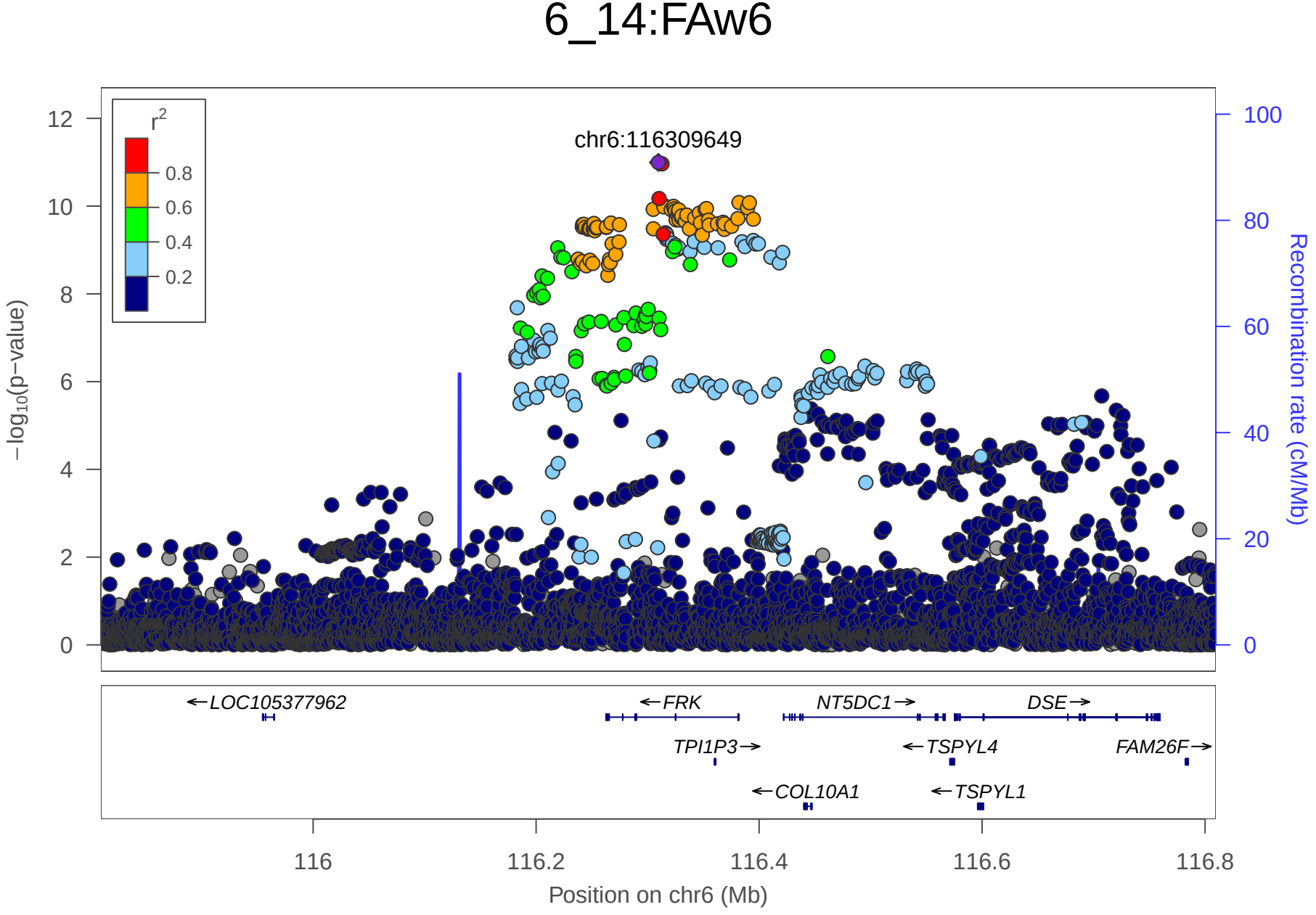

6_10:Phe
chr6:52713999
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
PAQR8
TRAM2
LOC730101
GSTA1
GSTA3
ICK
GCM1
ELOVL5
EFHC1
TRAM2−AS1
GSTA7P
GSTA4
FBXO9
MIR5685
TMEM14A
GSTA5
RPS16P5
GSTA2
52.4
52.6
52.8
53
53.2
Position on chr6 (Mb)

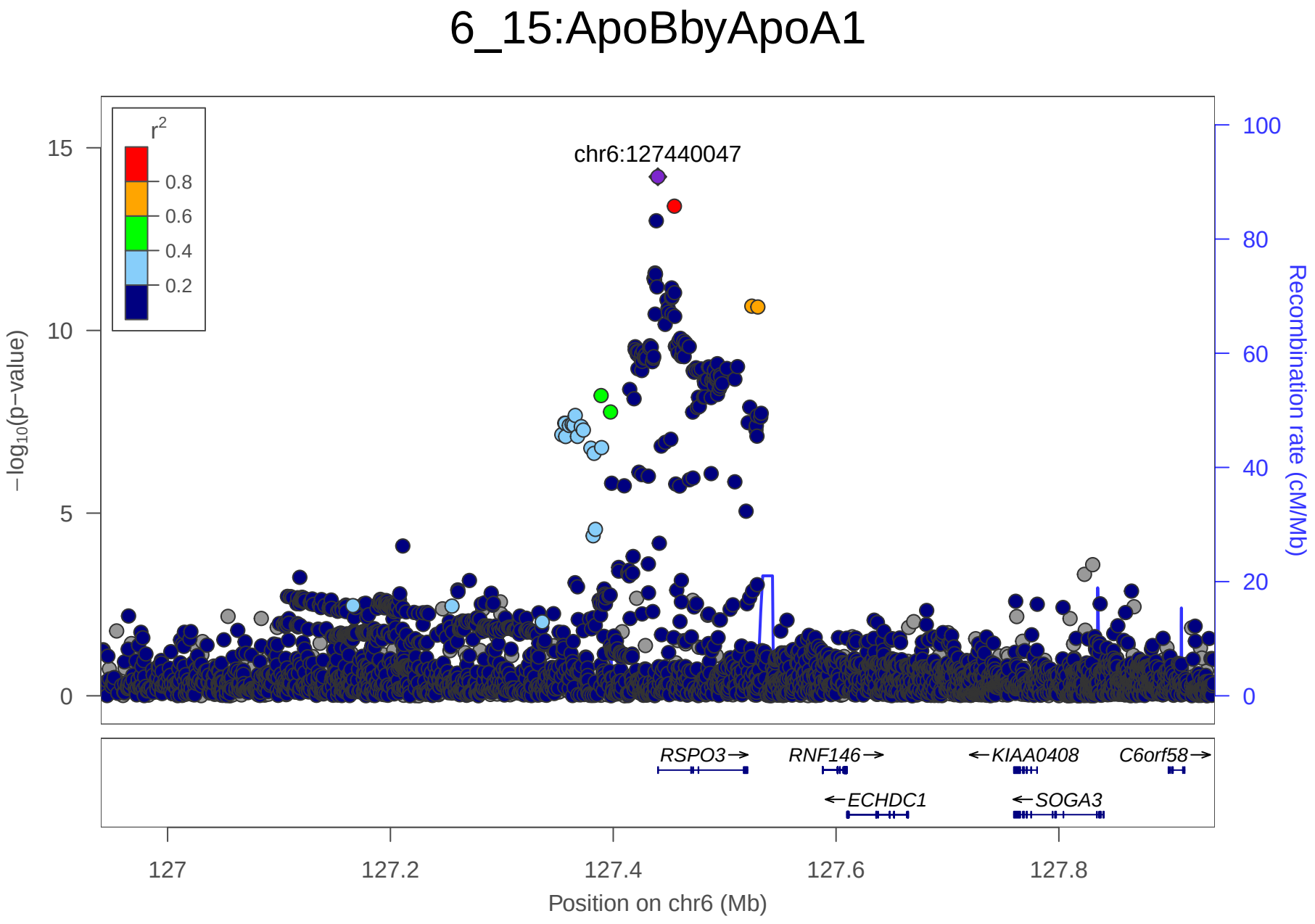

6_11:TotFA
r2
0.8
0.6
0.4
0.2
chr6:90967337
10
8
6
4
2
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←MDN1
GJA10→
MIR4464→
←MAP3K7
CASP8AP2→
←BACH2
90.6
90.8
91
91.2
91.4
Position on chr6 (Mb)

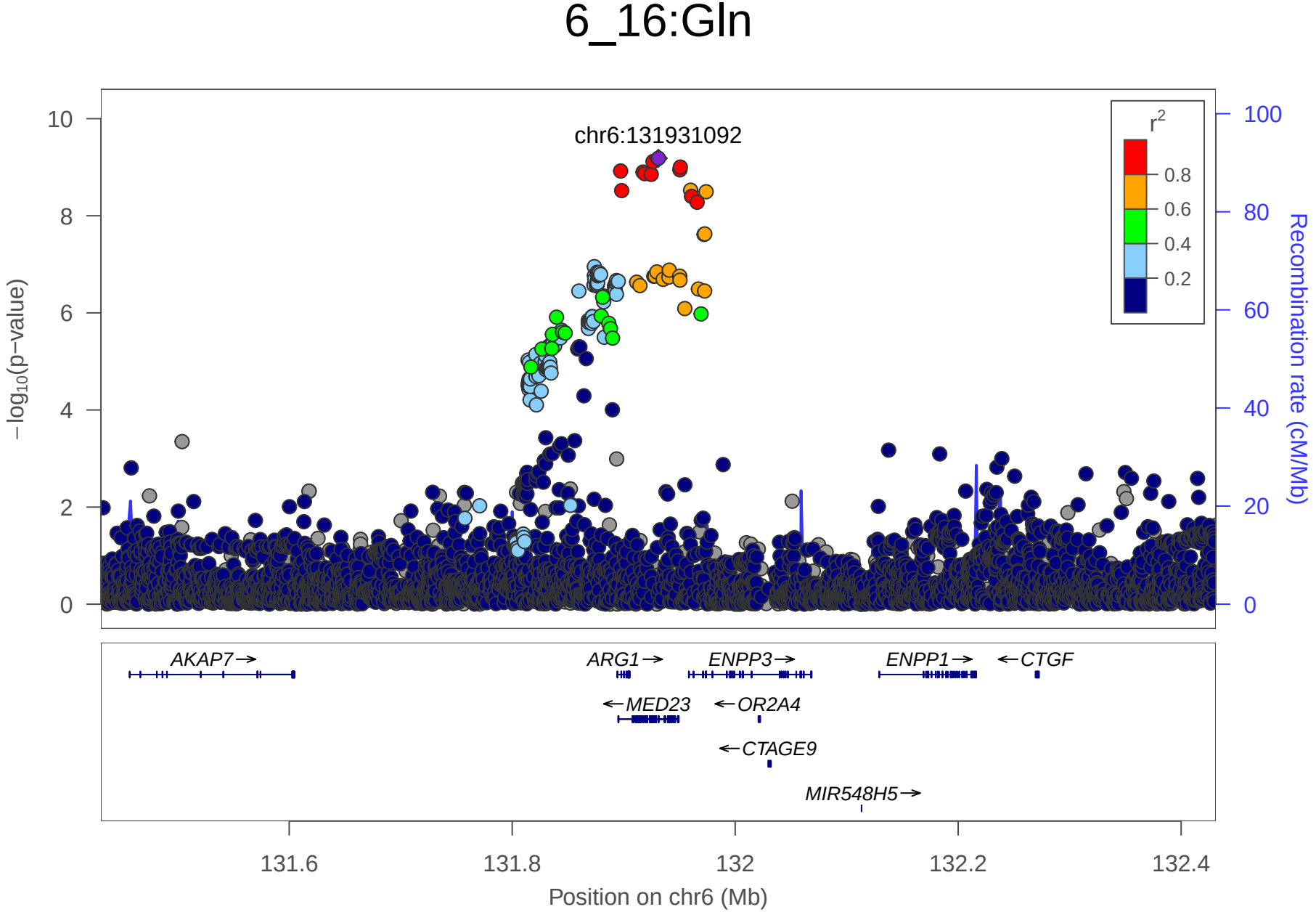

6_12:L−LDL−PL_percent
chr6:100600097
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
MCHR2
MCHR2−AS1
SIM1
ASCC3
Position on chr6 (Mb)

6_13:Tyr

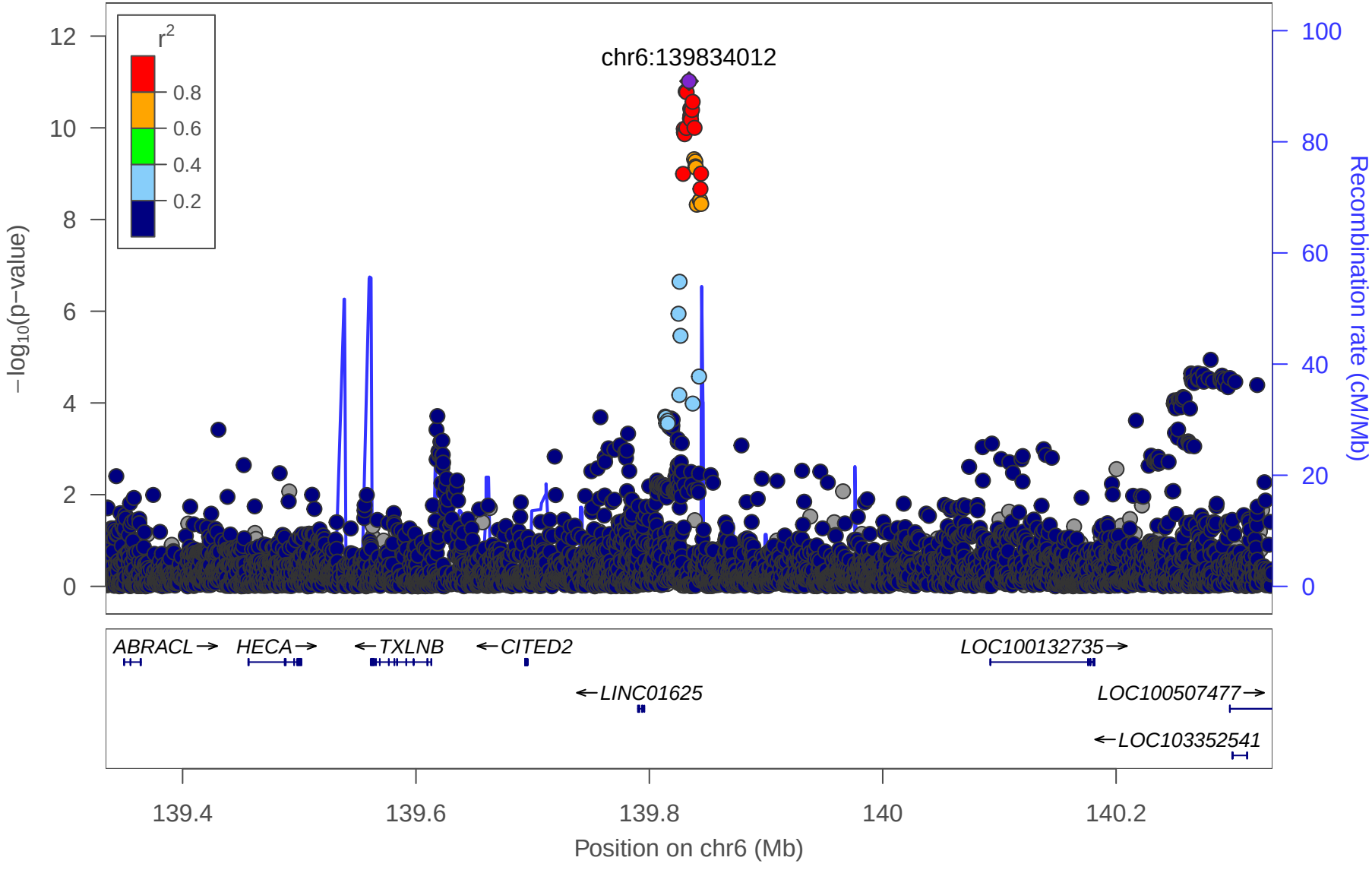

r2
0.8
0.6
0.4
0.2
chr6:111556834
150
100
50
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←CDK19
GTF3C6→
SLC16A10→
←REV3L
←TRAF3IP2
←FYN
AMD1→
RPF2→
SNORD166→
MFSD4B→
TRAF3IP2−AS1→
SNORA40C→
←GSTM2P1
111.2
111.4
111.6
111.8
112
Position on chr6 (Mb)

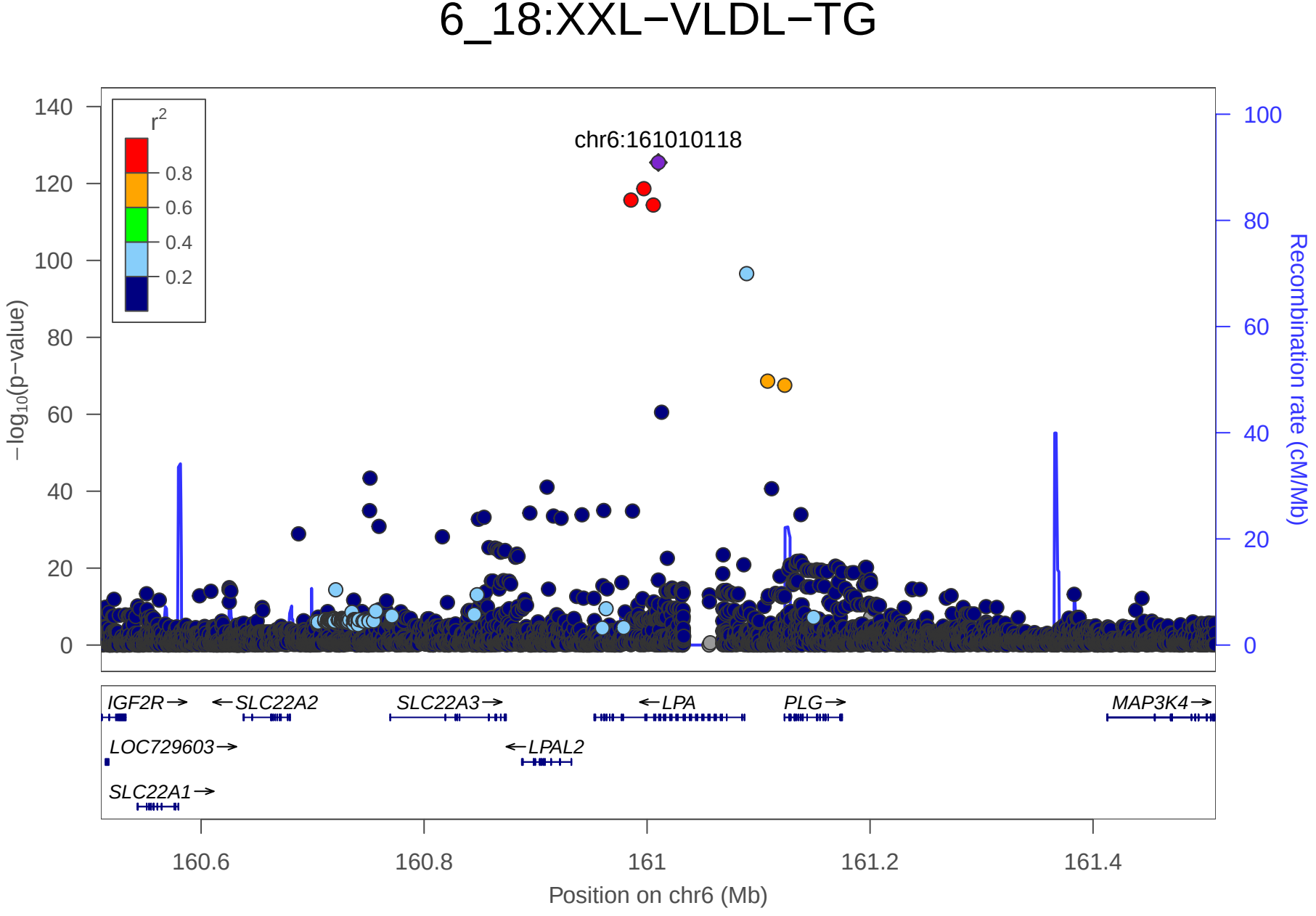

6_14:FAw6
chr6:116309649
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LOC105377962
FRK
NT5DC1
DSE
TPI1P3
TSPYL4
FAM26F
COL10A1
TSPYL1
Position on chr6 (Mb)


6_15:ApoBbyApoA1
chr6:127440047
r2
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
RSPO3
RNF146
KIAA0408
C6orf58
ECHDC1
SOGA3
127
127.2
127.4
127.6
127.8
Position on chr6 (Mb)

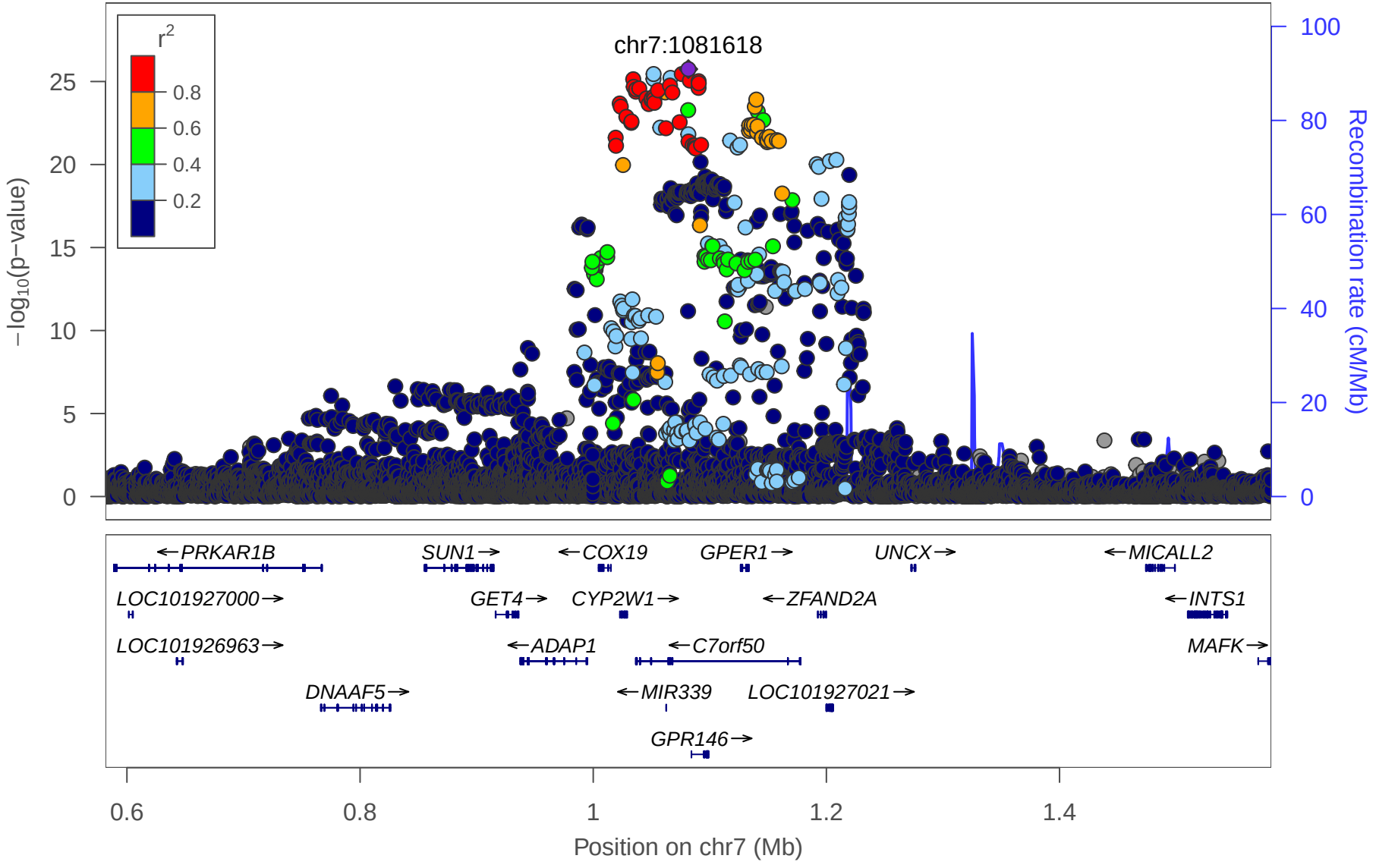

6_16:Gln
chr6:131931092
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
AKAP7
ARG1
ENPP3
ENPP1
CTGF
MED23
OR2A4
CTAGE9
MIR548H5
Position on chr6 (Mb)

6_17:S−VLDL−L

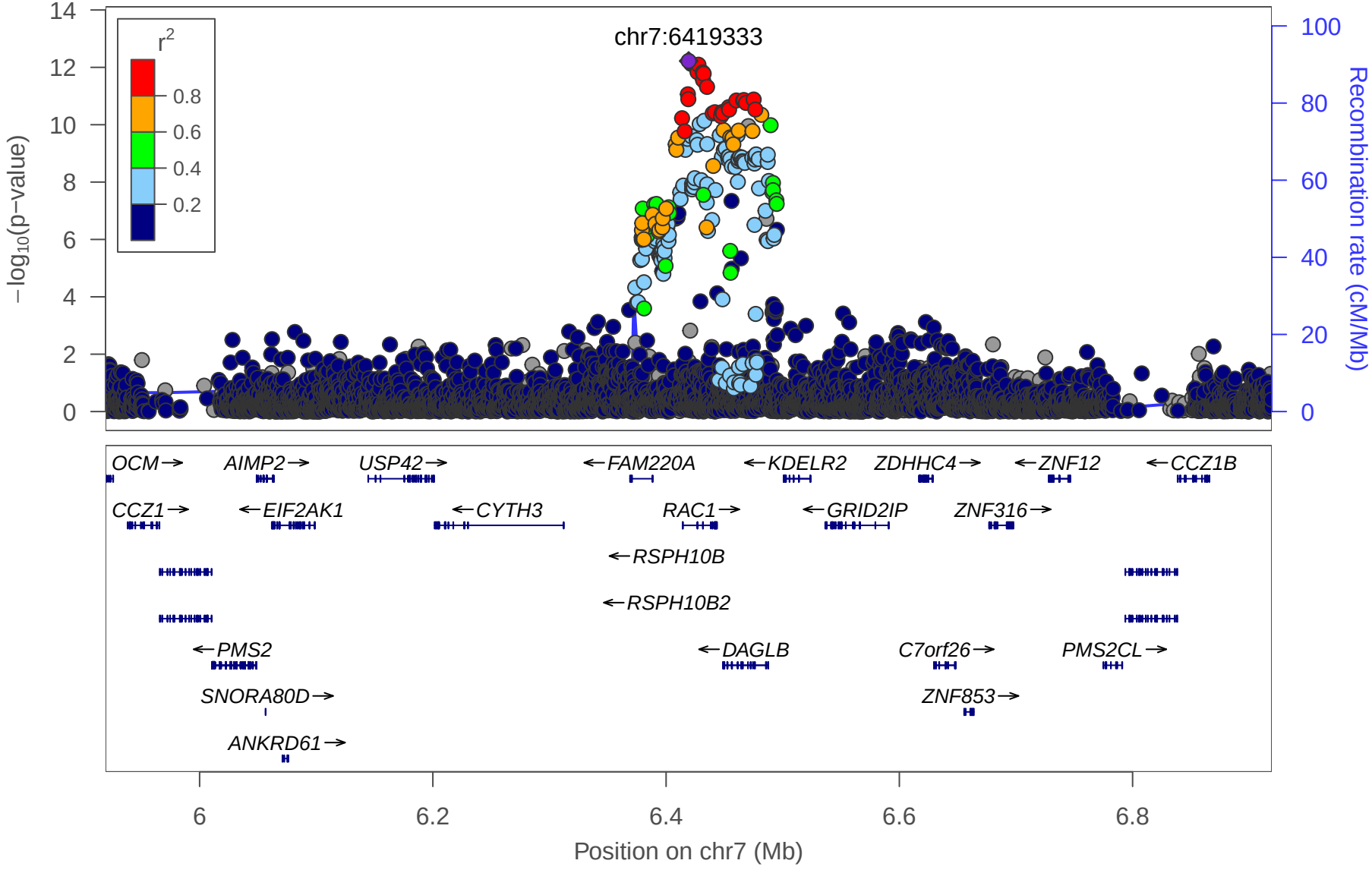

r2
0.8
0.6
0.4
0.2
chr6:139834012
−log10(p−value)
Recombination rate (cM/Mb)
ABRACL
HECA
TXLNB
CITED2
LOC100132735
LINC01625
LOC100507477
LOC103352541
139.4
139.6
139.8
140
140.2
Position on chr6 (Mb)

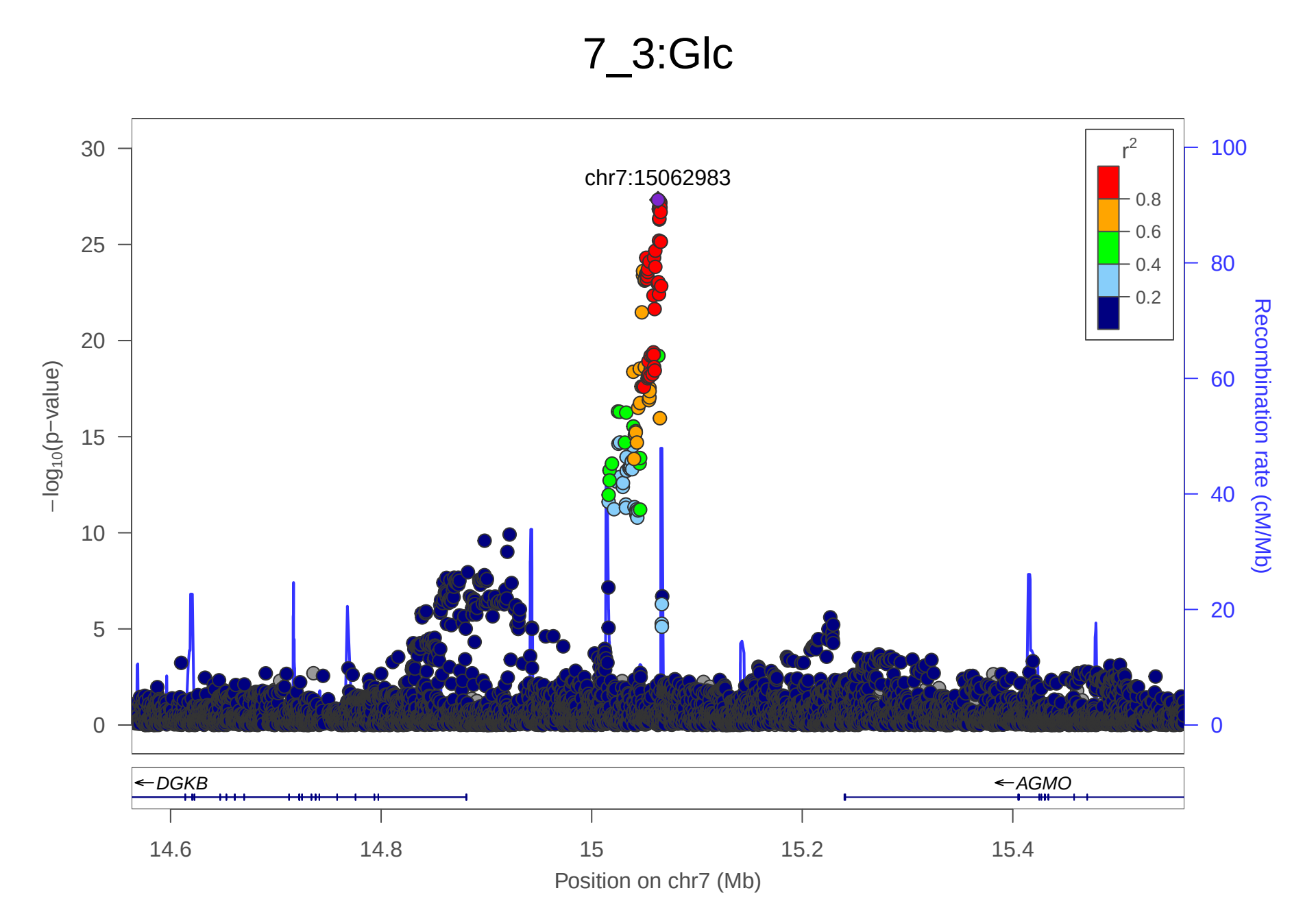

6_18:XXL−VLDL−TG
chr6:161010118
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
IGF2R
SLC22A2
SLC22A3
LPA
PLG
MAP3K4
LOC729603
LPAL2
SLC22A1
Position on chr6 (Mb)

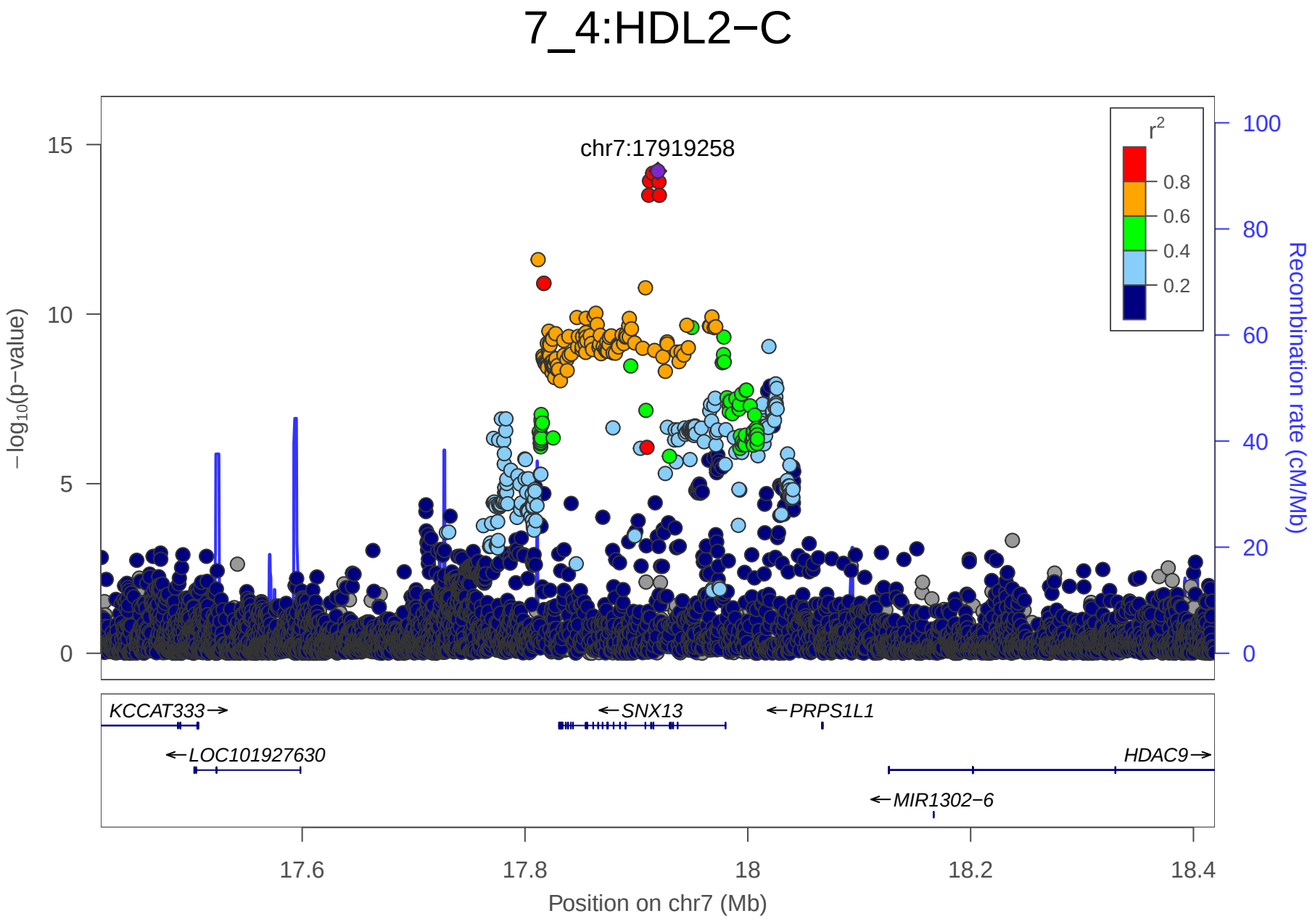
7_1:L−LDL−TG

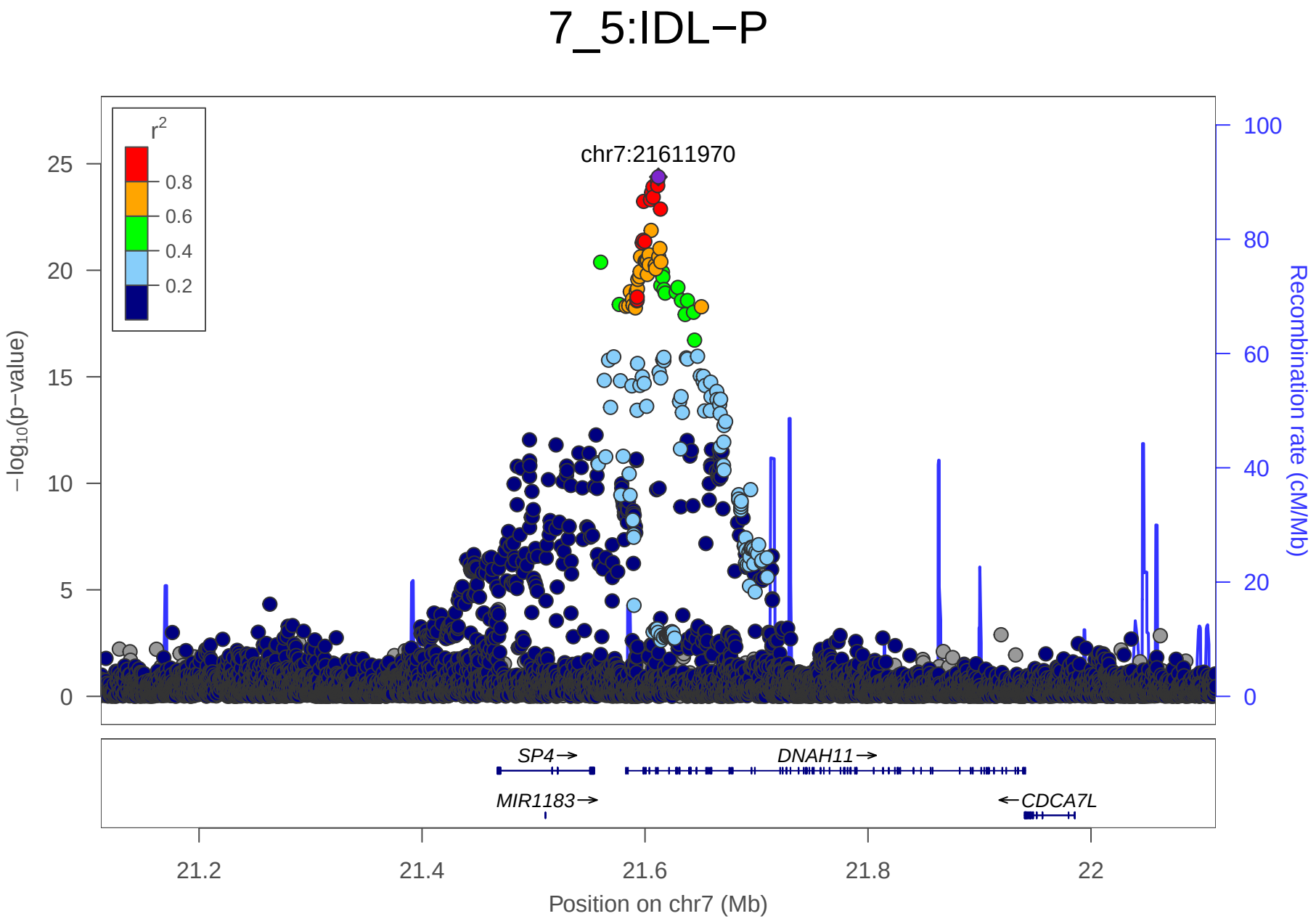

r2
0.8
0.6
0.4
0.2
chr7:1081618
−log10(p−value)
25
20
15
10
5
0
100
80
60
40
20
0
Recombination rate (cM/Mb)
←PRKAR1B
SUN1→
←COX19
GPER1→
UNCX→
←MICALL2
LOC101927000→
GET4→
CYP2W1→
←ZFAND2A
←INTS1
LOC101926963→
←ADAP1
←C7orf50
MAFK→
DNAAF5→
←MIR339
LOC101927021→
GPR146→
0.6
0.8
1
1.2
1.4
Position on chr7 (Mb)

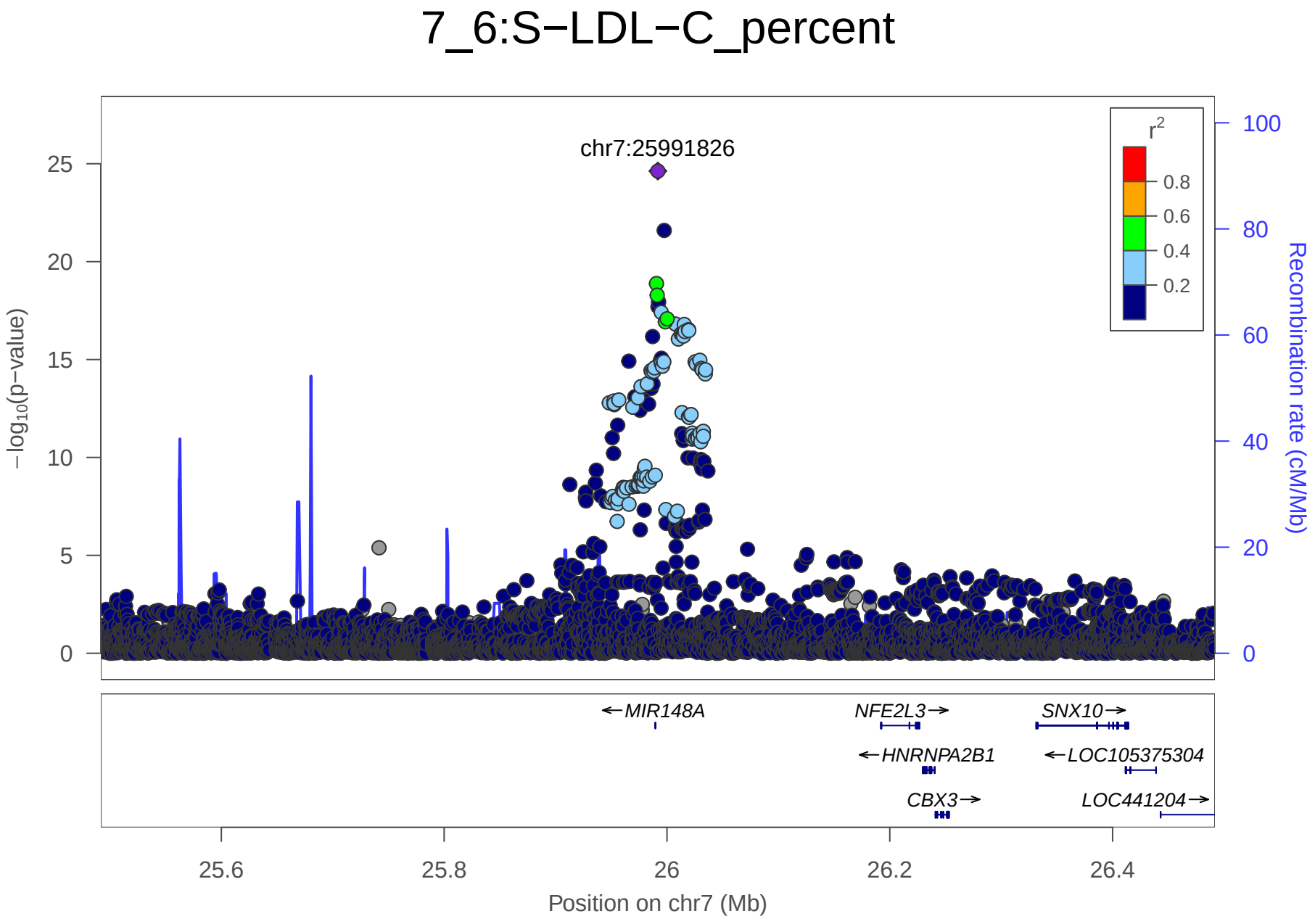
7_2:XL−HDL−CE

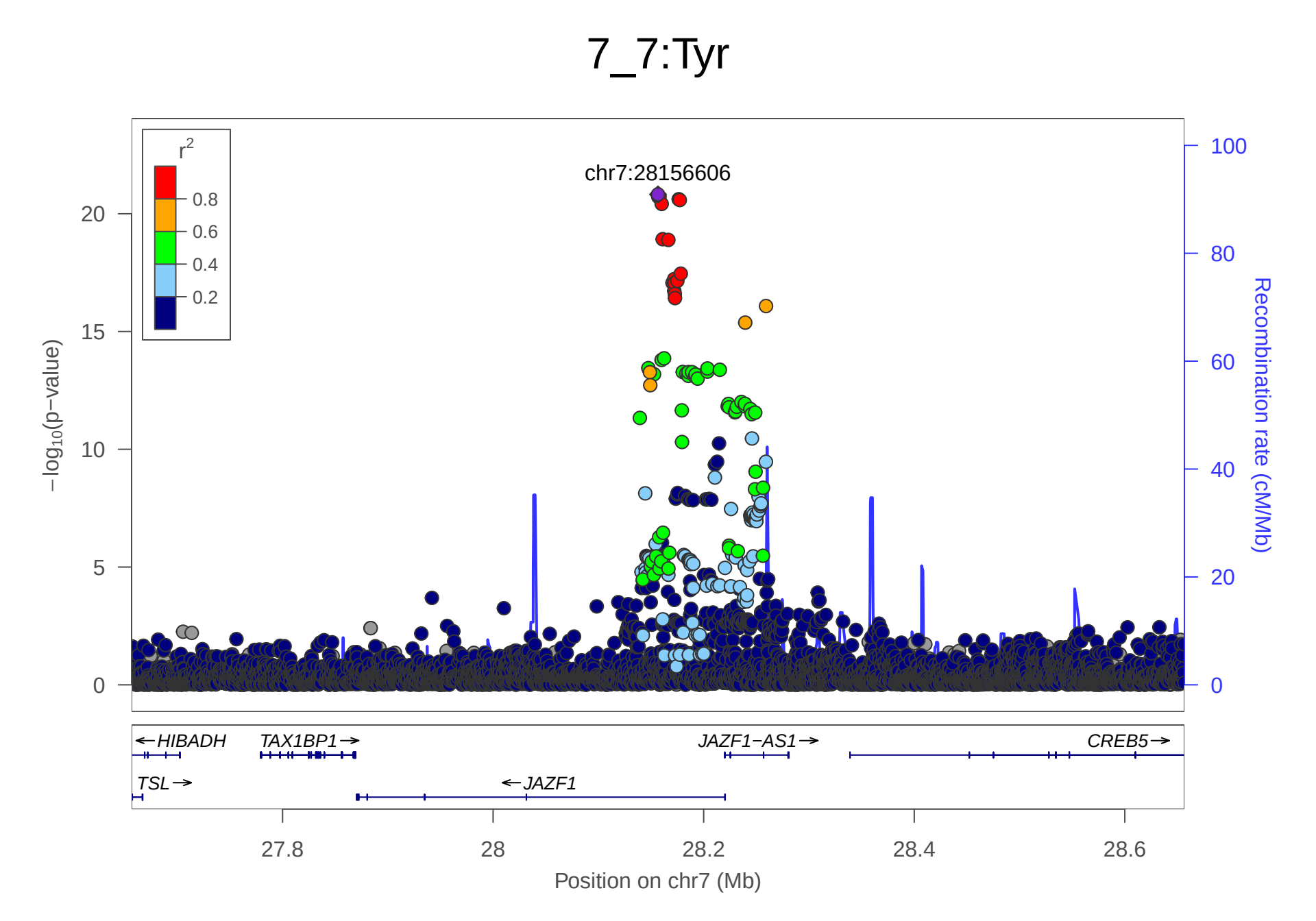

chr7:6419333
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
OCM
AIMP2
USP42
FAM220A
KDELR2
ZDHHC4
ZNF12
CCZ1B
CCZ1
EIF2AK1
CYTH3
RAC1
GRID2IP
ZNF316
RSPH10B
RSPH10B2
PMS2
DAGLB
C7orf26
PMS2CL
SNORA80D
ZNF853
ANKRD61
Position on chr7 (Mb)


7_3:Glc
chr7:15062983
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
30
25
20
15
10
5
0
100
80
60
40
20
0
←DGKB
←AGMO
14.6
14.8
15
15.2
15.4
Position on chr7 (Mb)

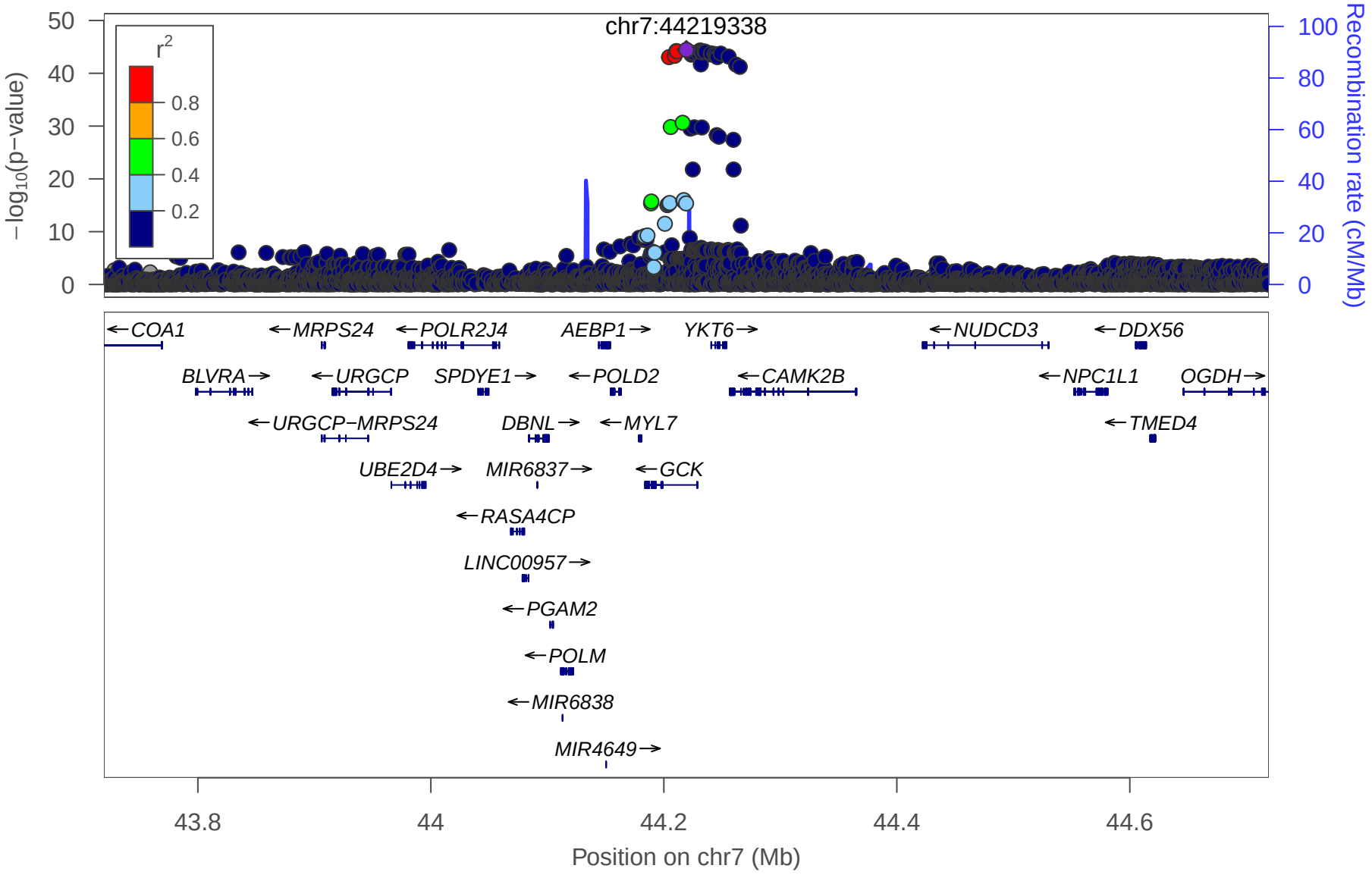

7_4:HDL2−C
chr7:17919258
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
KCCAT333
SNX13
PRPS1L1
LOC101927630
HDAC9
MIR1302−6
17.6
17.8
18
18.2
18.4
Position on chr7 (Mb)

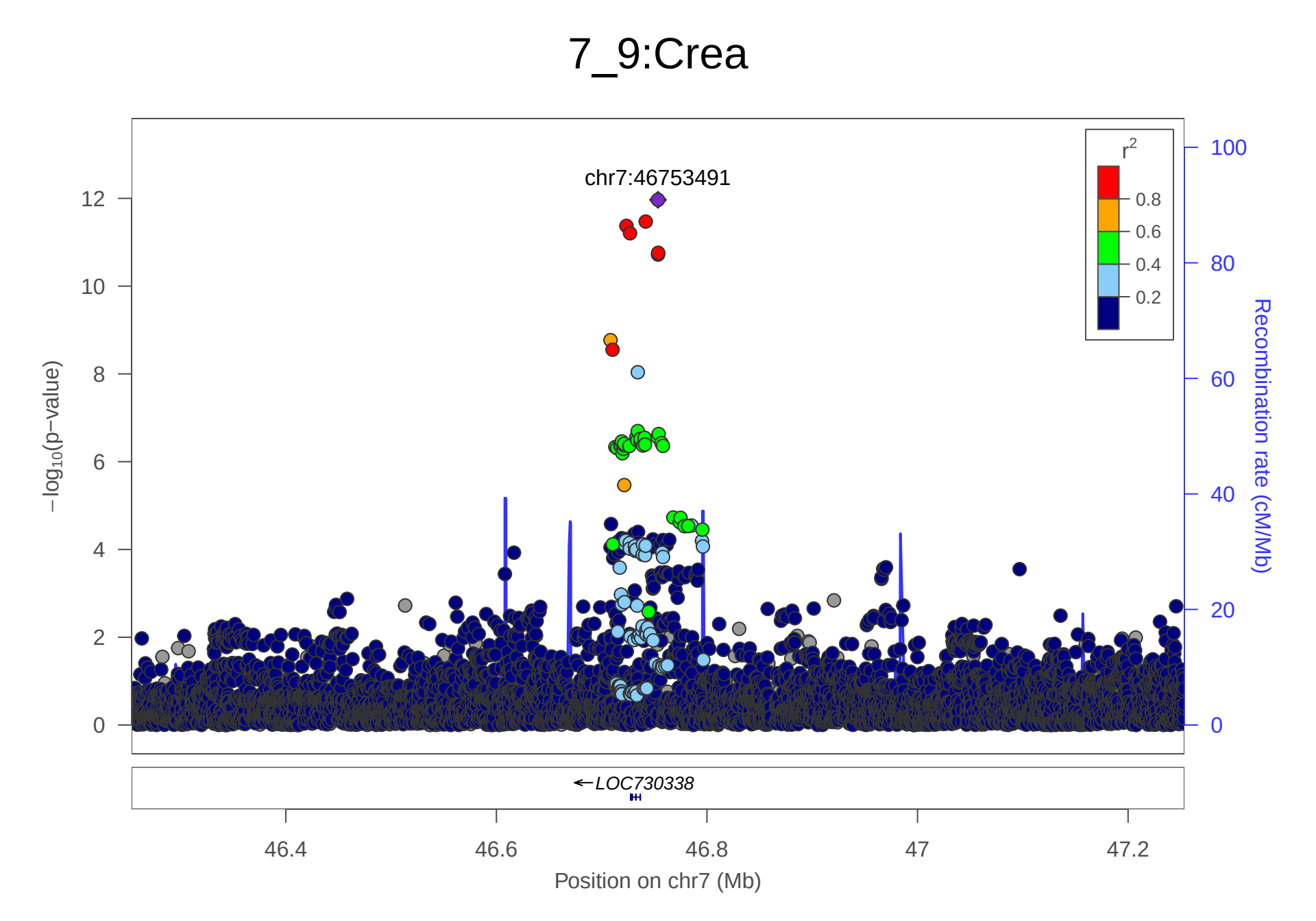

7_5:IDL−P
chr7:21611970
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SP4
DNAH11
MIR1183
CDCA7L
Position on chr7 (Mb)

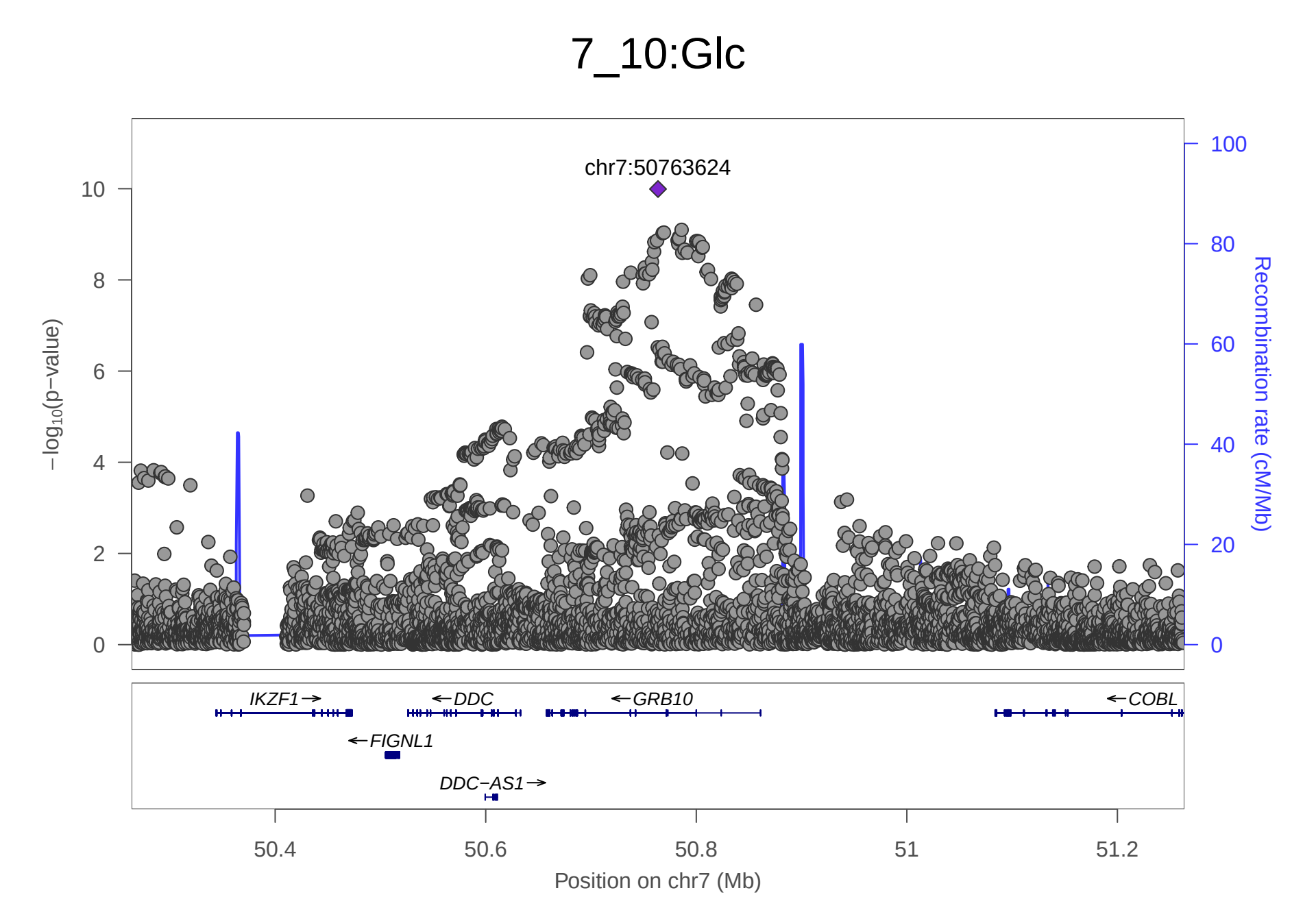

7_6:S−LDL−C_percent
chr7:25991826
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
MIR148A
NFE2L3
SNX10
HNRNPA2B1
LOC105375304
CBX3
LOC441204
Position on chr7 (Mb)


7_7:Tyr
chr7:28156606
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
HIBADH
TAX1BP1
JAZF1−AS1
CREB5
TSL
JAZF1
Position on chr7 (Mb)

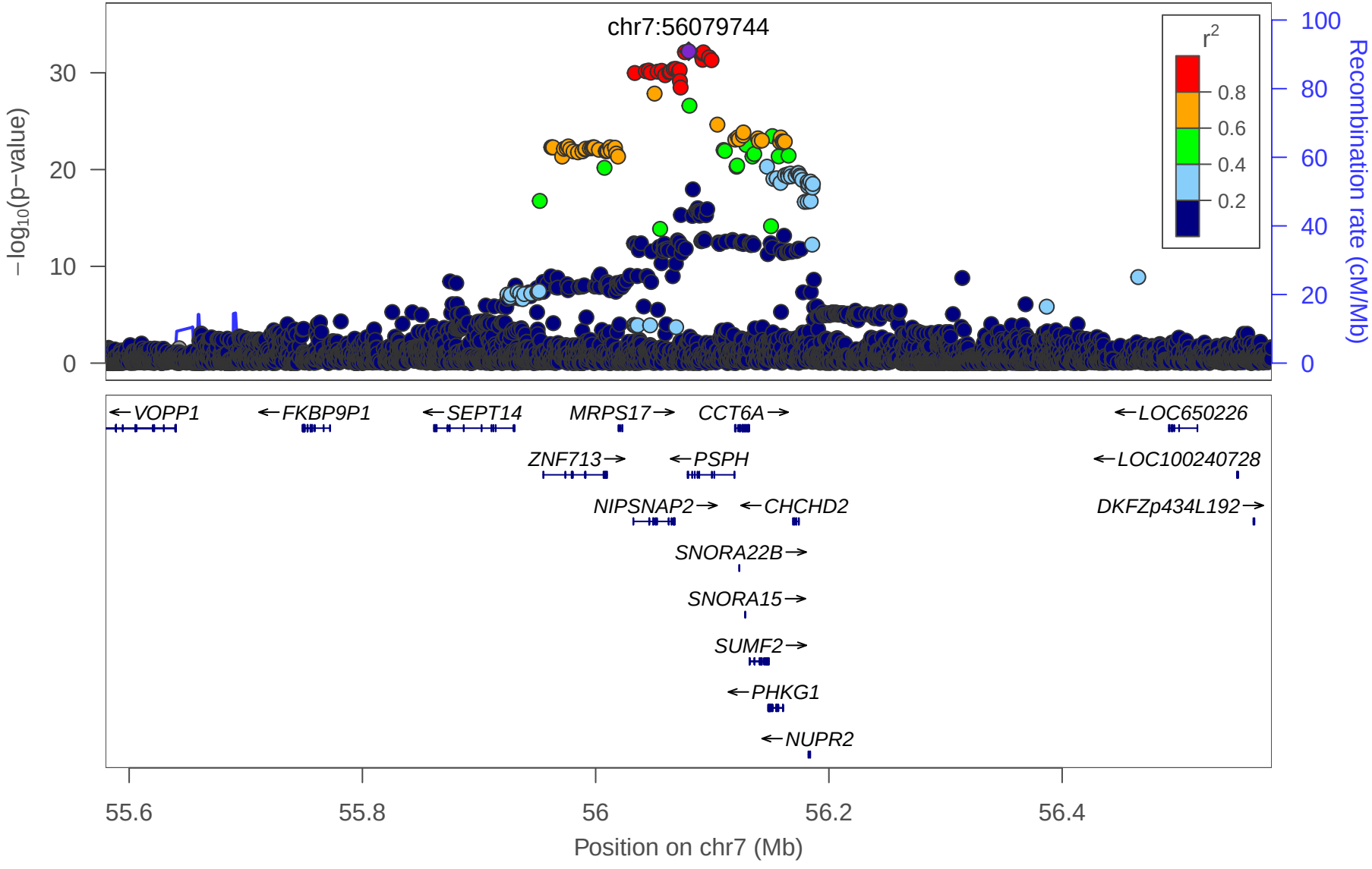
7_8:Glc


chr7:44219338
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
COA1
MRPS24
POLR2J4
AEBP1
YKT6
NUDCD3
DDX56
BLVRA
URGCP
SPDYE1
POLD2
CAMK2B
NPC1L1
OGDH
URGCP−MRPS24
DBNL
MYL7
TMED4
UBE2D4
MIR6837
GCK
RASA4CP
LINC00957
PGAM2
POLM
MIR6838
MIR4649
43.8
44
44.2
44.4
44.6
Position on chr7 (Mb)

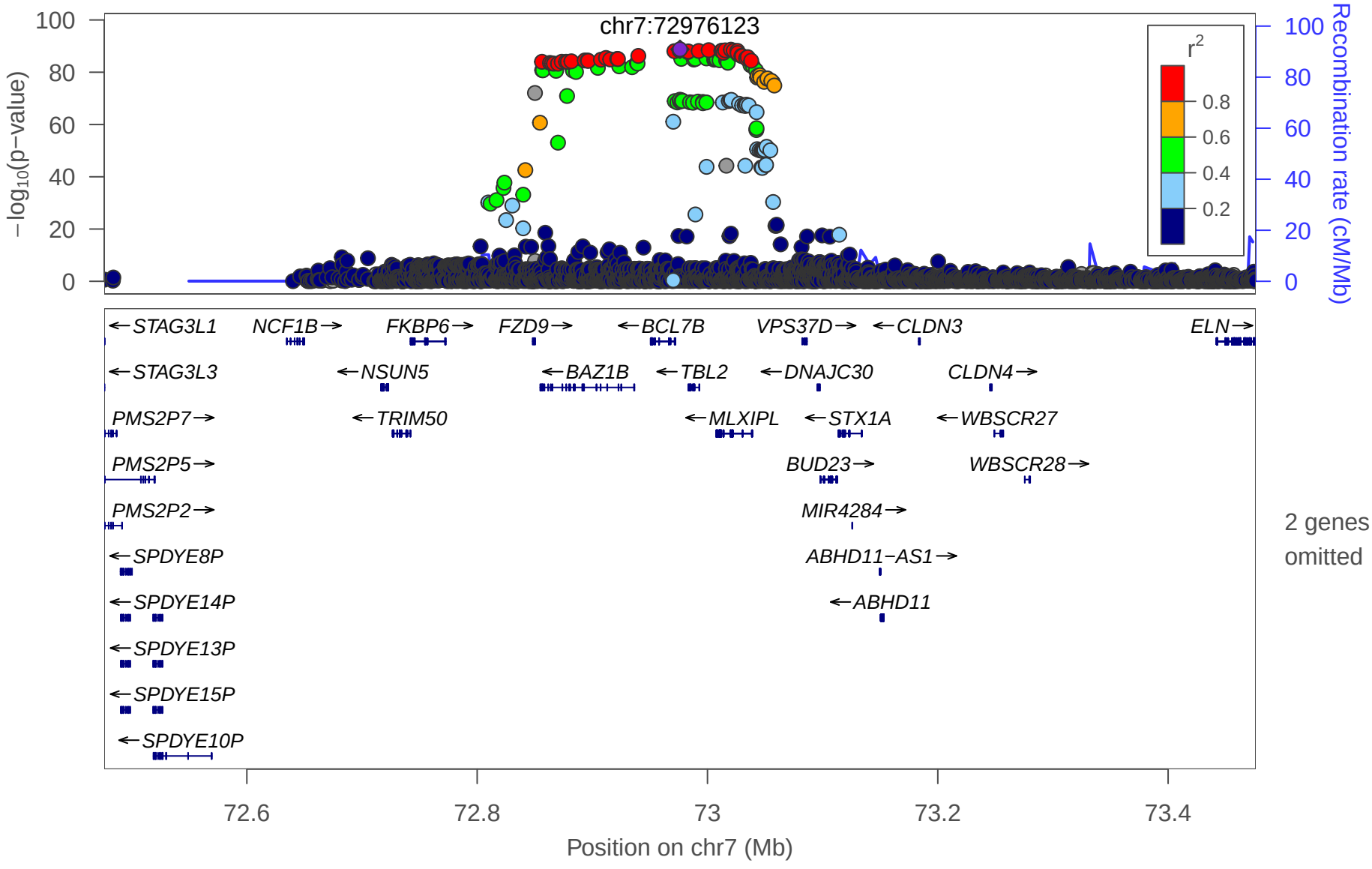

7_9:Crea
chr7:46753491
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
0
2
4
6
8
10
12
0
20
40
60
80
100
←LOC730338
46.4
46.6
46.8
47
47.2
Position on chr7 (Mb)

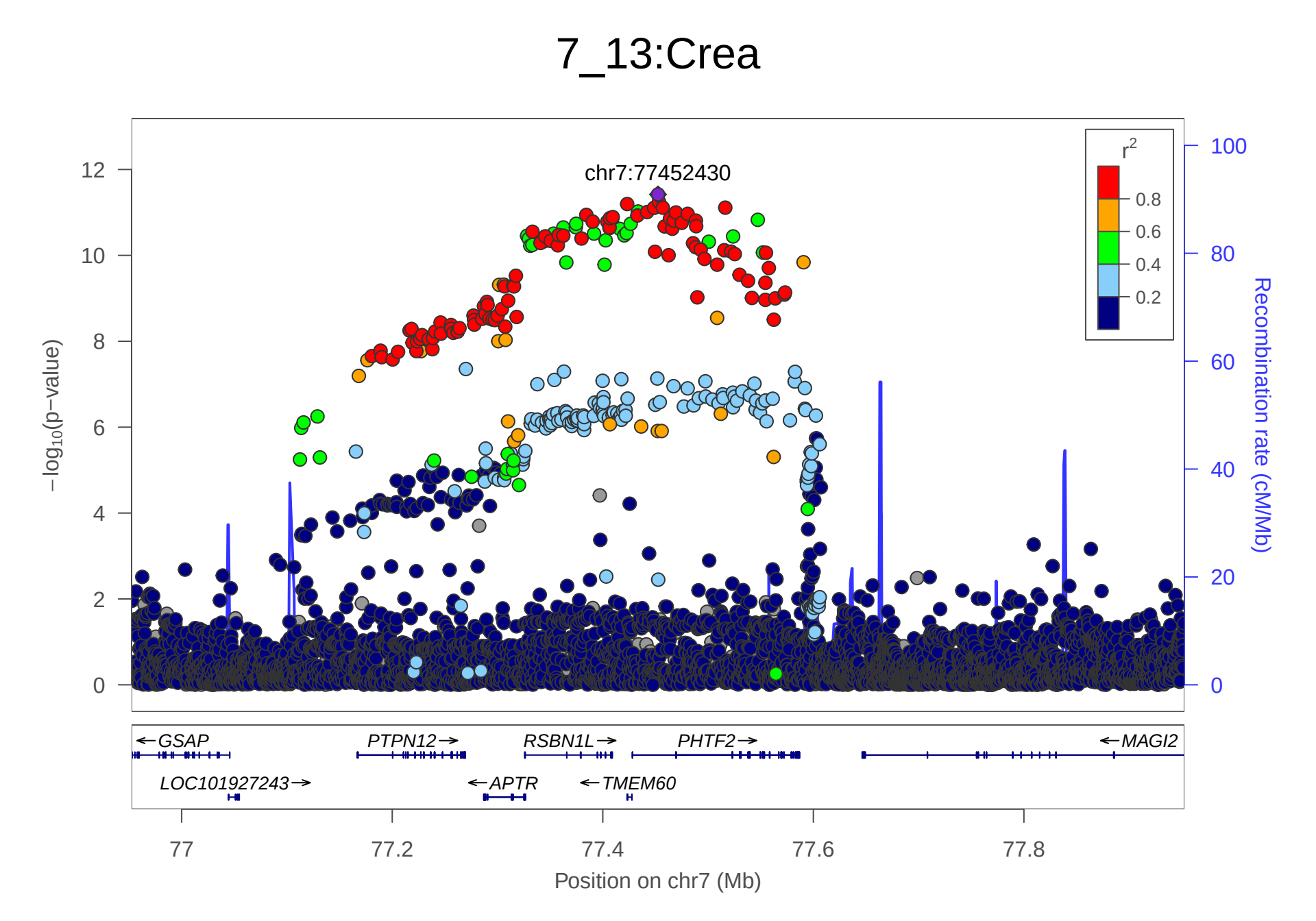

7_10:Glc
chr7:50763624
10
8
6
4
2
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
IKZF1→
←DDC
←GRB10
←COBL
←FIGNL1
DDC−AS1→
50.4
50.6
50.8
51
51.2
Position on chr7 (Mb)

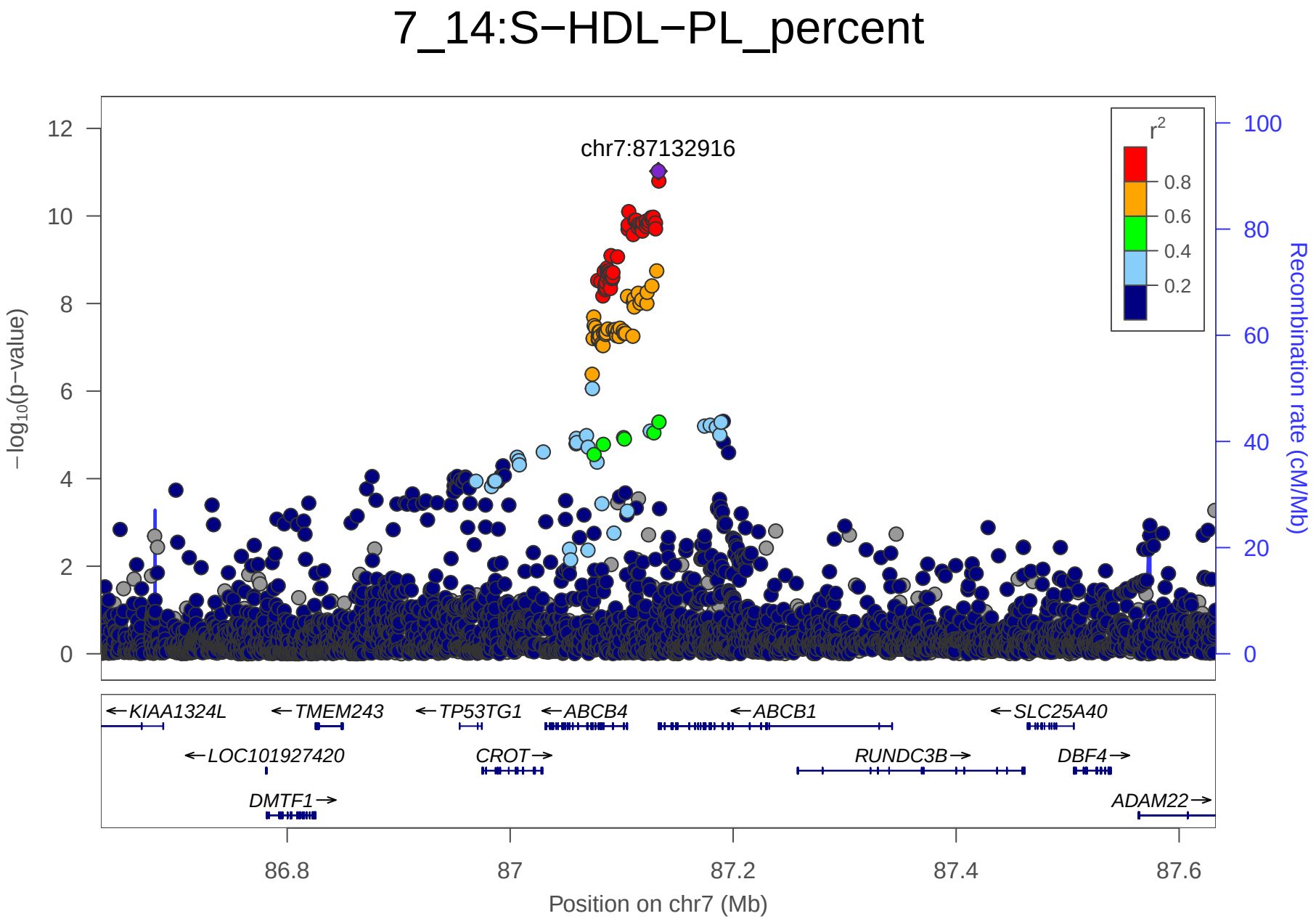
7_11:Gly

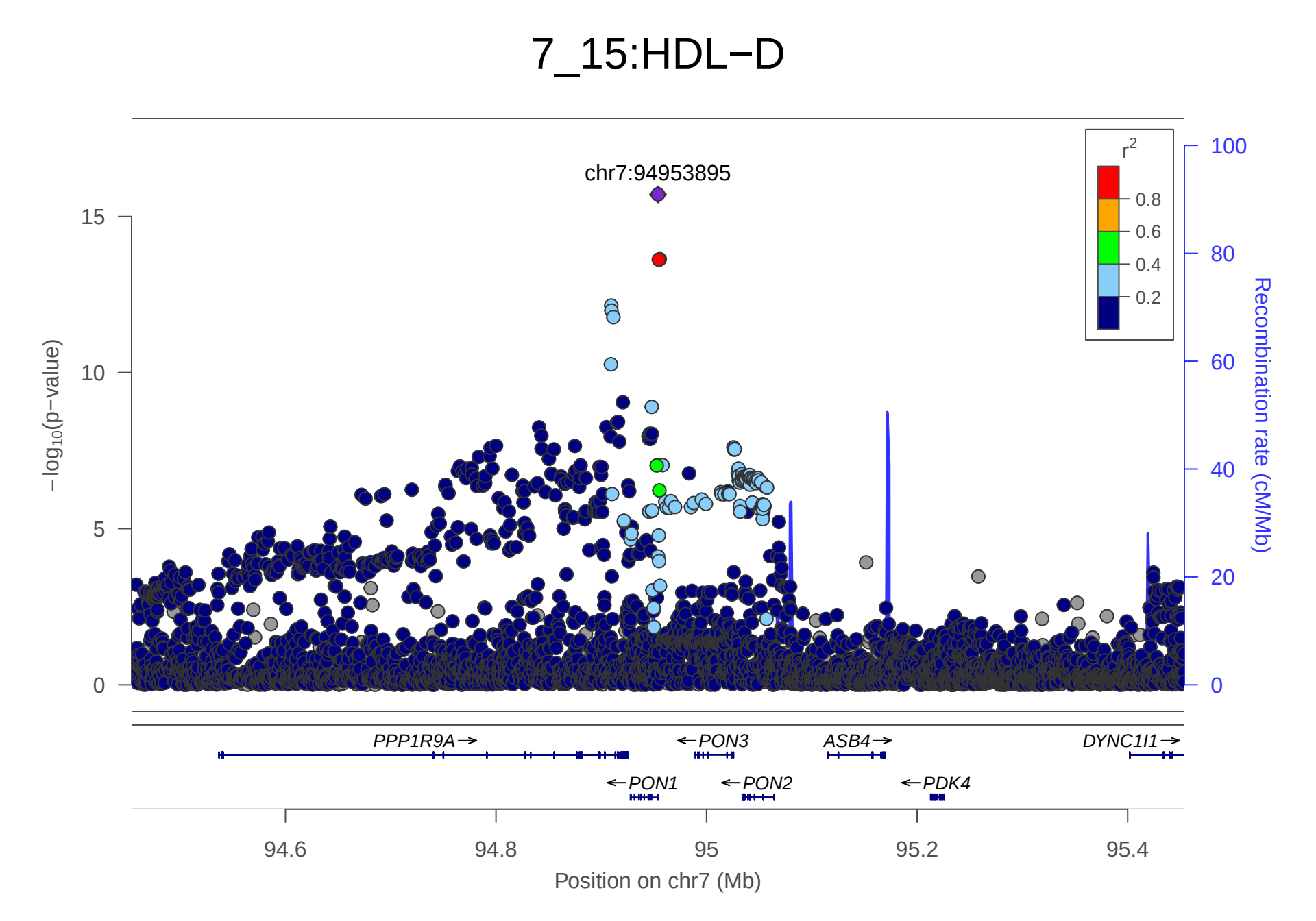

chr7:56079744
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
VOPP1
FKBP9P1
SEPT14
MRPS17
CCT6A
LOC650226
ZNF713
PSPH
LOC100240728
NIPSNAP2
CHCHD2
DKFZp434L192
SNORA22B
SNORA15
SUMF2
PHKG1
NUPR2
Position on chr7 (Mb)

7_12:S−VLDL−TG

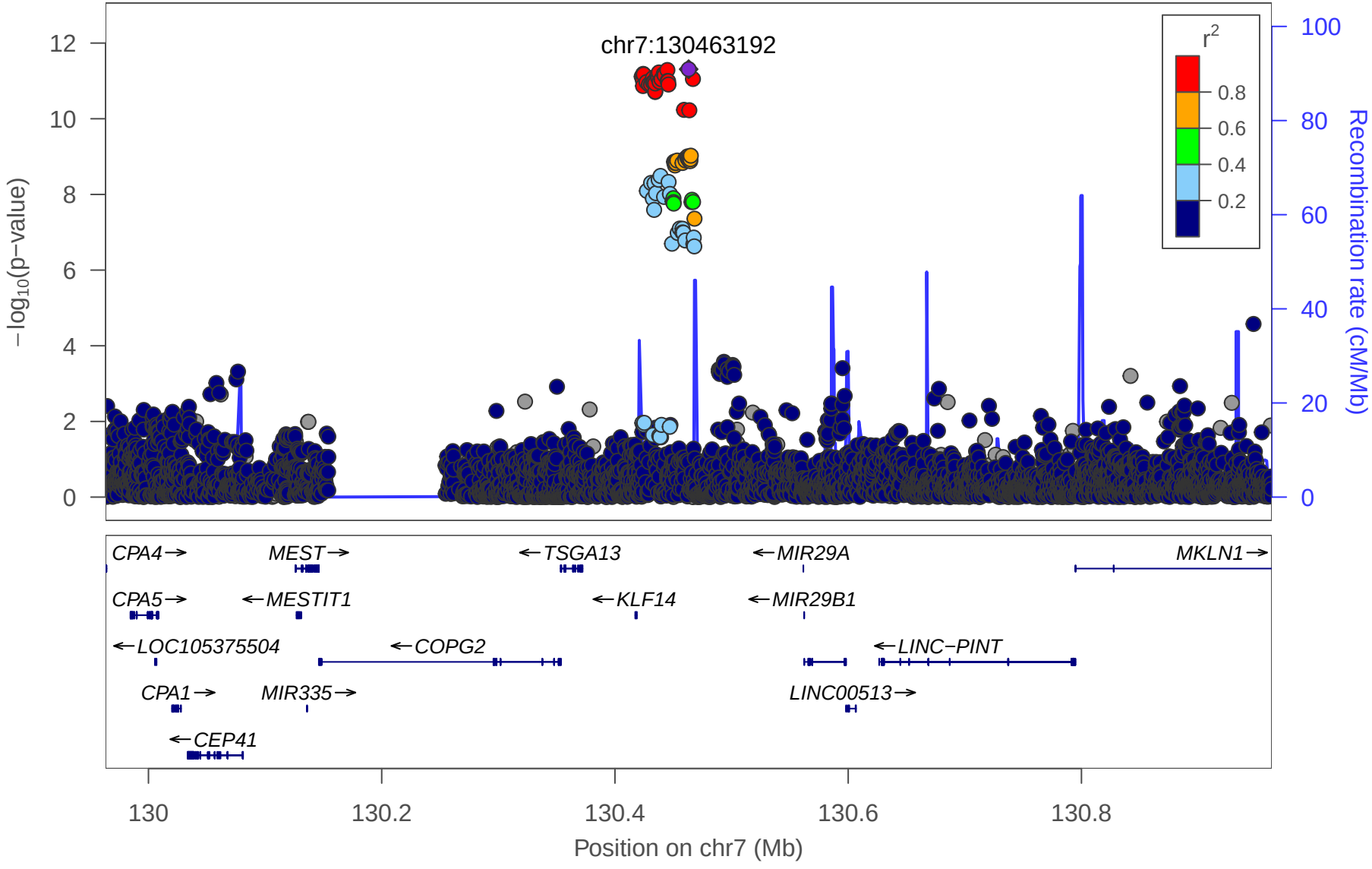

chr7:72976123
−log10(p−value)
Recombination rate (cM/Mb)
r2
0.8
0.6
0.4
0.2
STAG3L1
NCF1B
FKBP6
FZD9
BCL7B
VPS37D
CLDN3
ELN
STAG3L3
NSUN5
BAZ1B
TBL2
DNAJC30
CLDN4
PMS2P7
TRIM50
MLXIPL
STX1A
WBSCR27
PMS2P5
BUD23
WBSCR28
PMS2P2
MIR4284
SPDYE8P
ABHD11−AS1
SPDYE14P
ABHD11
SPDYE13P
SPDYE15P
SPDYE10P
2 genes omitted
72.6
72.8
73
73.2
73.4
Position on chr7 (Mb)


7_13:Crea
chr7:77452430
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
GSAP
PTPN12
RSBN1L
PHTF2
MAGI2
LOC101927243
APTR
TMEM60
Position on chr7 (Mb)

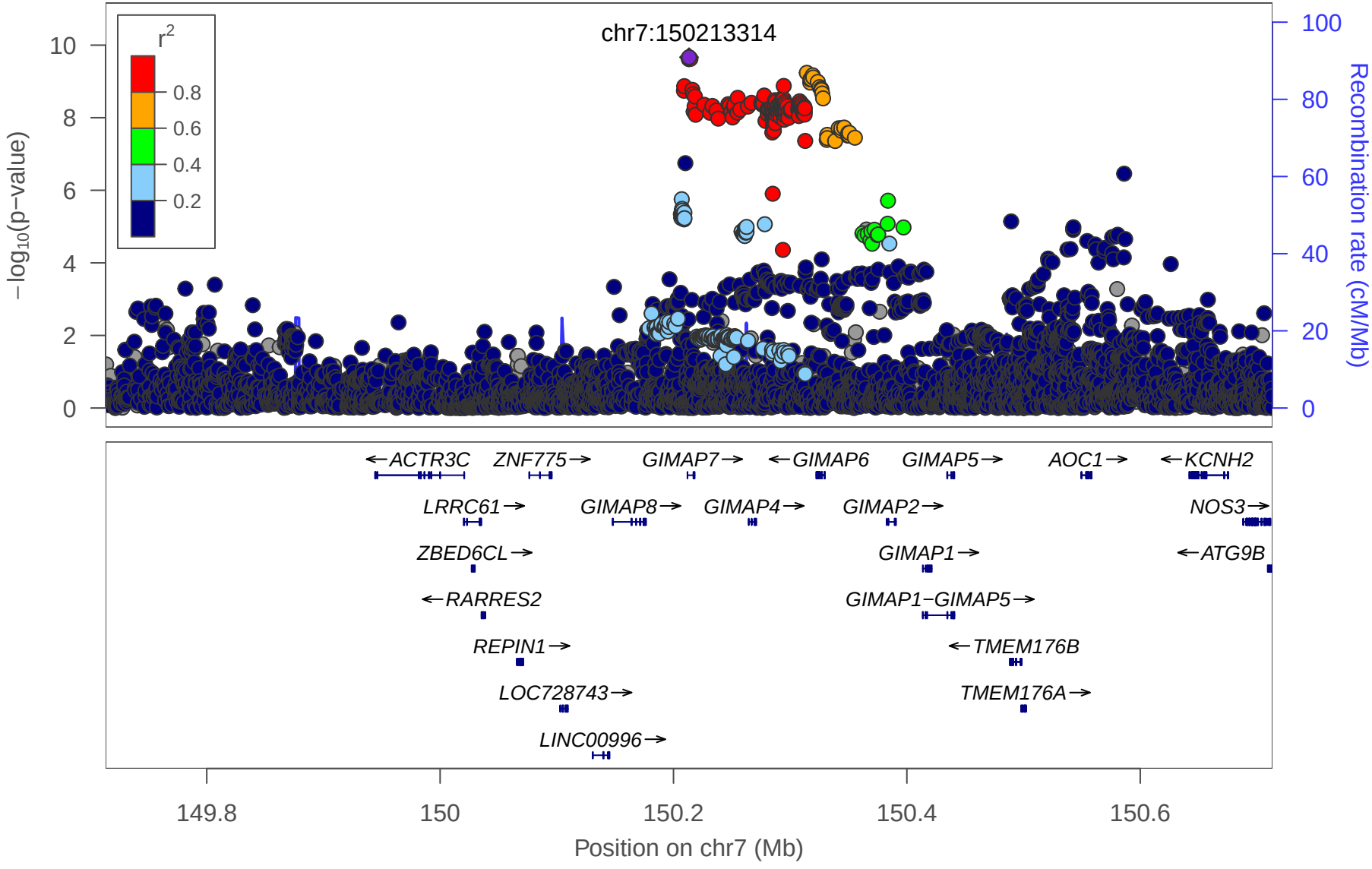

7_14:S−HDL−PL_percent
chr7:87132916
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
KIAA1324L
TMEM243
TP53TG1
ABCB4
ABCB1
SLC25A40
LOC101927420
CROT
RUNDC3B
DBF4
DMTF1
ADAM22
Position on chr7 (Mb)

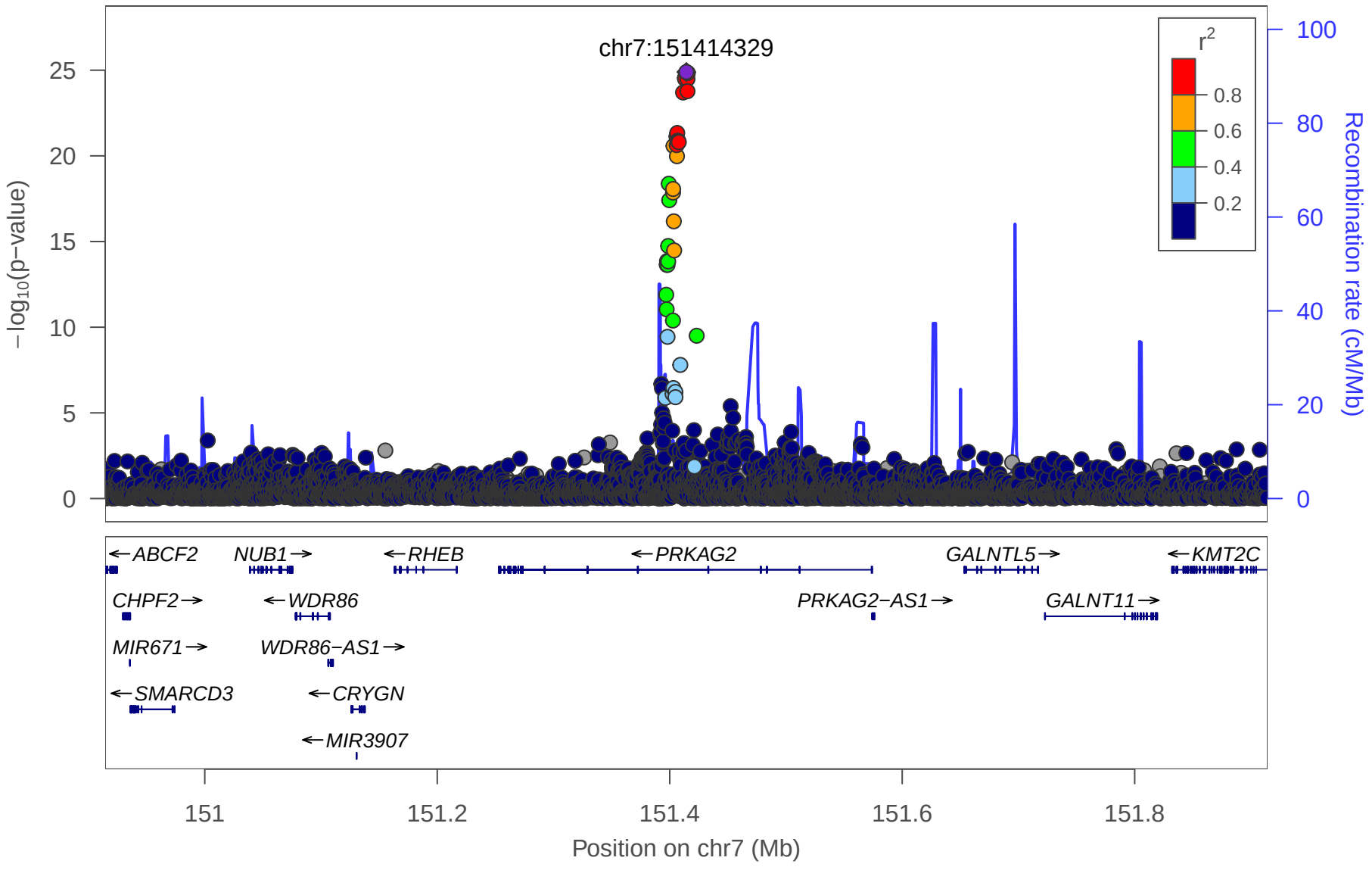

7_15:HDL−D
chr7:94953895
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
0
5
10
15
0
20
40
60
80
100
PPP1R9A
PON3
ASB4
DYNC1I1
PON1
PON2
PDK4
94.6
94.8
95
95.2
95.4
Position on chr7 (Mb)

7_16:ApoBbyApoA1

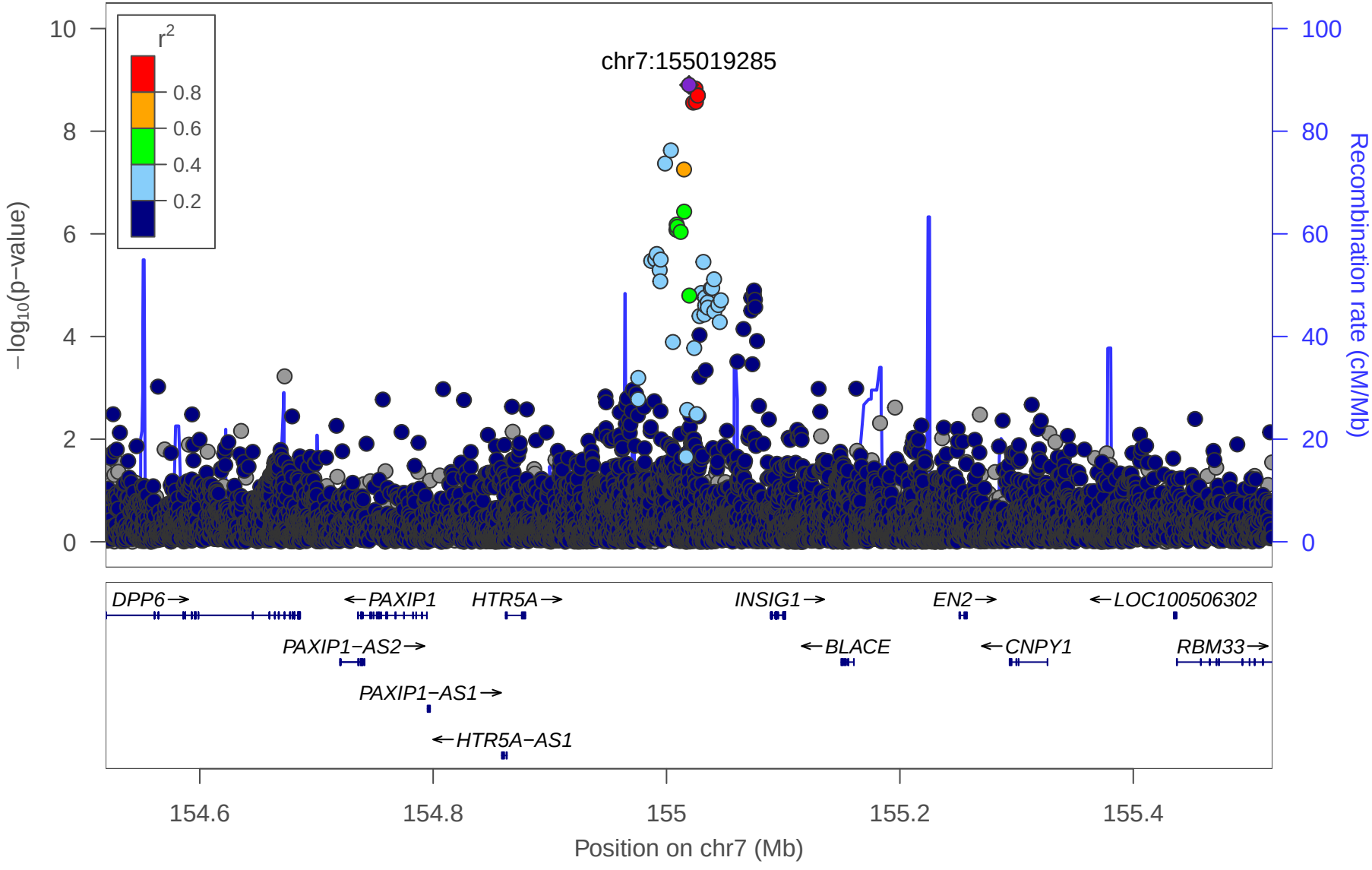


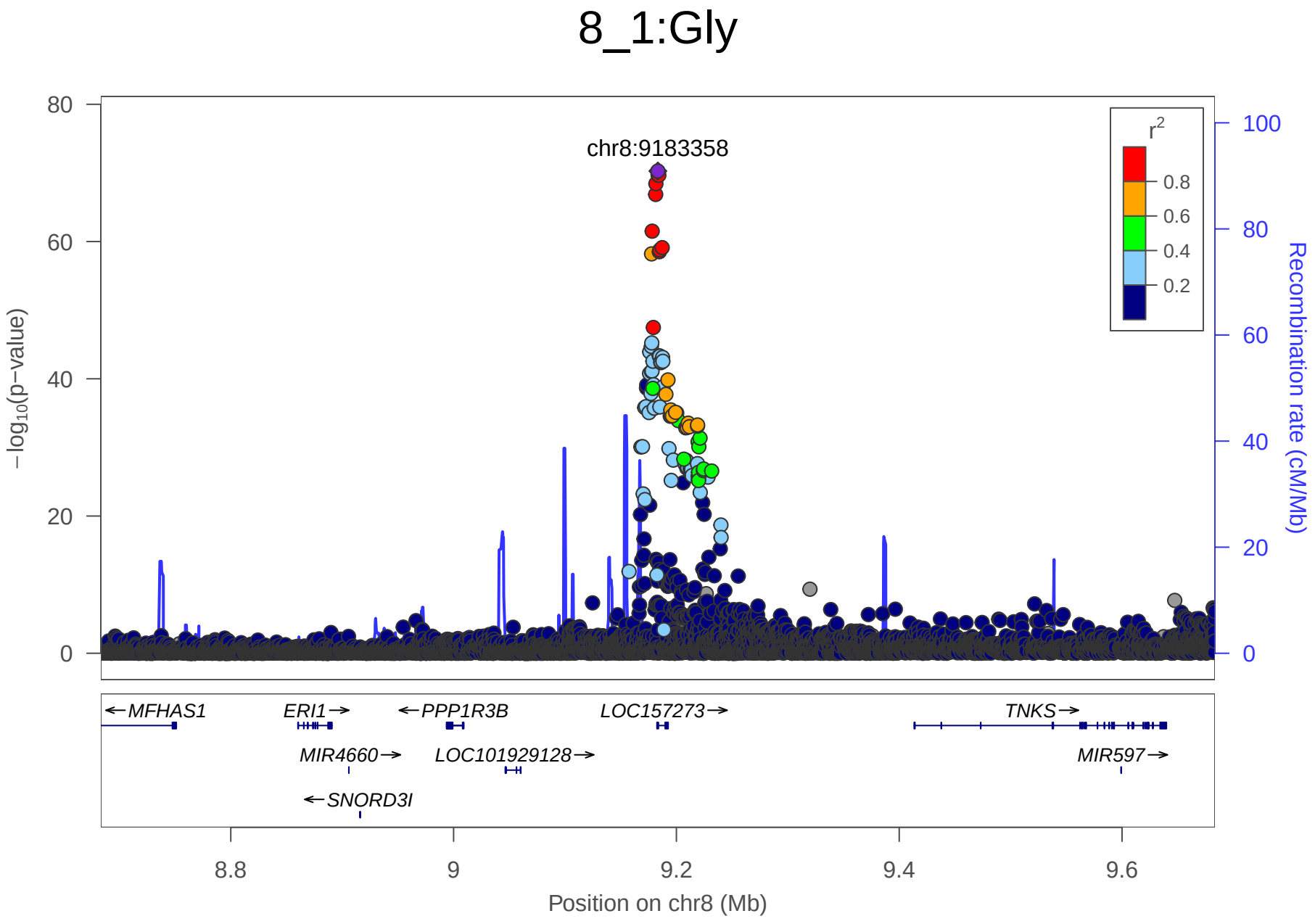
7_17:L−HDL−PL

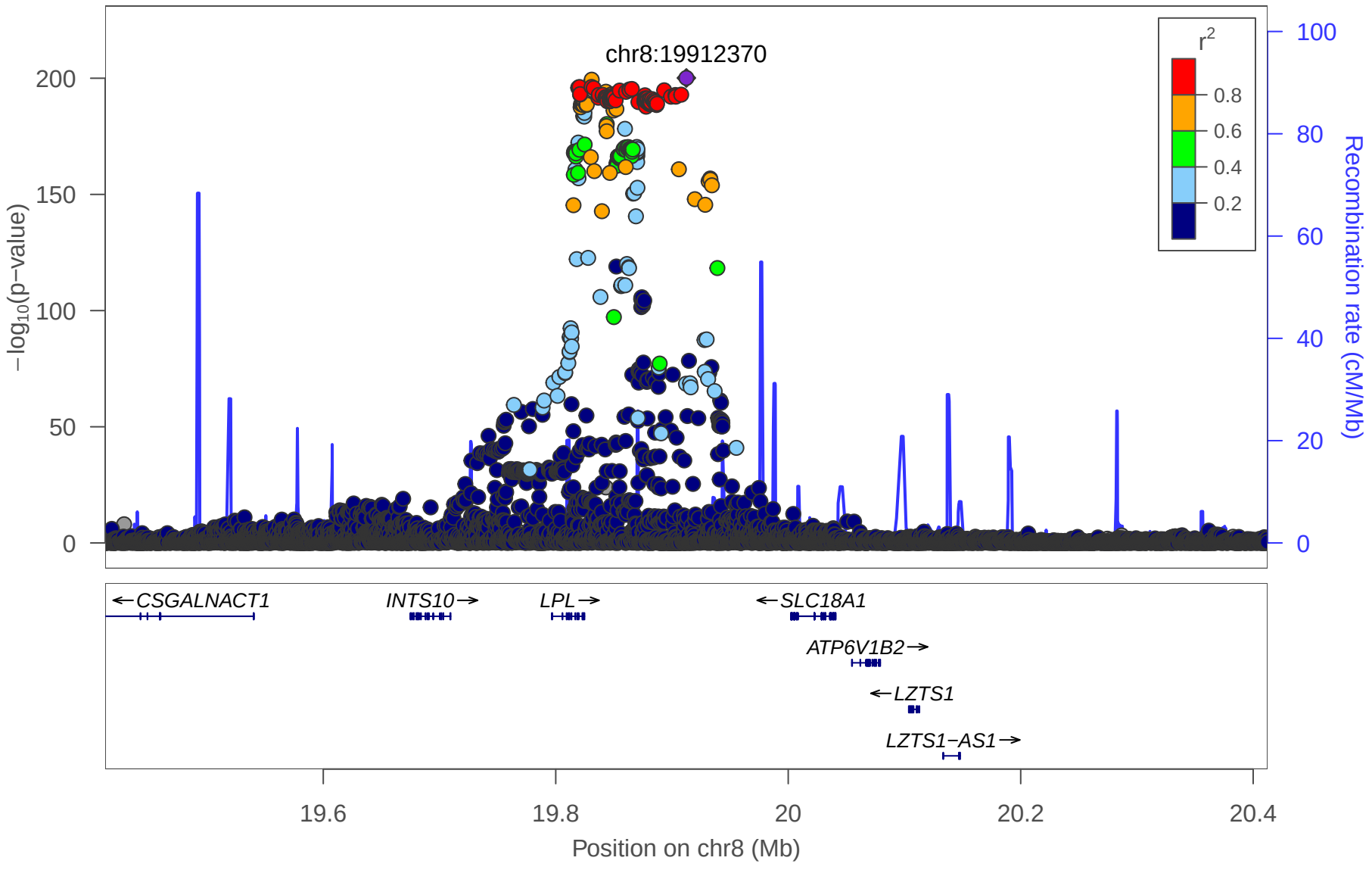

chr7:150213314
r²
0.8
0.6
0.4
0.2
−log₁₀(p−value)
Recombination rate (cM/Mb)
ACTR3C
ZNF775
GIMAP7
GIMAP6
GIMAP5
AOC1
KCNH2
LRRC61
GIMAP8
GIMAP4
GIMAP2
NOS3
ZBED6CL
GIMAP1
ATG9B
RARRES2
GIMAP1−GIMAP5
REPIN1
TMEM176B
LOC728743
TMEM176A
LINC00996
149.8
150
150.2
150.4
150.6
Position on chr7 (Mb)

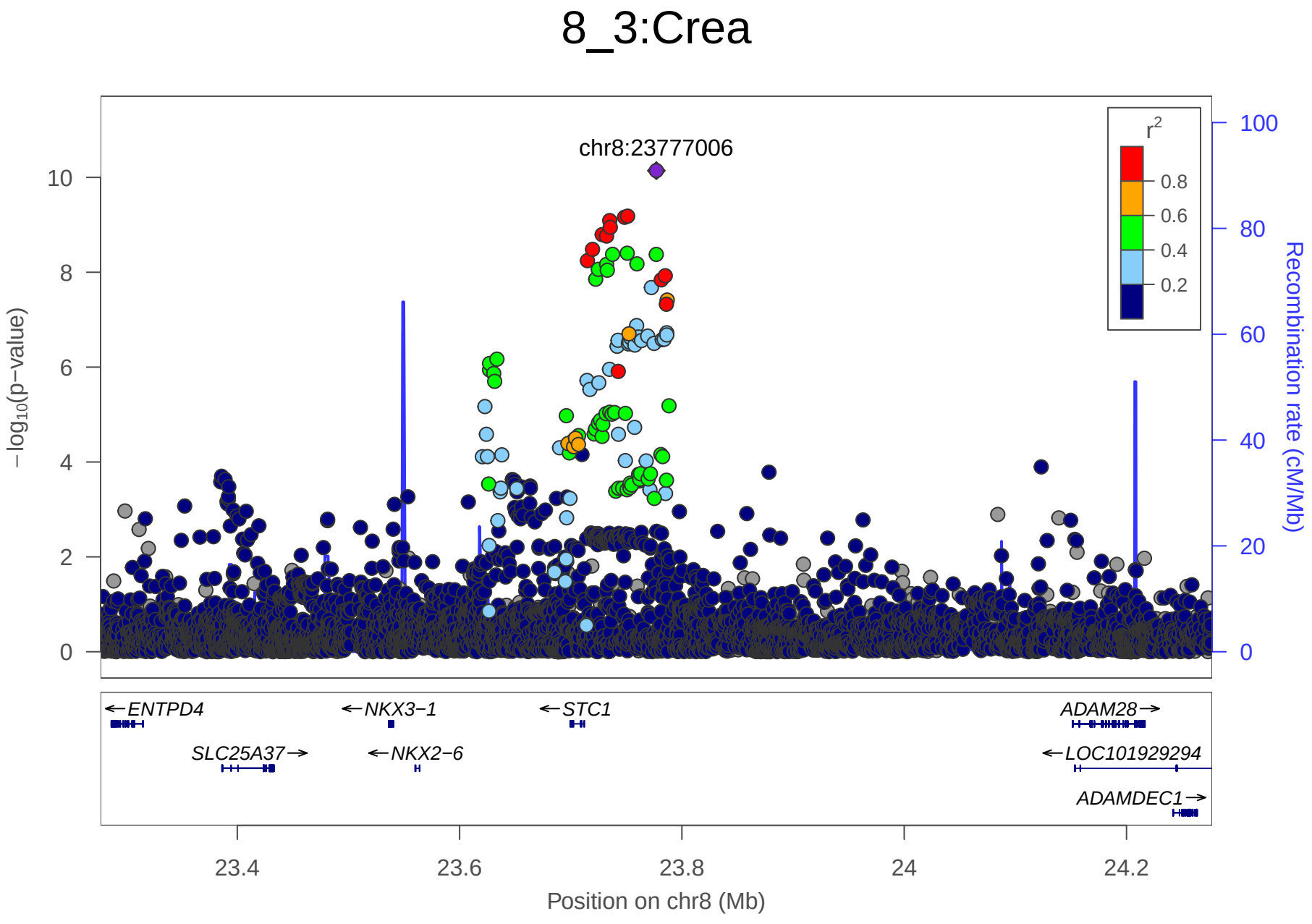

7_18:Crea
chr7:151414329
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
25
20
15
10
5
0
100
80
60
40
20
0
ABCF2
NUB1
RHEB
PRKAG2
GALNTL5
KMT2C
CHPF2
WDR86
PRKAG2−AS1
GALNT11
MIR671
WDR86−AS1
SMARCD3
CRYGN
MIR3907
151
151.2
151.4
151.6
151.8
Position on chr7 (Mb)

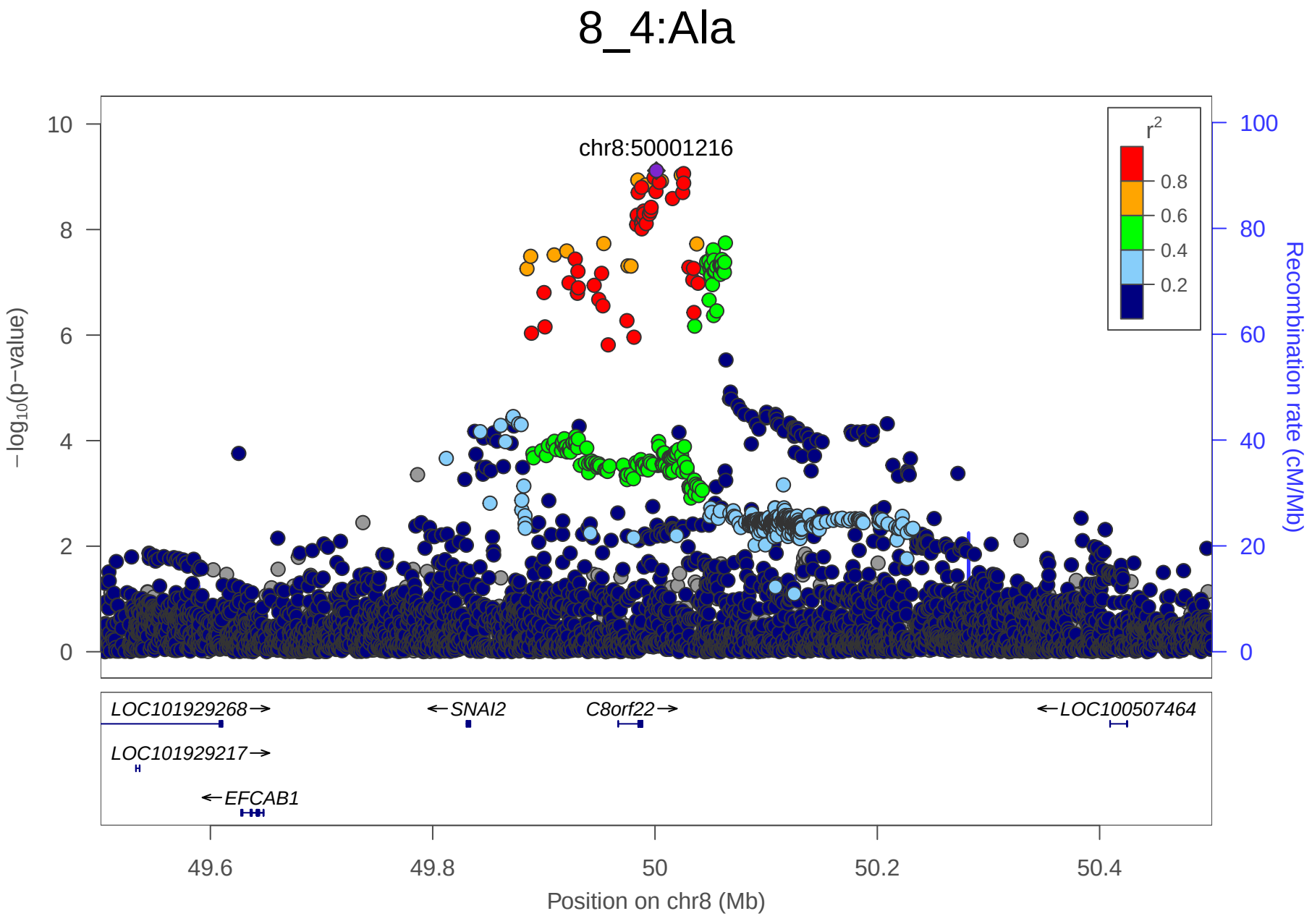
7_19:DHA

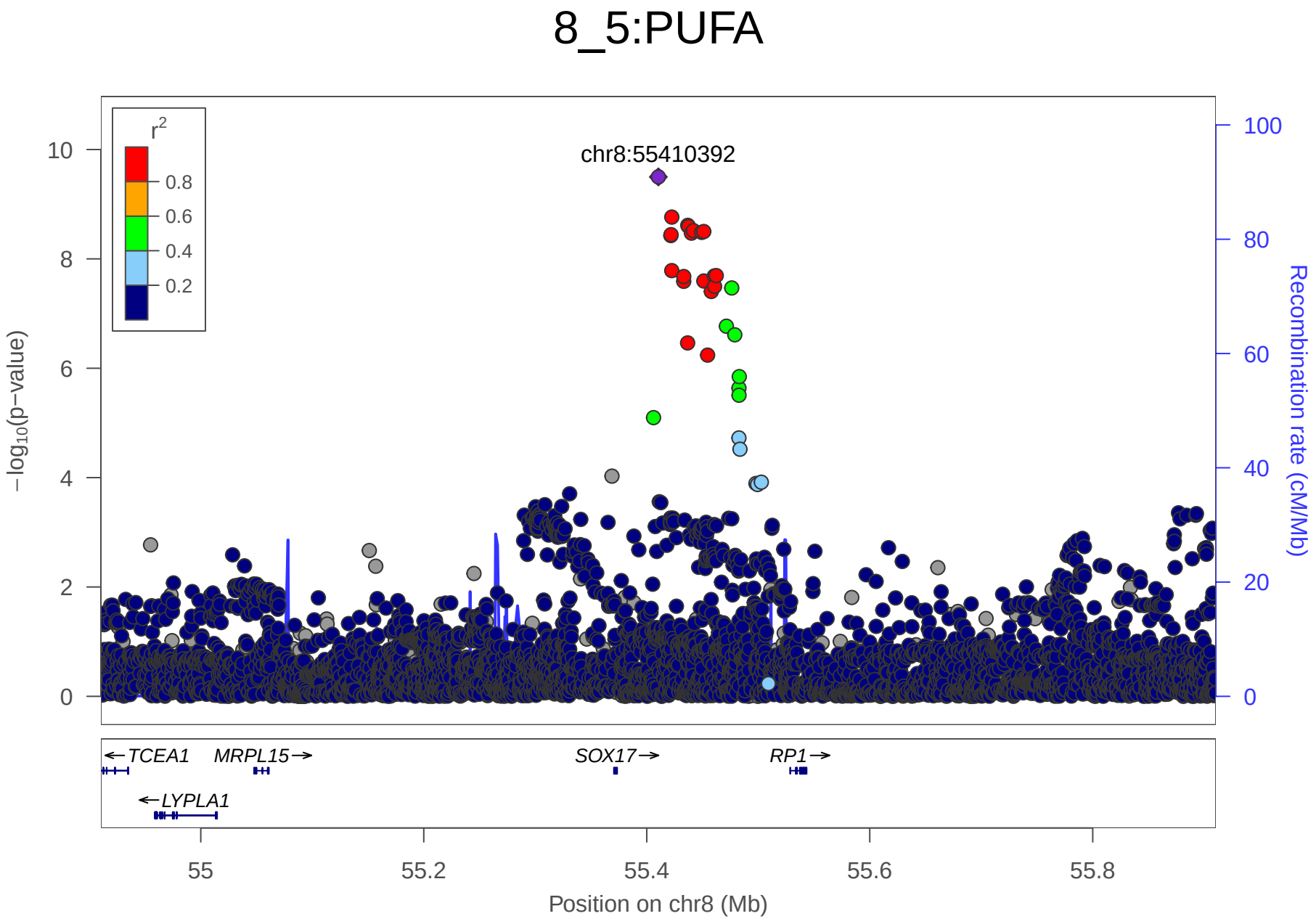

chr7:155019285
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DPP6
PAXIP1
HTR5A
INSIG1
EN2
LOC100506302
PAXIP1−AS2
BLACE
CNPY1
RBM33
PAXIP1−AS1
HTR5A−AS1
154.6
154.8
155
155.2
155.4
Position on chr7 (Mb)

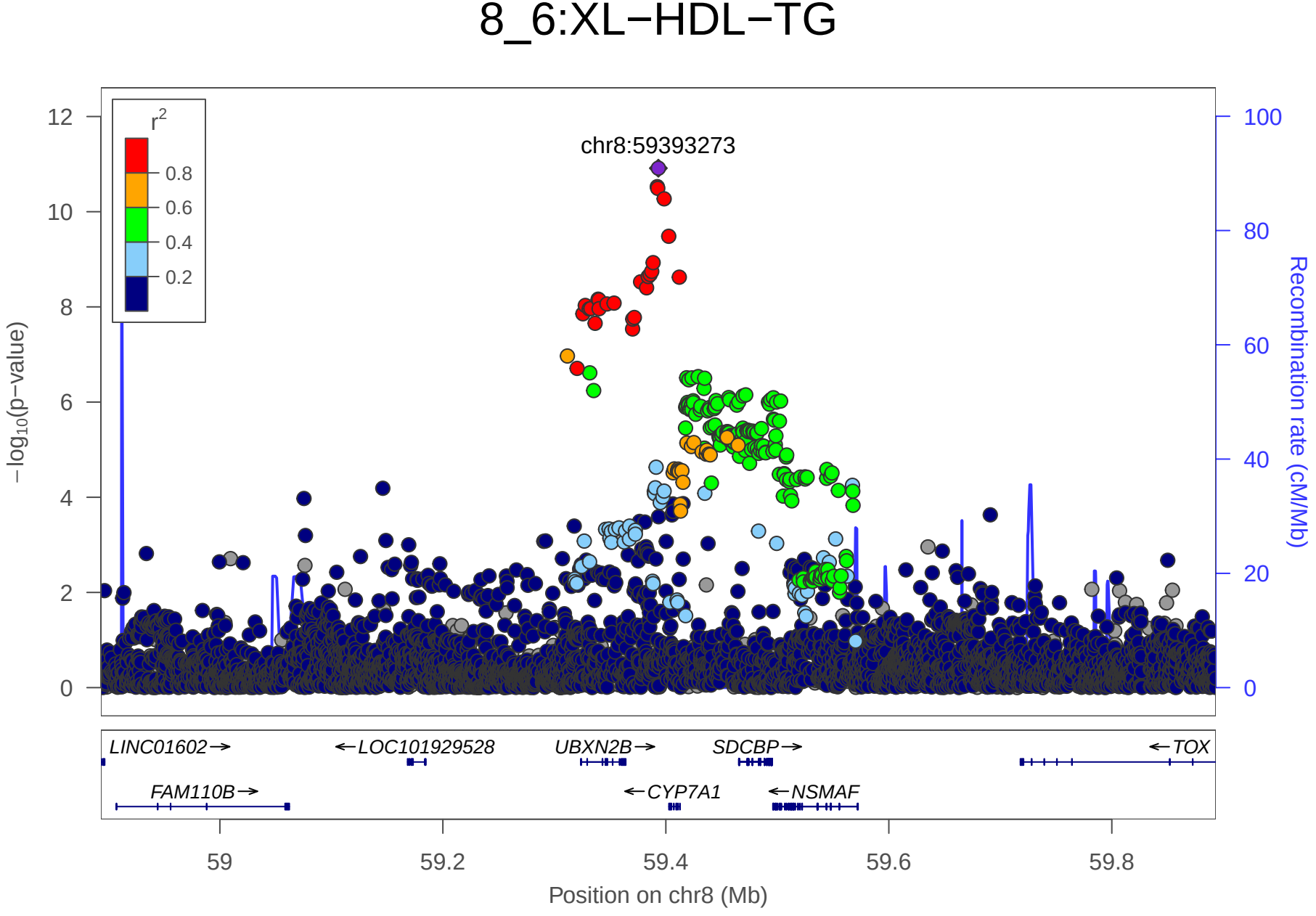

8_1:Gly
chr8:9183358
r2
0.8
0.6
0.4
0.2
80
60
40
20
0
100
80
60
40
20
0
−log10(p−value)
Recombination rate (cM/Mb)
MFHAS1
ERI1
PPP1R3B
LOC157273
TNKS
MIR4660
LOC101929128
MIR597
SNORD3I
8.8
9
9.2
9.4
9.6
Position on chr8 (Mb)

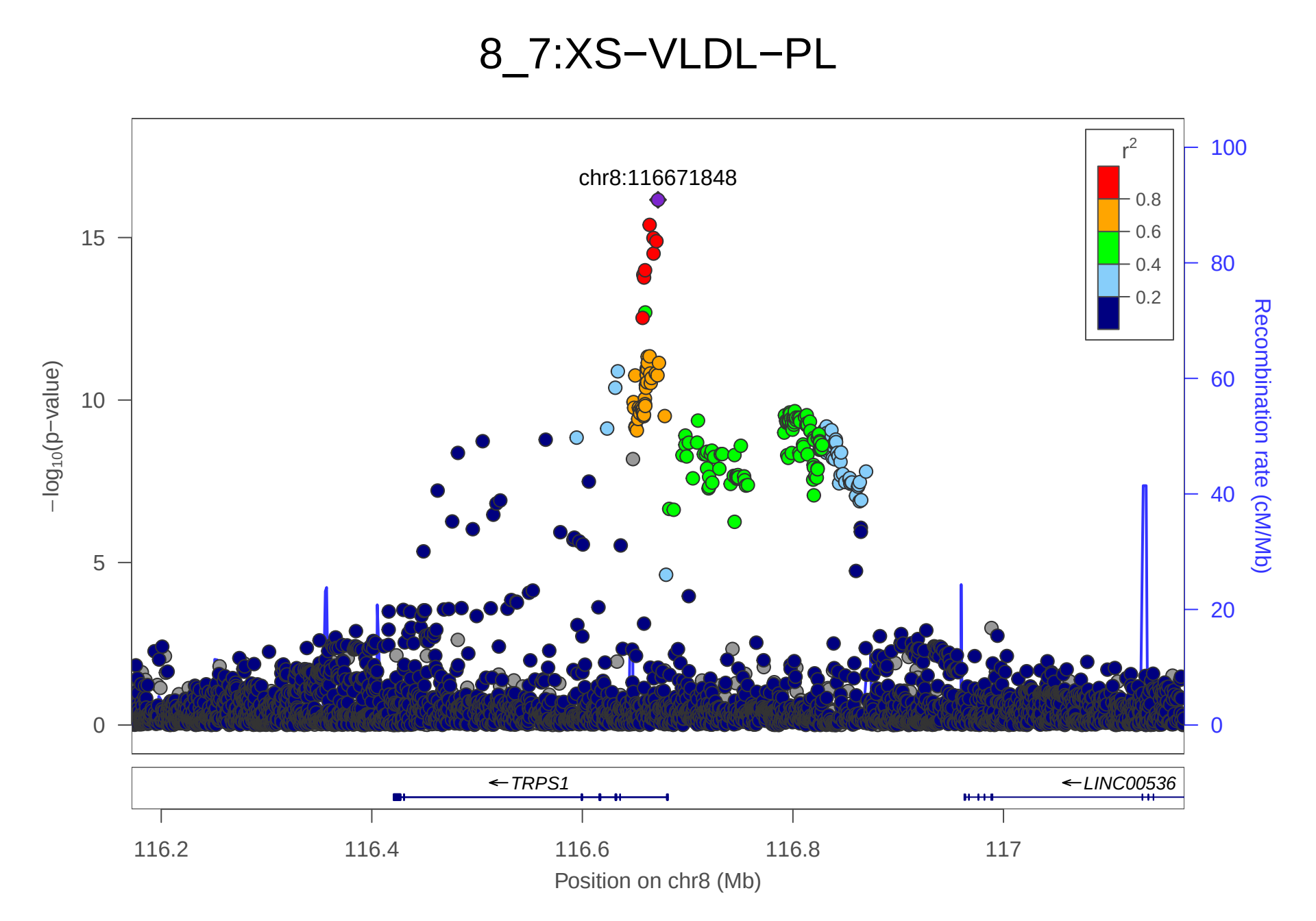

8_2:S−VLDL−TG
chr8:19912370
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
200
150
100
50
0
100
80
60
40
20
0
CSGALNACT1
INTS10
LPL
SLC18A1
ATP6V1B2
LZTS1
LZTS1−AS1
19.6
19.8
20
20.2
20.4
Position on chr8 (Mb)

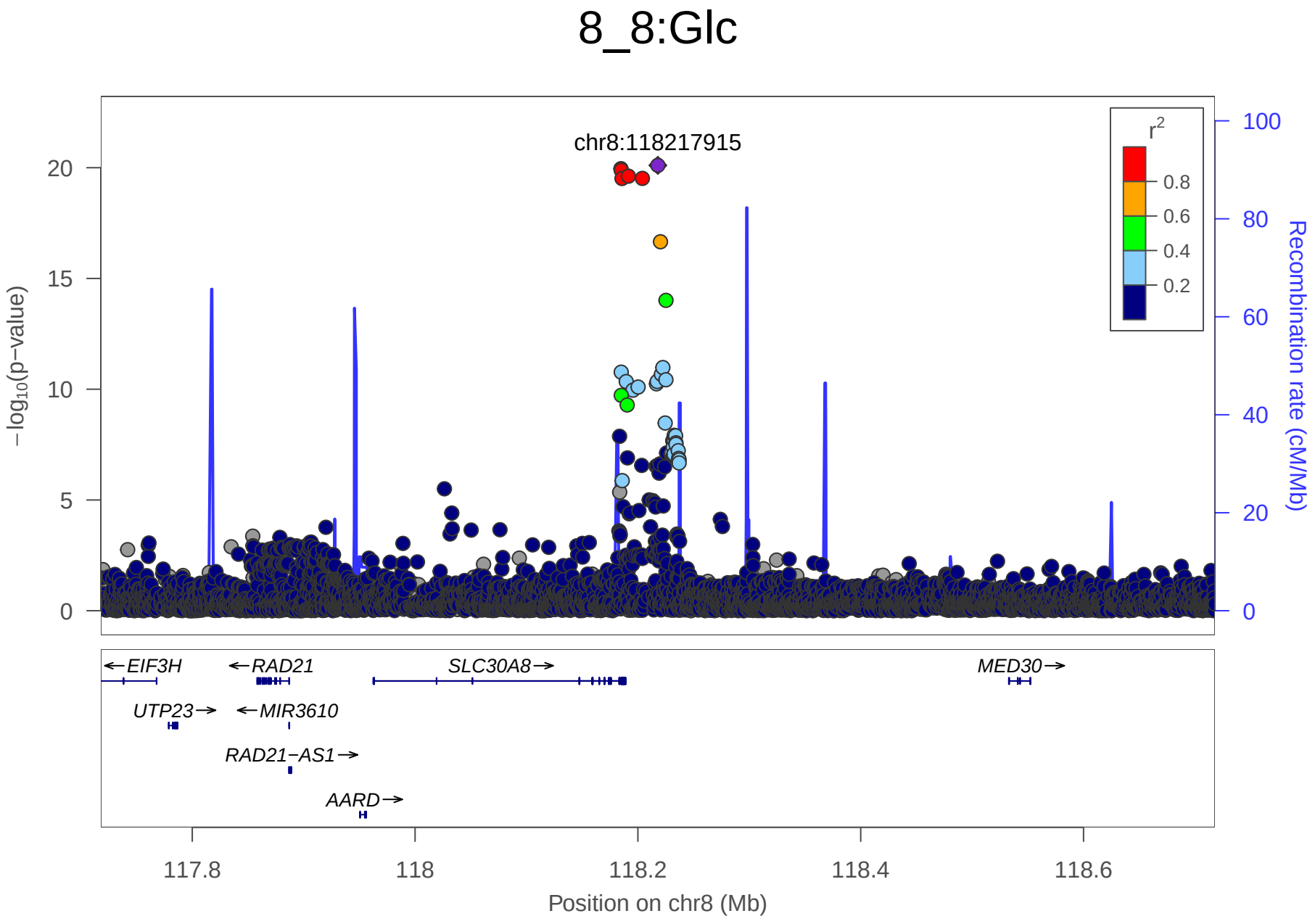

8_3:Crea
chr8:23777006
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ENTPD4
NKX3−1
STC1
ADAM28
SLC25A37
NKX2−6
LOC101929294
ADAMDEC1
Position on chr8 (Mb)


8_4:Ala
chr8:50001216
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LOC101929268
SNAI2
C8orf22
LOC100507464
LOC101929217
EFCAB1
49.6
49.8
50
50.2
50.4
Position on chr8 (Mb)

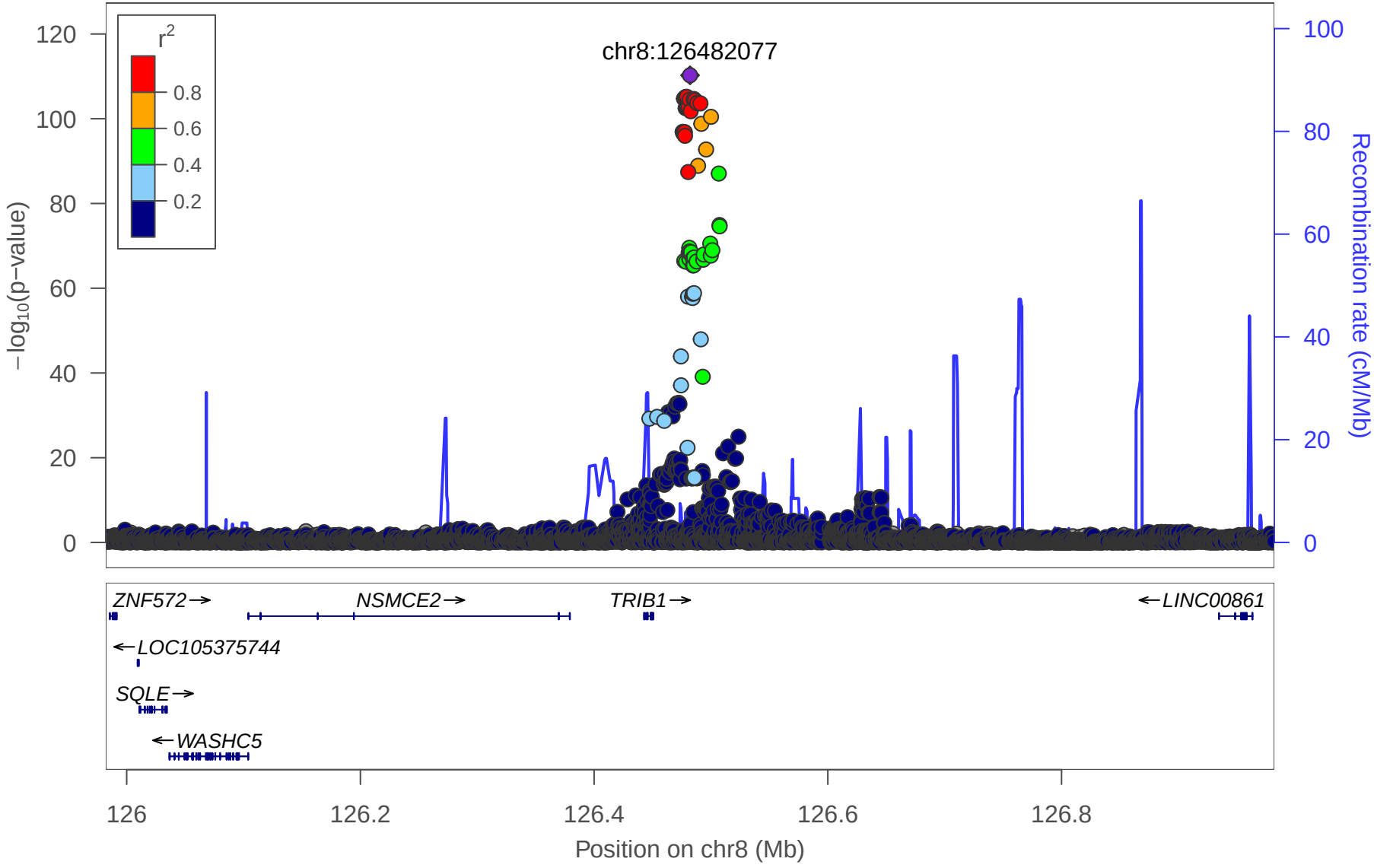

8_5:PUFA
r2
0.8
0.6
0.4
0.2
chr8:55410392
10
8
6
4
2
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←TCEA1
MRPL15→
SOX17→
RP1→
←LYPLA1
55
55.2
55.4
55.6
55.8
Position on chr8 (Mb)

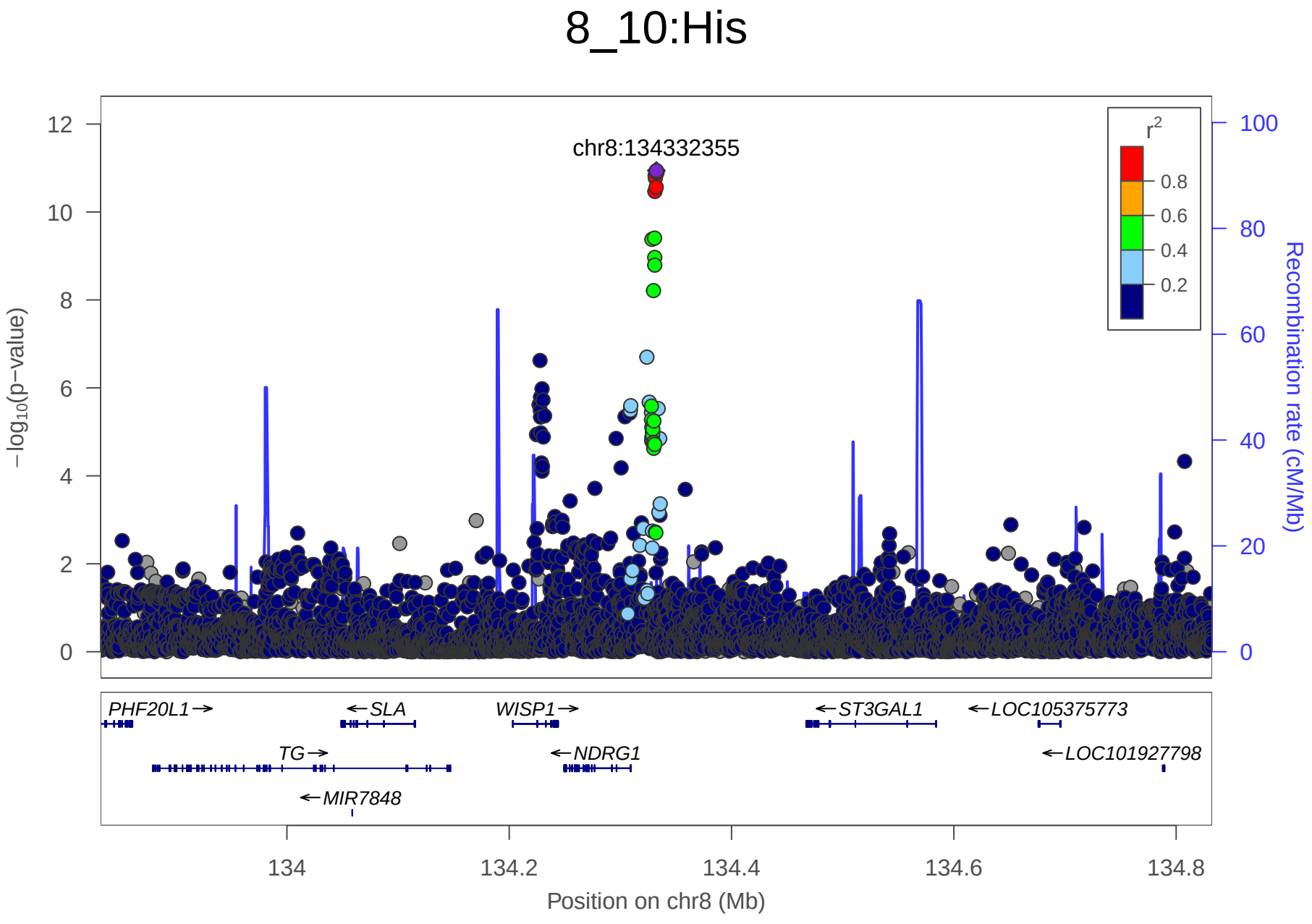

8_6:XL−HDL−TG
chr8:59393273
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LINC01602
LOC101929528
UBXN2B
SDCBP
TOX
FAM110B
CYP7A1
NSMAF
Position on chr8 (Mb)


8_7:XS−VLDL−PL
chr8:116671848
r2
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←TRPS1
←LINC00536
116.2
116.4
116.6
116.8
117
Position on chr8 (Mb)

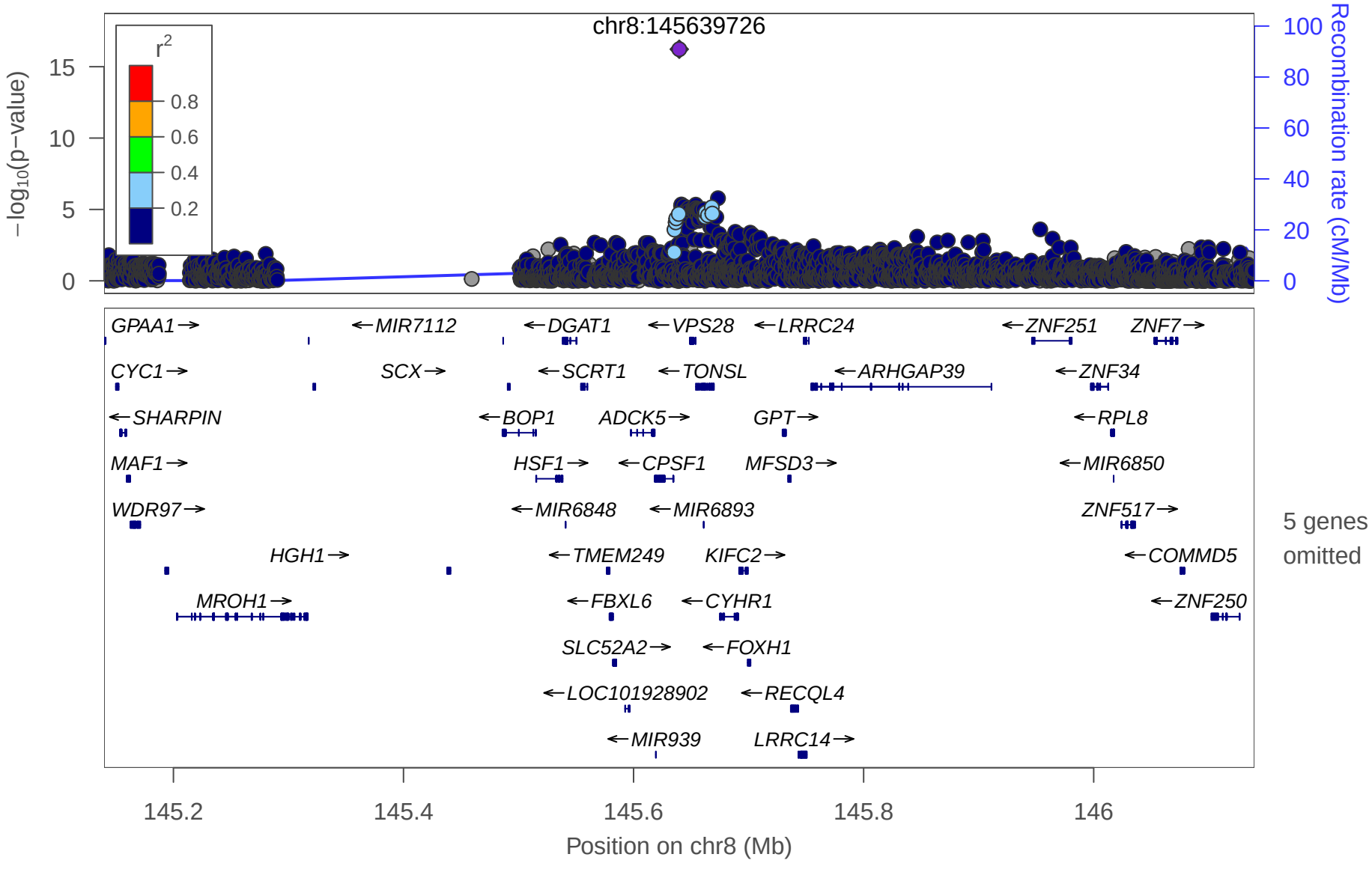

8_8:Glc
chr8:118217915
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
EIF3H
RAD21
SLC30A8
MED30
UTP23
MIR3610
RAD21−AS1
AARD
Position on chr8 (Mb)

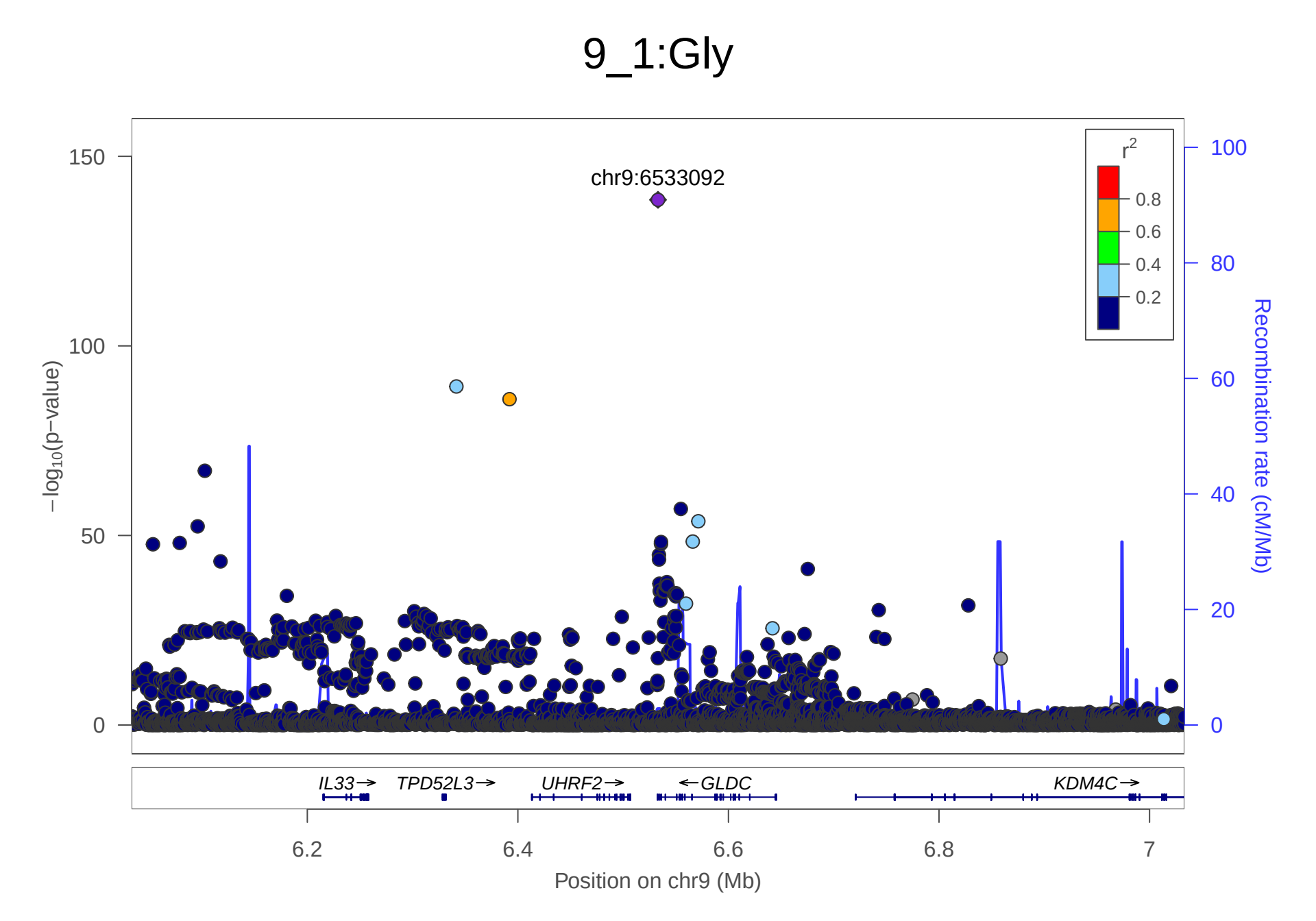
8_9:S−VLDL−PL

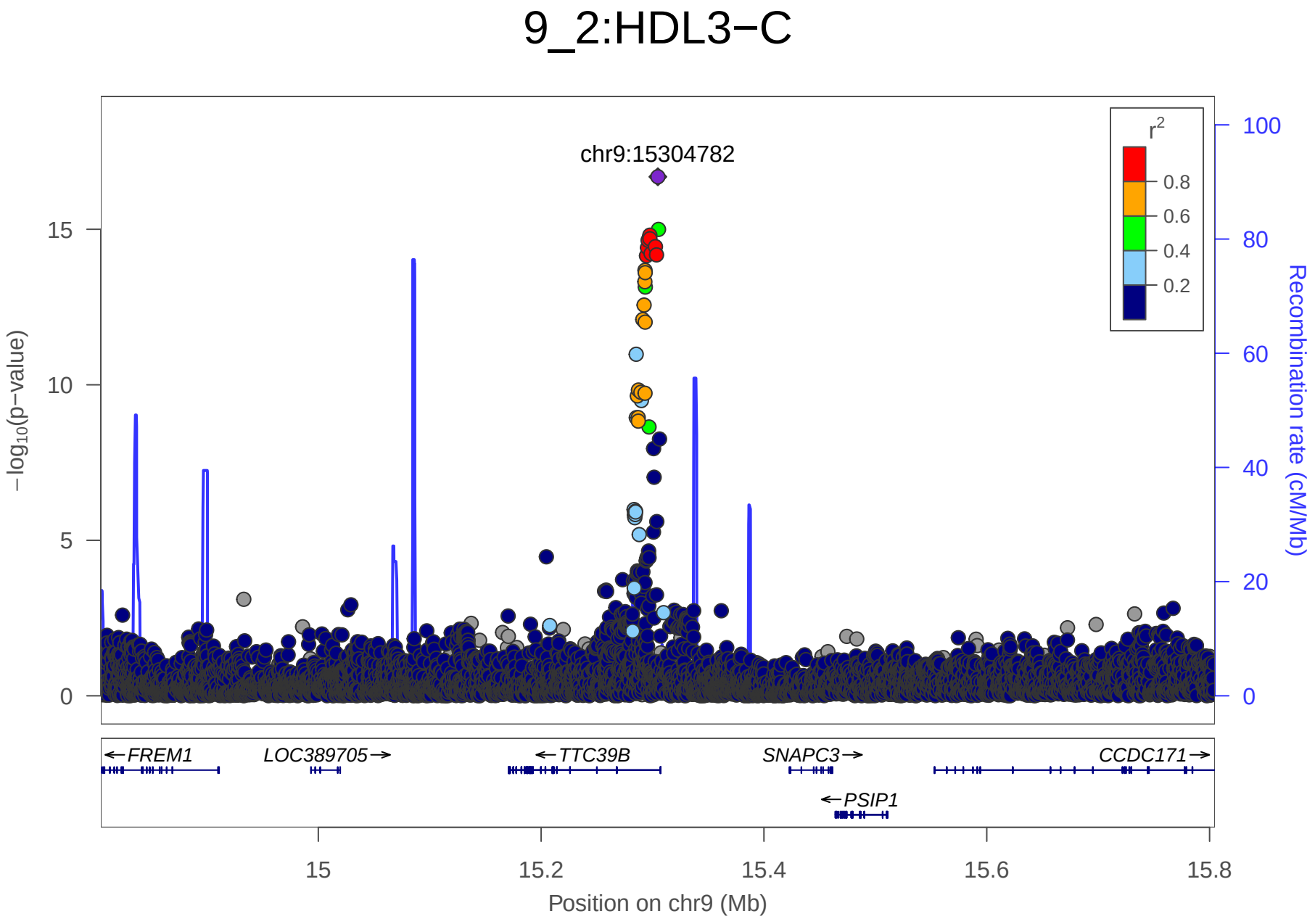

r2
0.8
0.6
0.4
0.2
chr8:126482077
−log10(p−value)
Recombination rate (cM/Mb)
120
100
80
60
40
20
0
100
80
60
40
20
0
ZNF572→
NSMCE2→
TRIB1→
←LINC00861
←LOC105375744
SQLE→
←WASHC5
126
126.2
126.4
126.6
126.8
Position on chr8 (Mb)

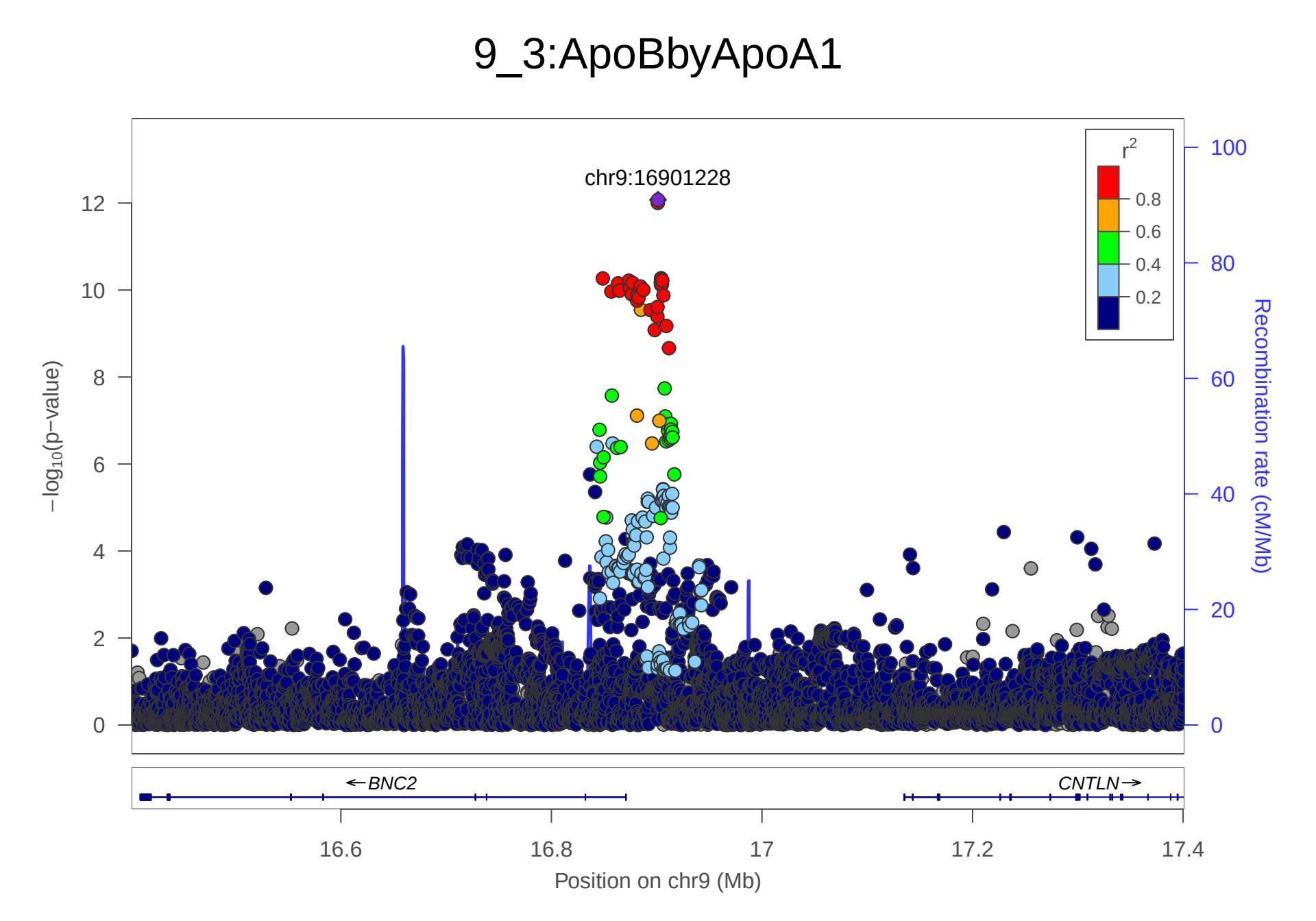

8_10:His
chr8:134332355
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PHF20L1
SLA
WISP1
ST3GAL1
LOC105375773
TG
NDRG1
LOC101927798
MIR7848
Position on chr8 (Mb)

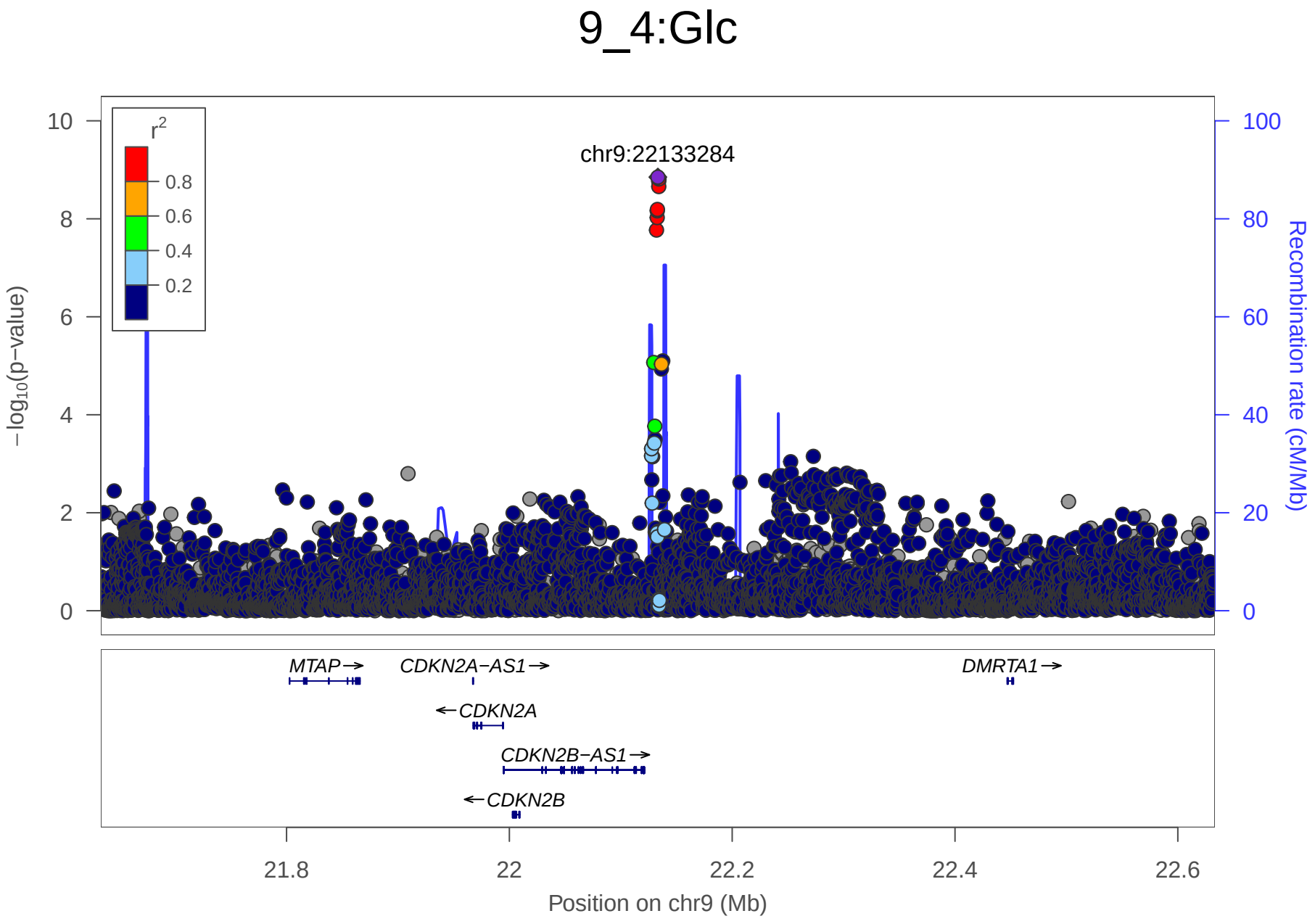
8_11:His


chr8:145639726
r²
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
GPAA1→
←MIR7112
←DGAT1
←VPS28
←LRRC24
←ZNF251
ZNF7→
CYC1→
SCX→
←SCRT1
←TONSL
←ARHGAP39
←ZNF34
←SHARPIN
←BOP1
ADCK5→
GPT→
←RPL8
MAF1→
HSF1→
←CPSF1
MFSD3→
←MIR6850
WDR97→
←MIR6848
←MIR6893
ZNF517→
HGH1→
←TMEM249
KIFC2→
←COMMD5
MROH1→
←FBXL6
←CYHR1
←ZNF250
SLC52A2→
←FOXH1
←LOC101928902
←RECQL4
←MIR939
LRRC14→
5 genes
omitted
145.2
145.4
145.6
145.8
146
Position on chr8 (Mb)

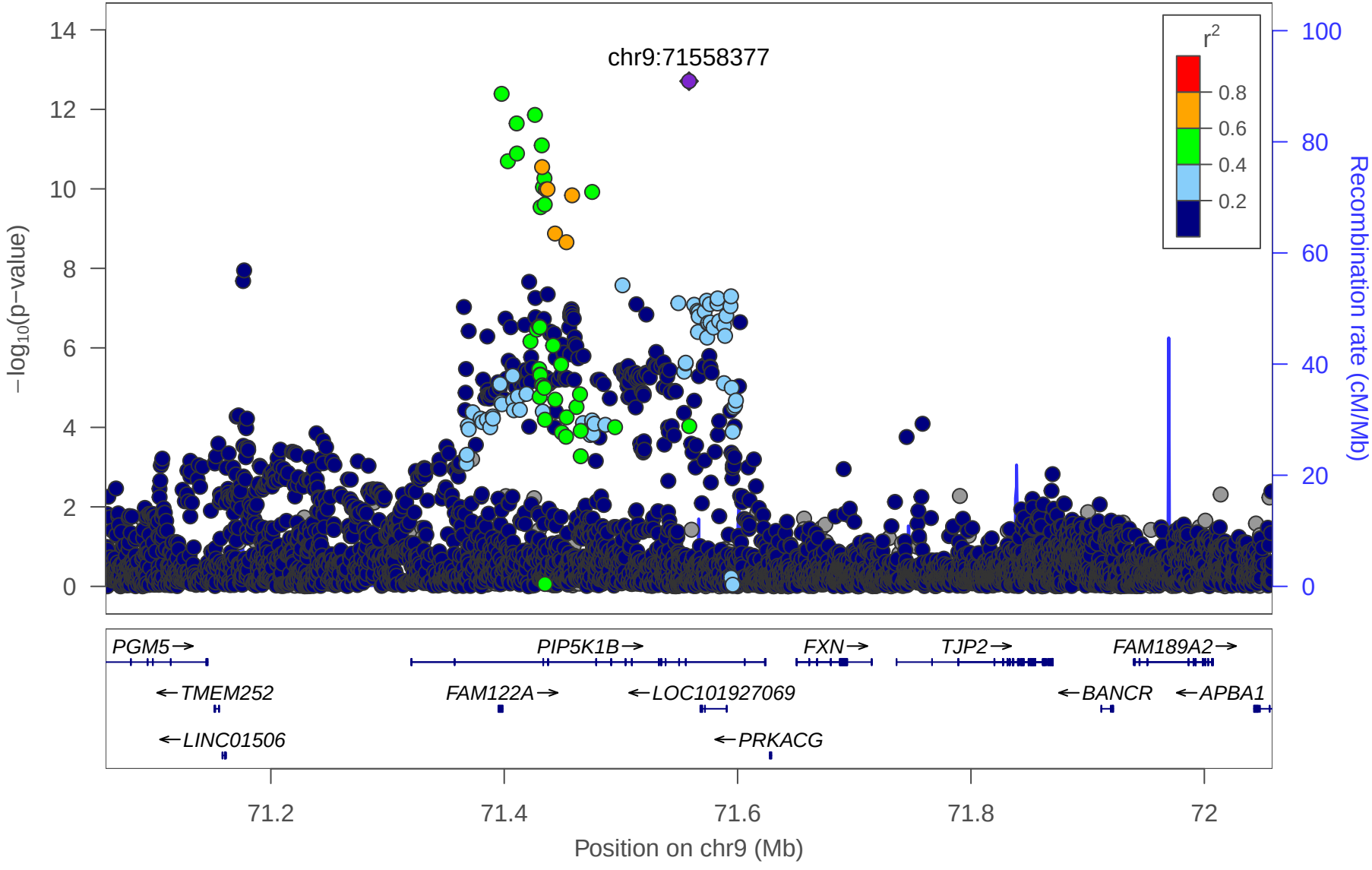

9_1:Gly
chr9:6533092
r2
0.8
0.6
0.4
0.2
150
100
50
0
100
80
60
40
20
0
−log10(p−value)
Recombination rate (cM/Mb)
IL33→
TPD52L3→
UHRF2→
←GLDC
KDM4C→
6.2
6.4
6.6
6.8
7
Position on chr9 (Mb)

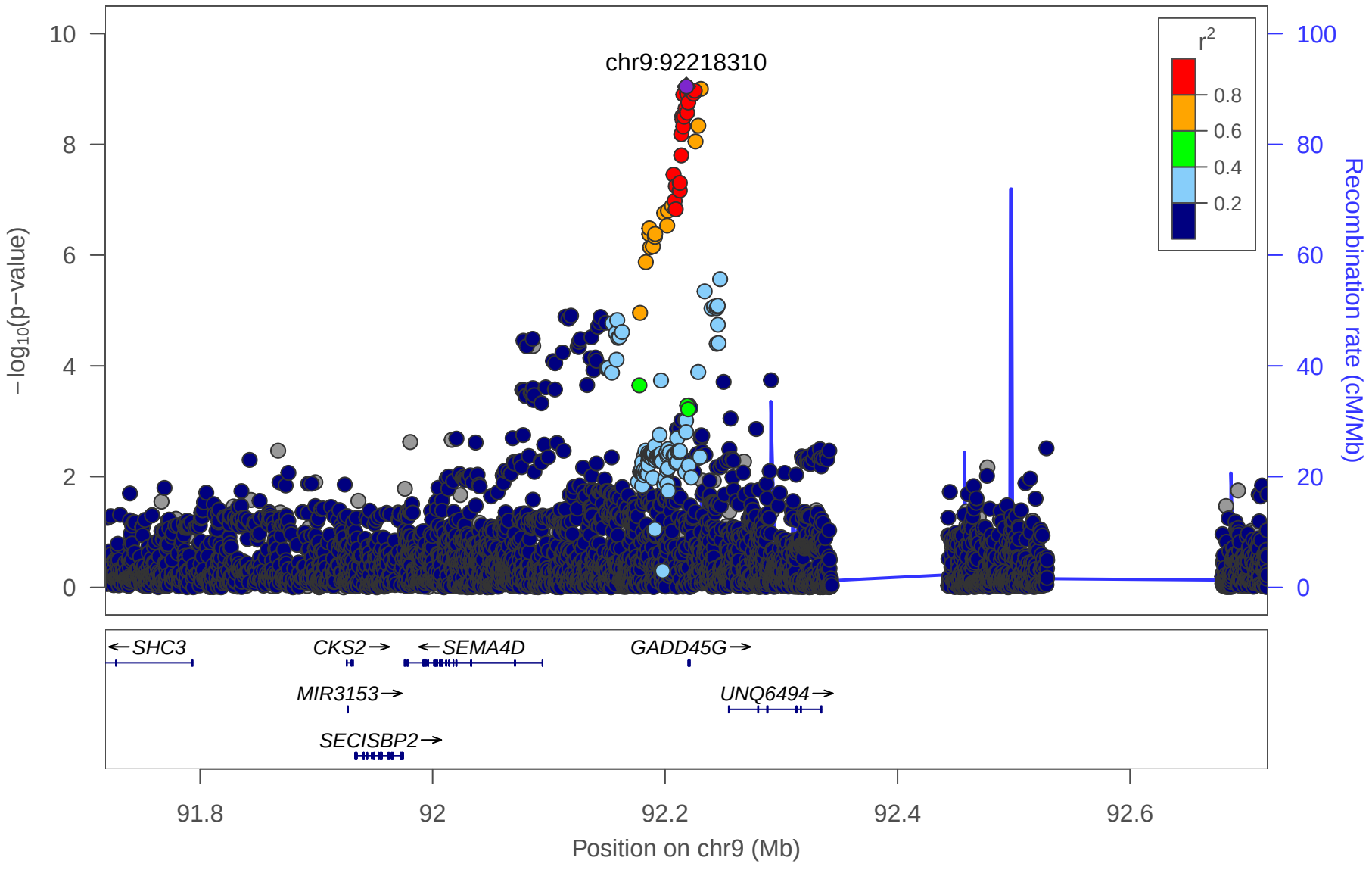

9_2:HDL3−C
chr9:15304782
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FREM1
LOC389705
TTC39B
SNAPC3
CCDC171
PSIP1
Position on chr9 (Mb)

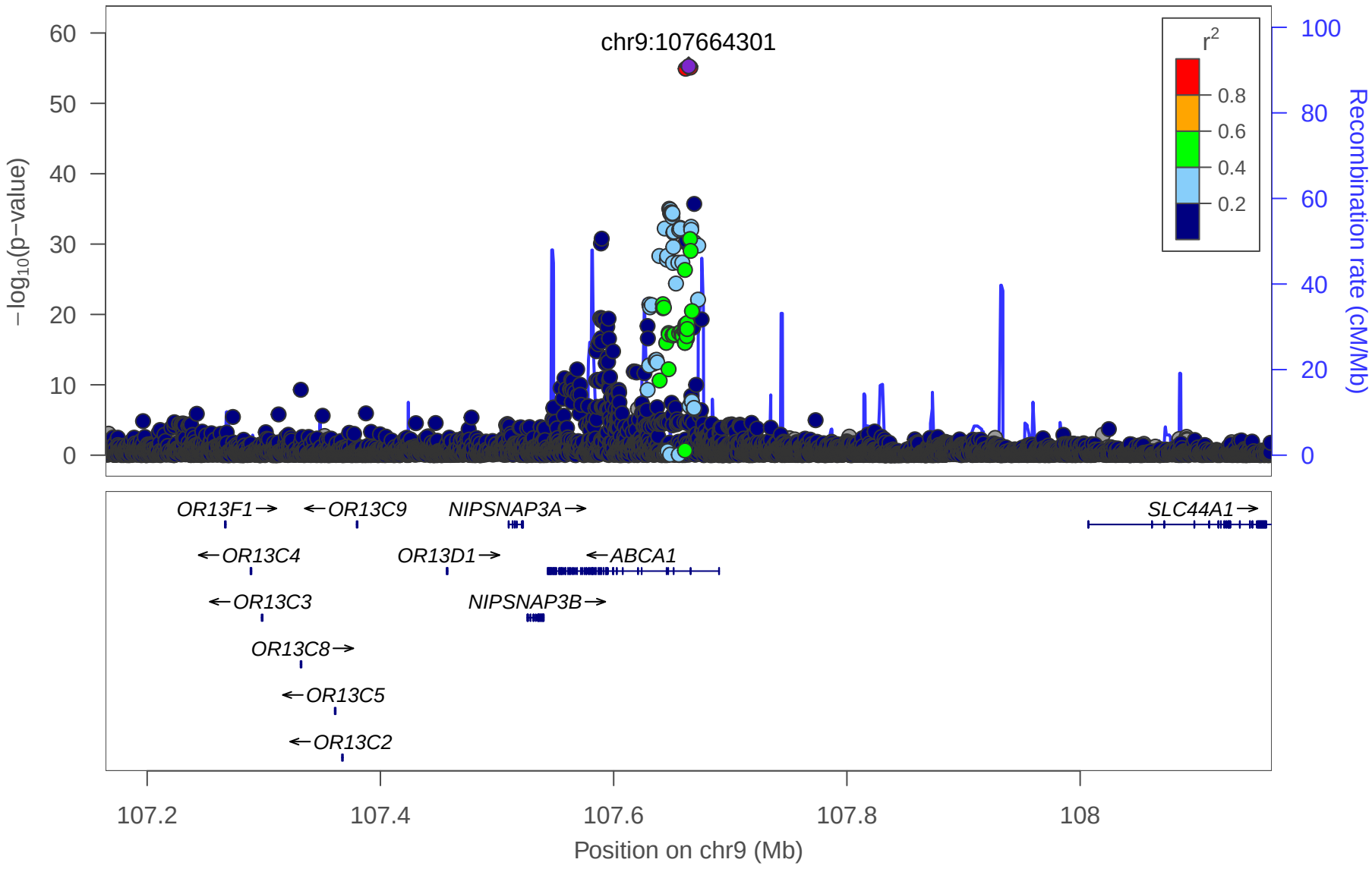

9_3:ApoBbyApoA1
chr9:16901228
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
BNC2
CNTLN
Position on chr9 (Mb)

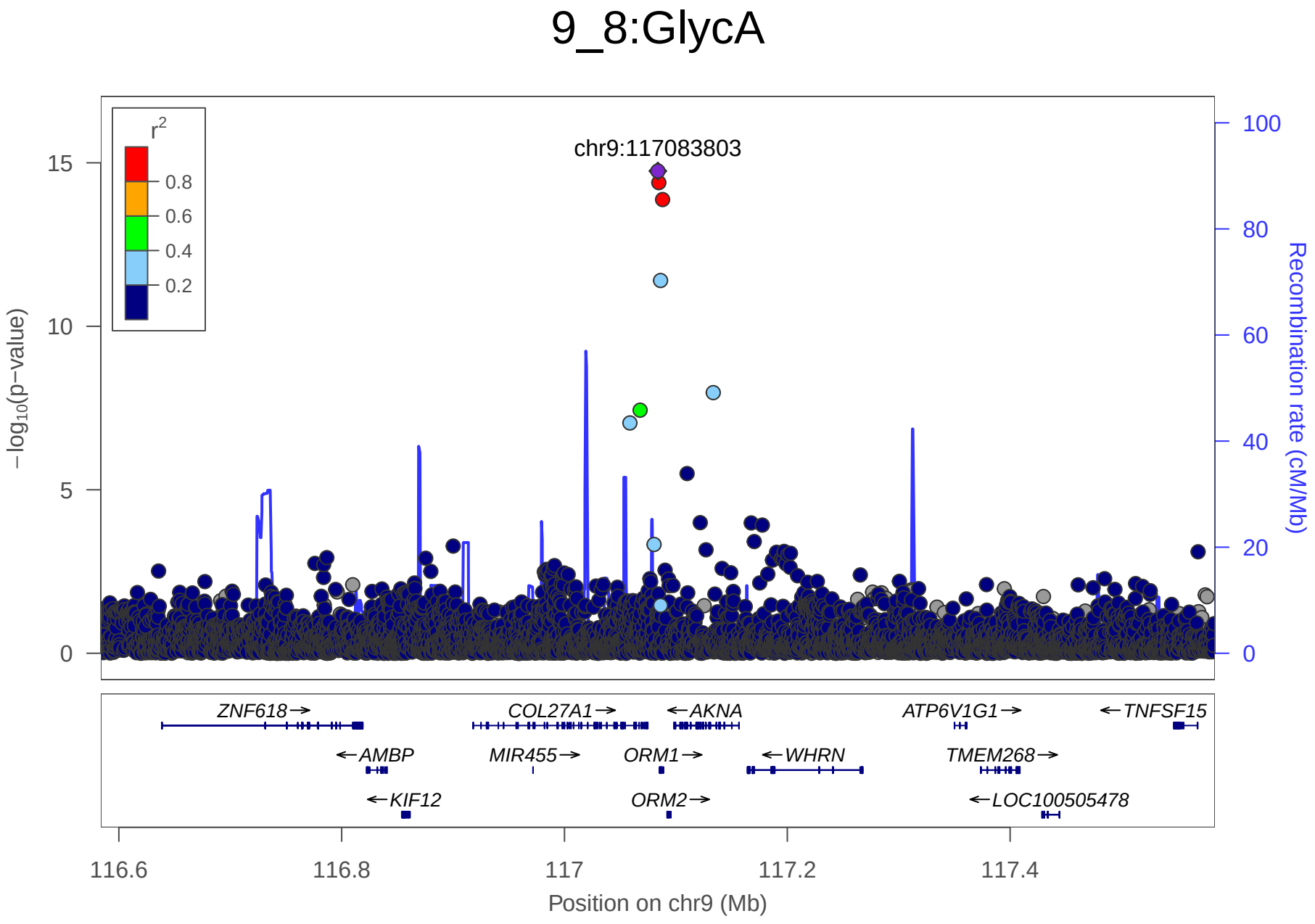

9_4:Glc
chr9:22133284
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
MTAP
CDKN2A−AS1
DMRTA1
CDKN2A
CDKN2B−AS1
CDKN2B
Position on chr9 (Mb)

9_5:Crea

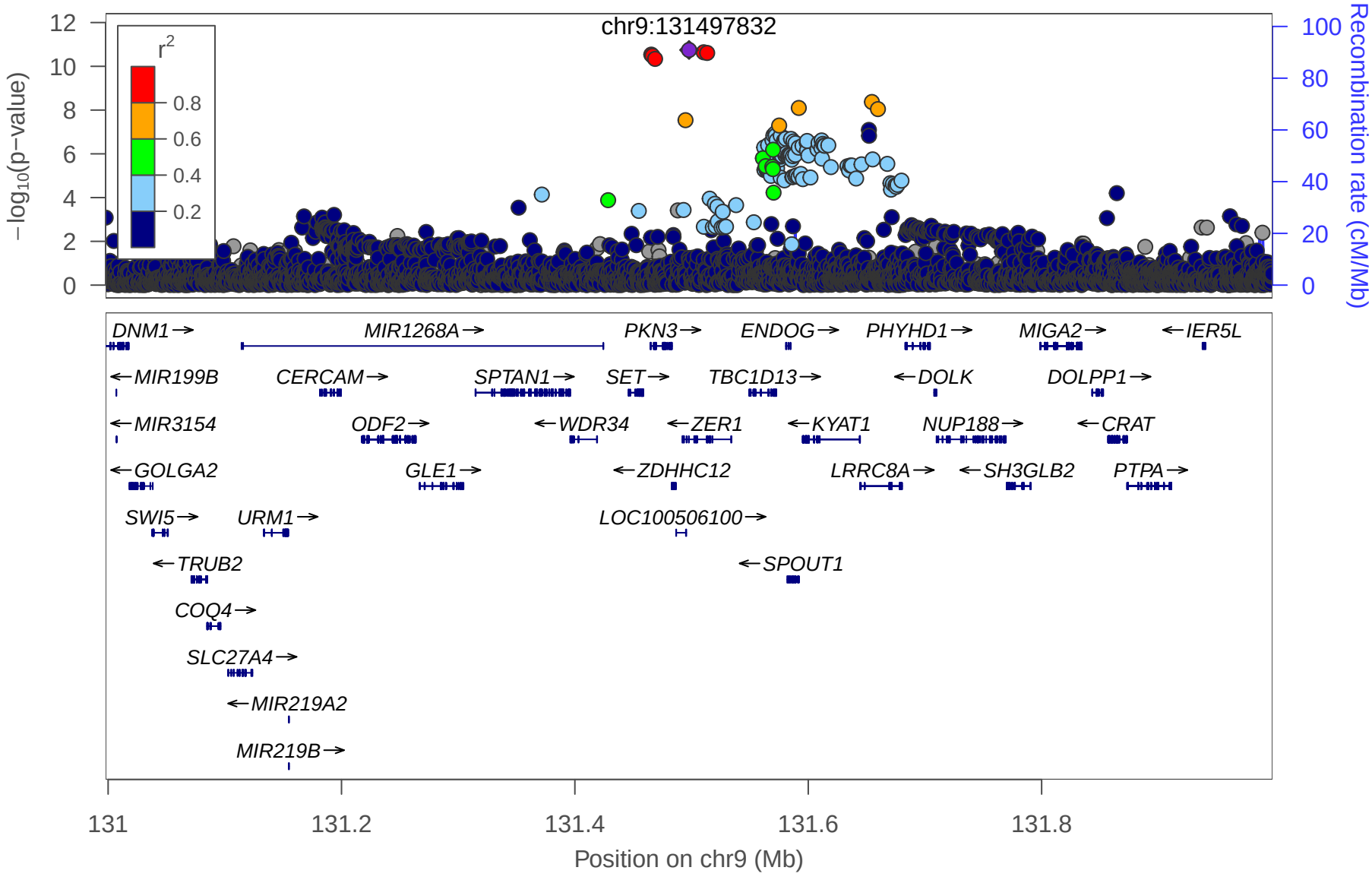

chr9:71558377
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PGM5
PIP5K1B
FXN
TJP2
FAM189A2
TMEM252
FAM122A
LOC101927069
BANCR
APBA1
LINC01506
PRKACG
71.2
71.4
71.6
71.8
72
Position on chr9 (Mb)


9_6:S−HDL−C_percent
chr9:92218310
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SHC3
CKS2
SEMA4D
GADD45G
MIR3153
UNQ6494
SECISBP2
Position on chr9 (Mb)

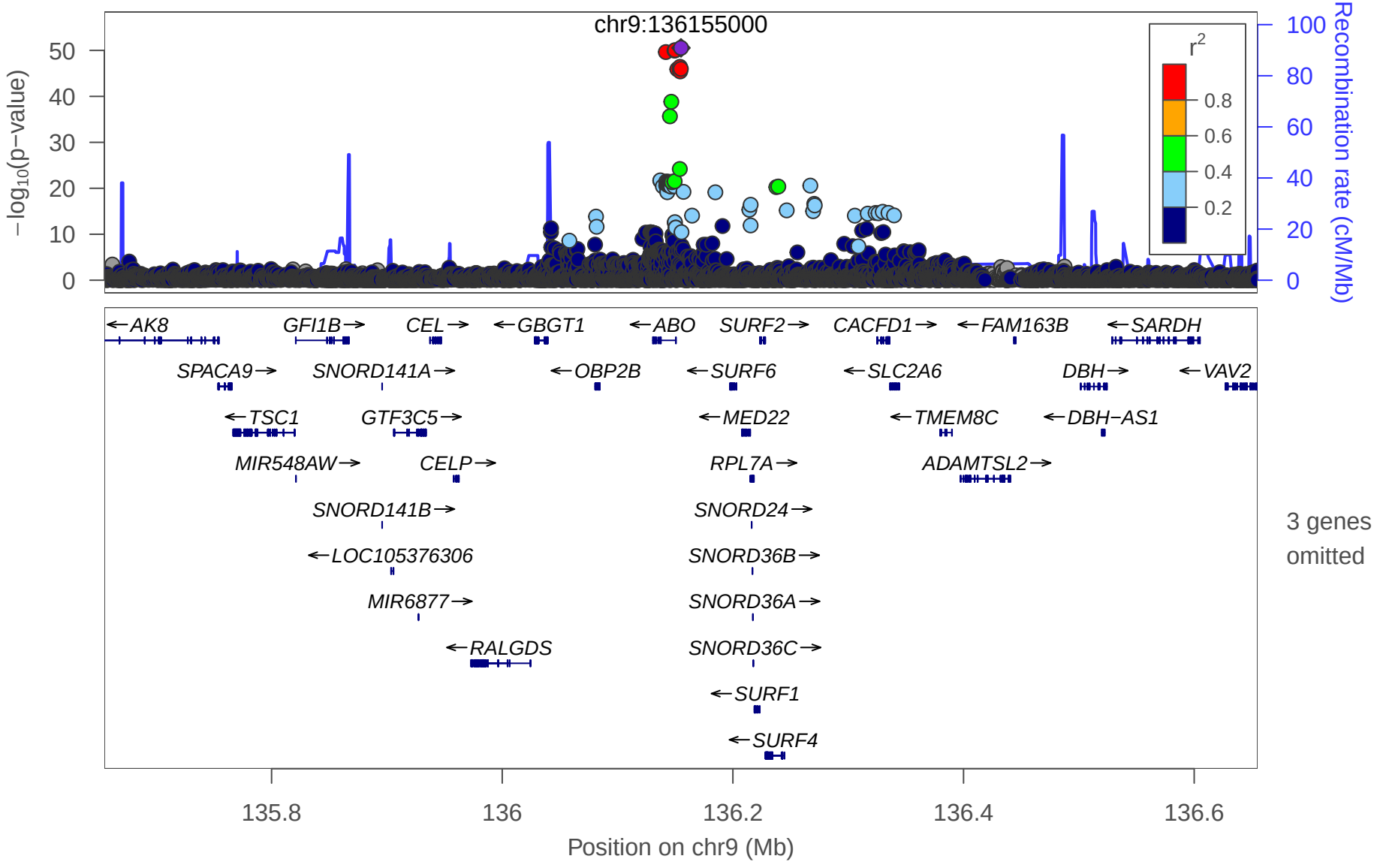

9_7:XL−HDL−CE
chr9:107664301
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
OR13F1
OR13C9
NIPSNAP3A
SLC44A1
OR13C4
OR13D1
ABCA1
OR13C3
NIPSNAP3B
OR13C8
OR13C5
OR13C2
Position on chr9 (Mb)


9_8:GlycA
chr9:117083803
r2
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
ZNF618→
COL27A1→
←AKNA
ATP6V1G1→
←TNFSF15
←AMBP
MIR455→
ORM1→
←WHRN
TMEM268→
←KIF12
ORM2→
←LOC100505478
116.6
116.8
117
117.2
117.4
Position on chr9 (Mb)

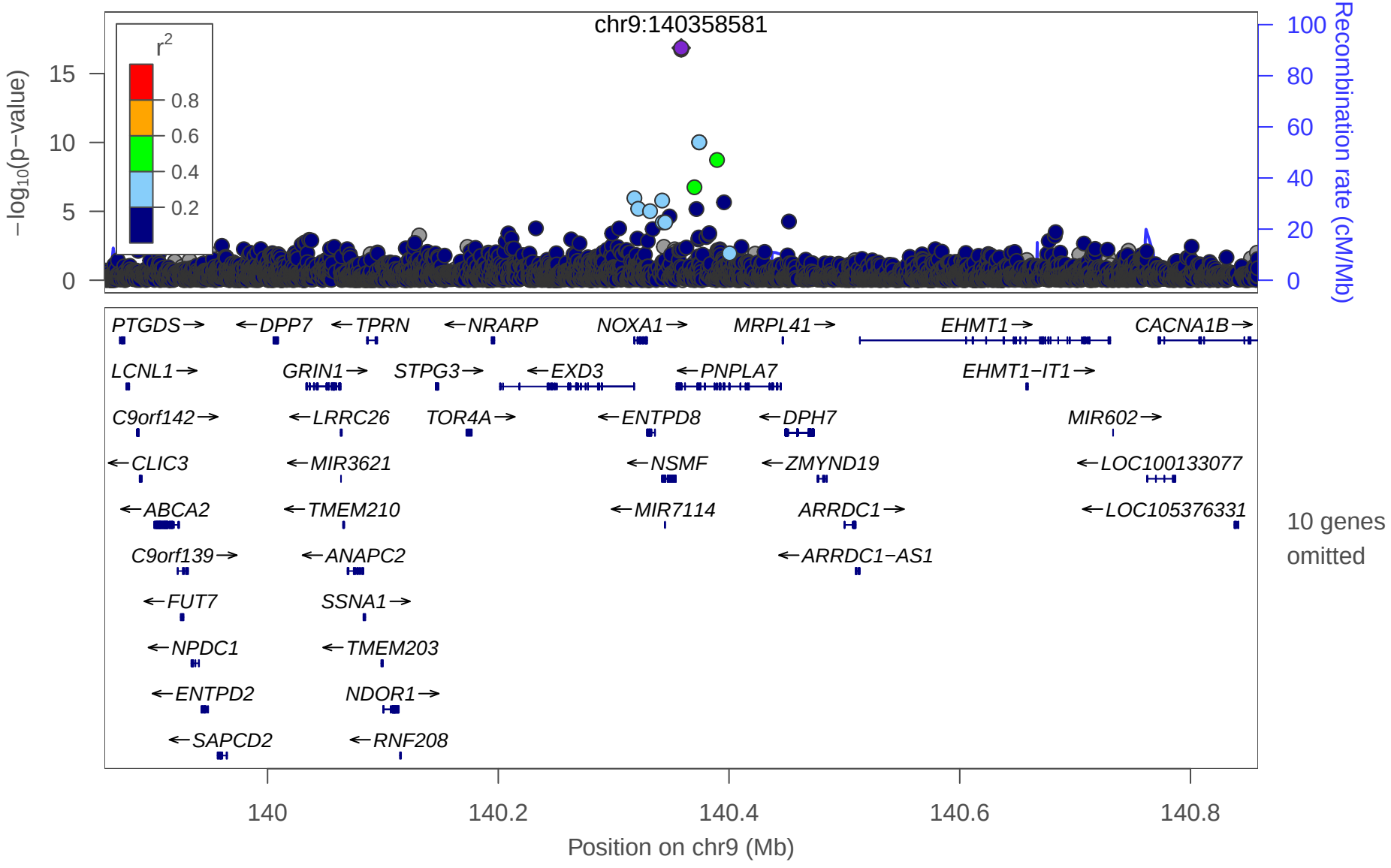
9_9:L−LDL−FC

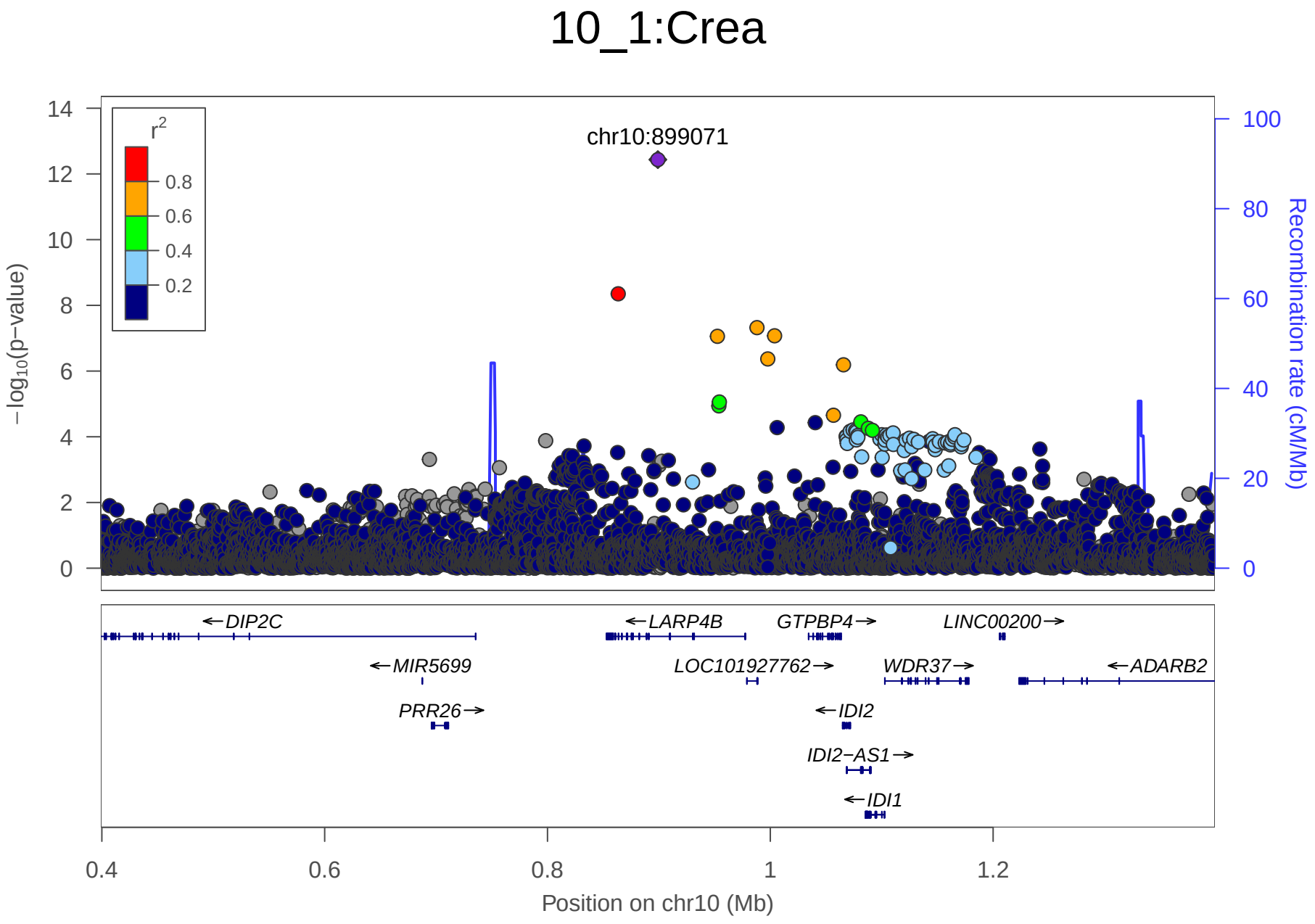

chr9:131497832
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DNM1→
MIR1268A→
PKN3→
ENDOG→
PHYHD1→
MIGA2→
←IER5L
←MIR199B
CERCAM→
SPTAN1→
SET→
TBC1D13→
←DOLK
DOLPP1→
←MIR3154
ODF2→
←WDR34
←ZER1
←KYAT1
NUP188→
←CRAT
←GOLGA2
GLE1→
←ZDHHC12
LRRC8A→
←SH3GLB2
PTPA→
SWI5→
URM1→
LOC100506100→
←TRUB2
←SPOUT1
COQ4→
SLC27A4→
←MIR219A2
MIR219B→
131
131.2
131.4
131.6
131.8
Position on chr9 (Mb)

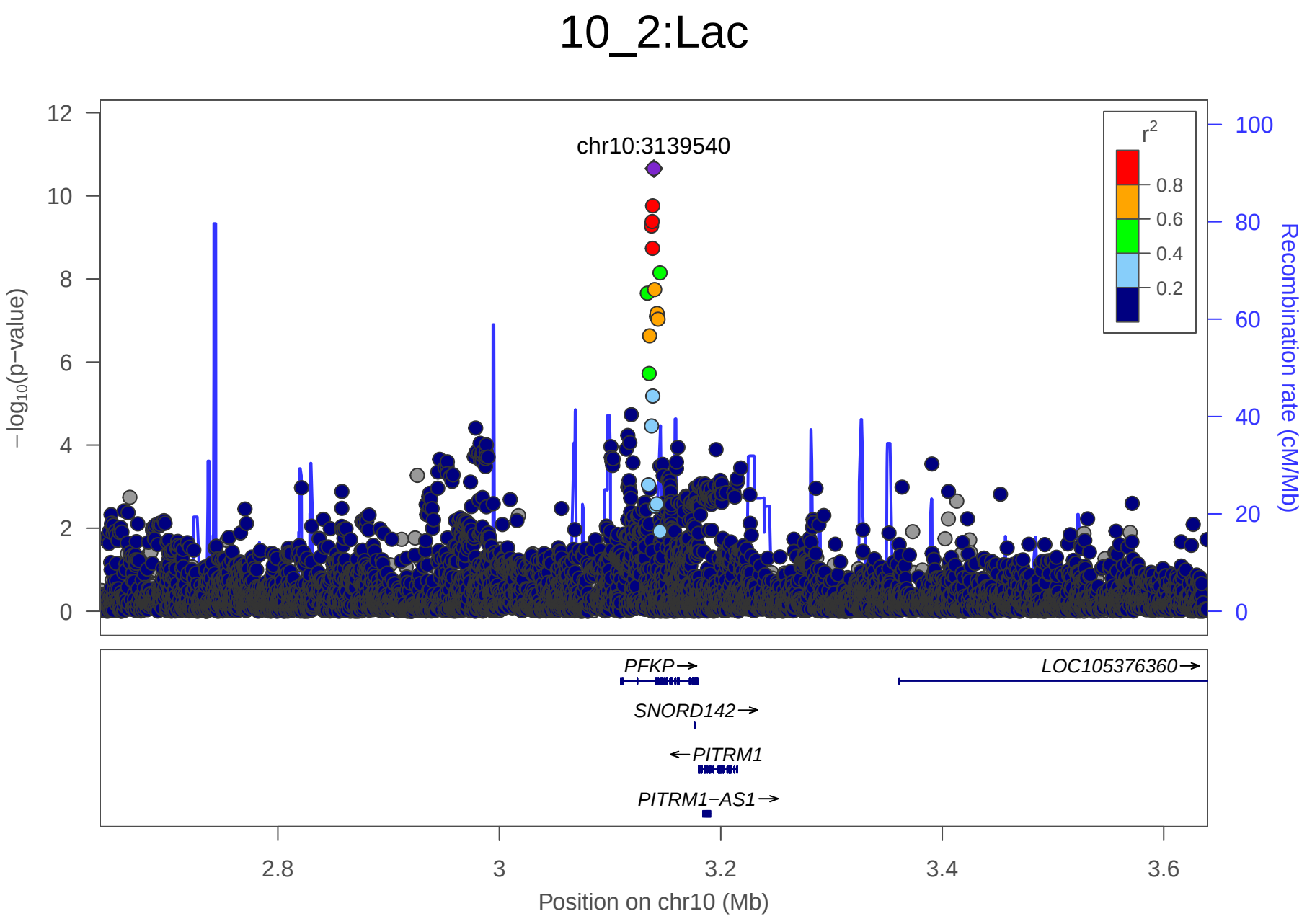
9_10:XS−VLDL−C

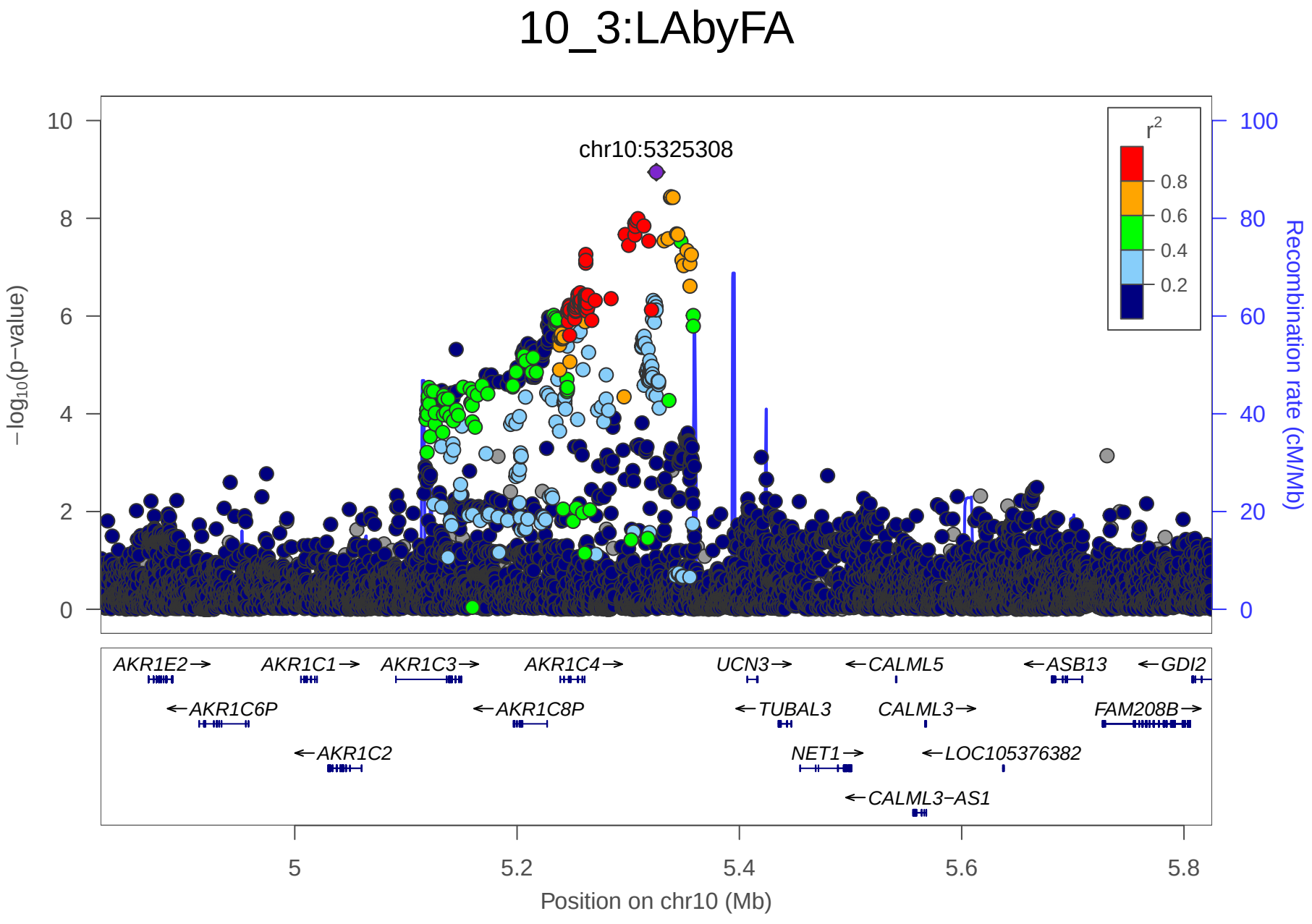

chr9:136155000
−log10(p−value)
Recombination rate (cM/Mb)
r2
0.8
0.6
0.4
0.2
AK8
GFI1B
CEL
GBGT1
ABO
SURF2
CACFD1
FAM163B
SARDH
SPACA9
SNORD141A
OBP2B
SURF6
SLC2A6
DBH
VAV2
TSC1
GTF3C5
MED22
TMEM8C
DBH−AS1
MIR548AW
CELP
RPL7A
ADAMTSL2
SNORD141B
SNORD24
LOC105376306
SNORD36B
MIR6877
SNORD36A
RALGDS
SNORD36C
SURF1
SURF4
3 genes omitted
135.8
136
136.2
136.4
136.6
Position on chr9 (Mb)

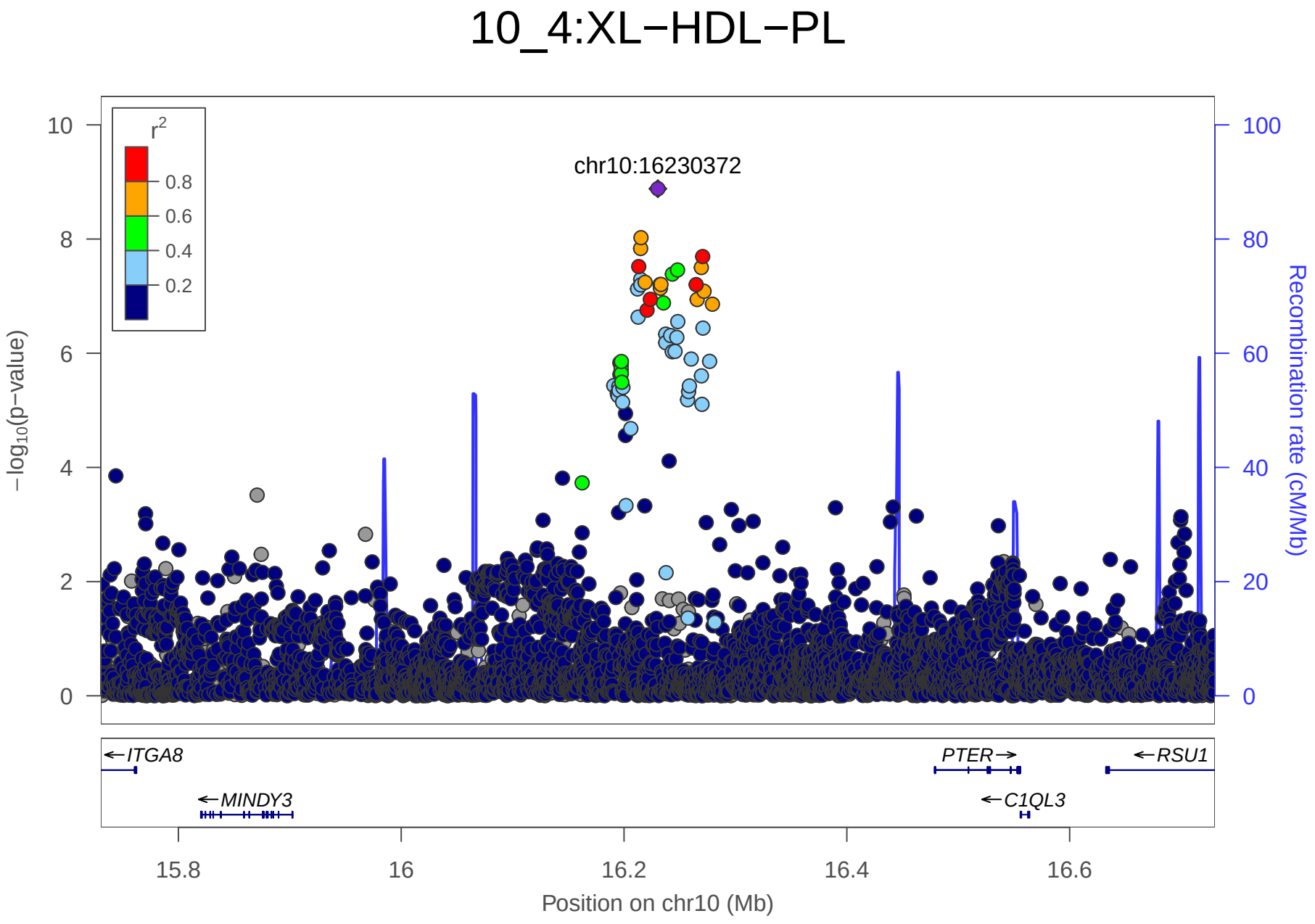
9_11:MUFAbyFA



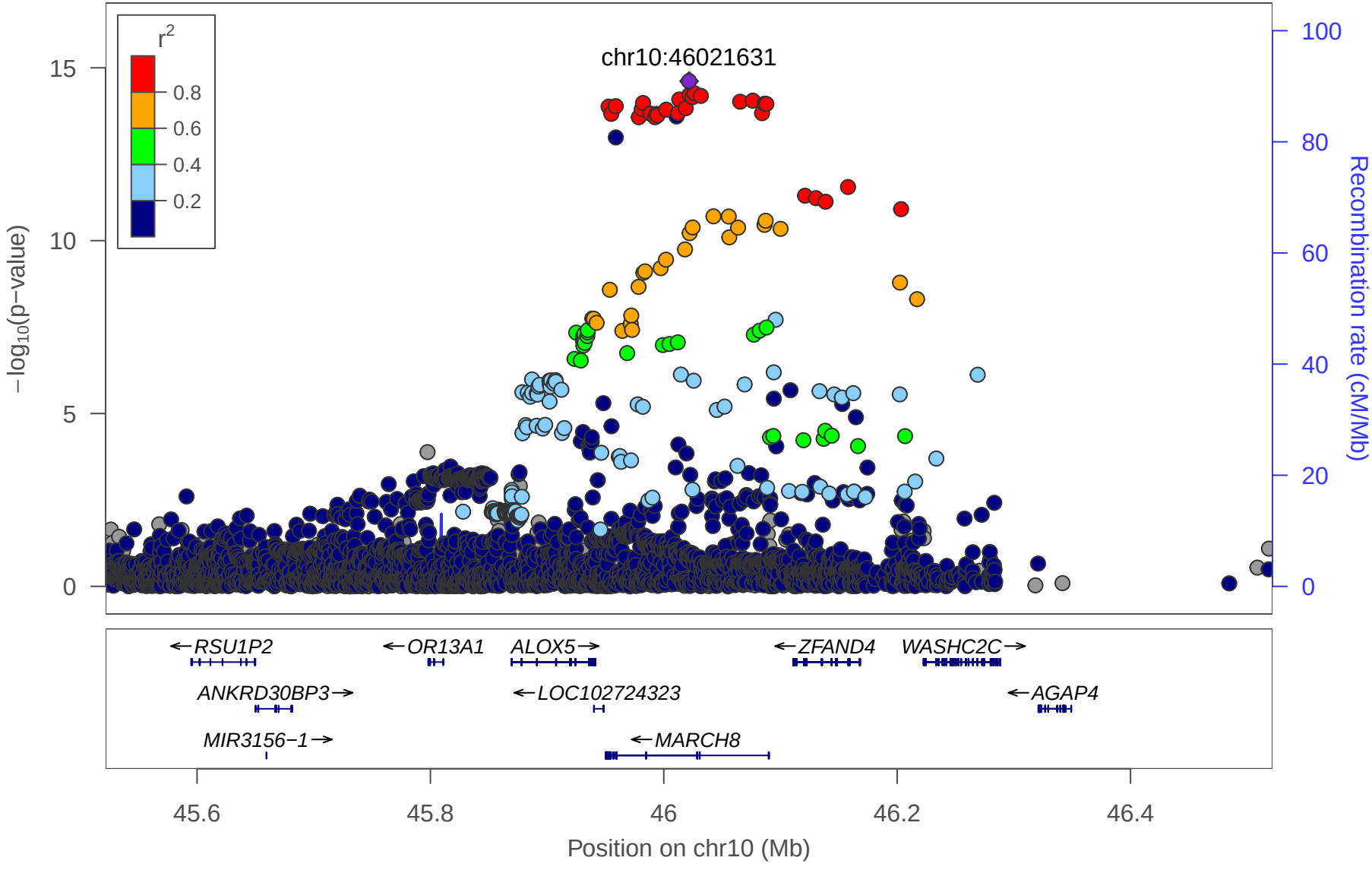

10_1:Crea
chr10:899071
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DIP2C
LARP4B
GTPBP4
LINC00200
MIR5699
LOC101927762
WDR37
ADARB2
PRR26
IDI2
IDI2−AS1
IDI1
Position on chr10 (Mb)

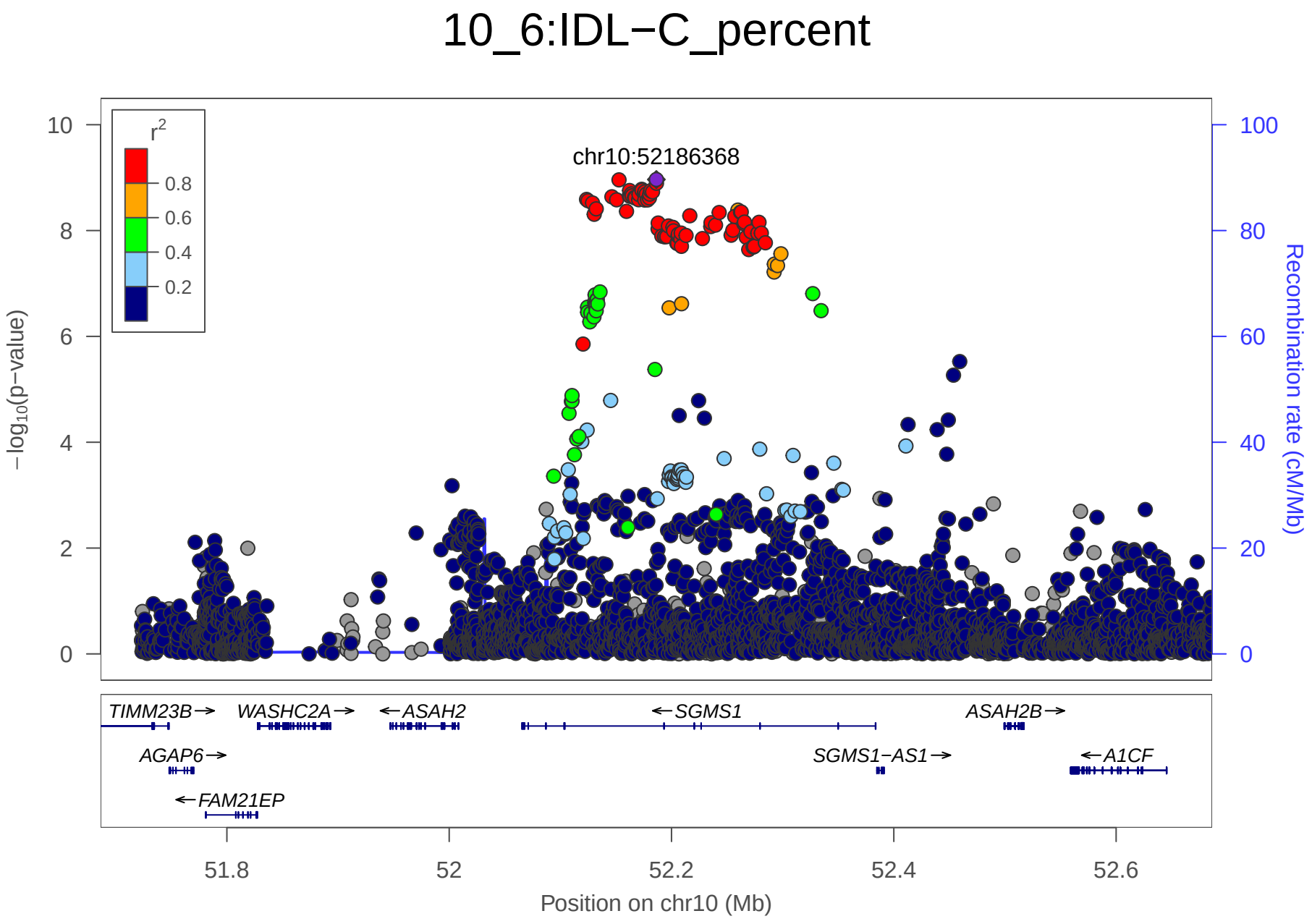

10_2:Lac
chr10:3139540
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PFKP
LOC105376360
SNORD142
PITRM1
PITRM1−AS1
Position on chr10 (Mb)

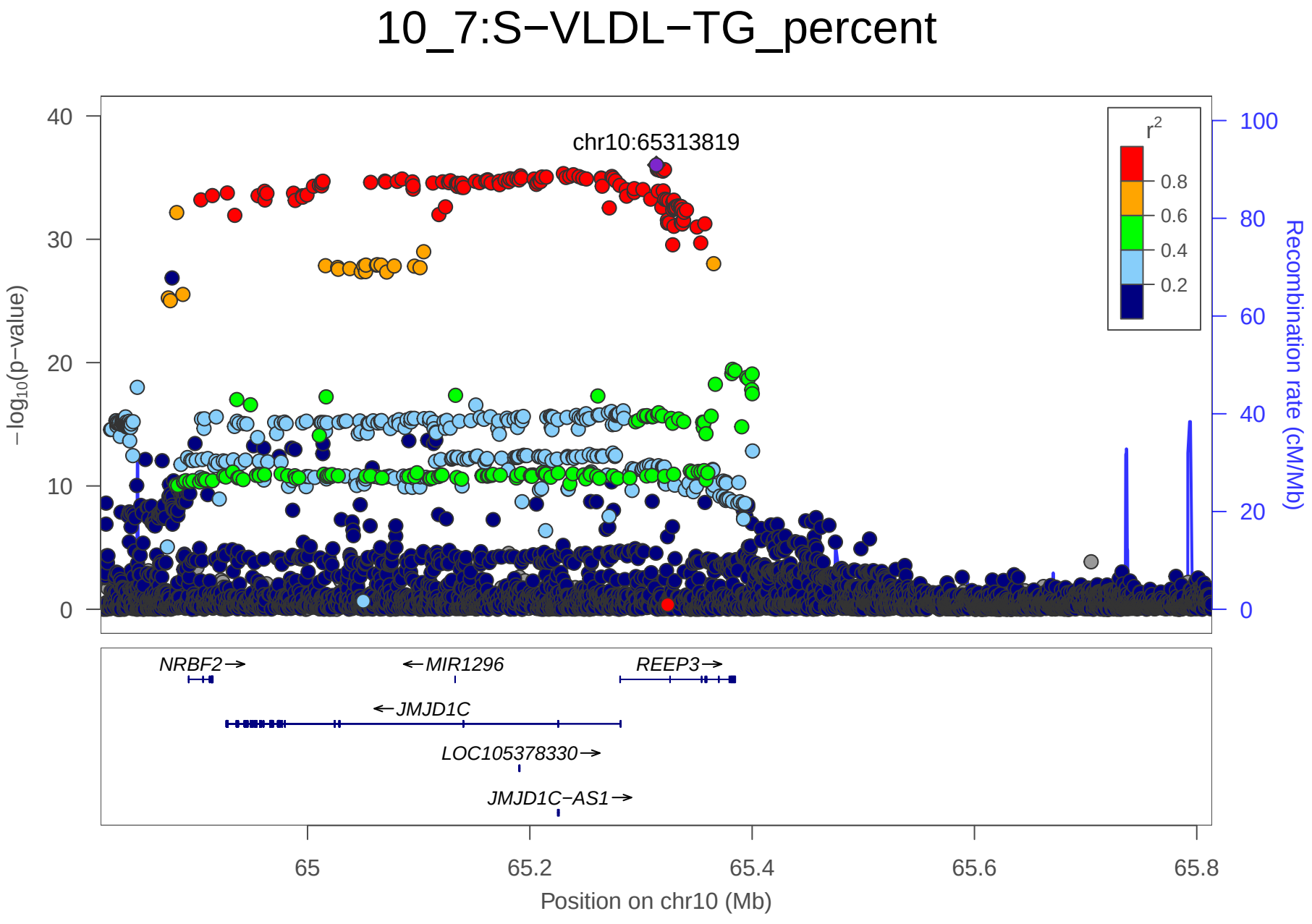

10_3:LAbyFA
chr10:5325308
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
AKR1E2
AKR1C1
AKR1C3
AKR1C4
UCN3
CALML5
ASB13
GDI2
AKR1C6P
AKR1C8P
TUBAL3
CALML3
FAM208B
AKR1C2
NET1
LOC105376382
CALML3−AS1
Position on chr10 (Mb)

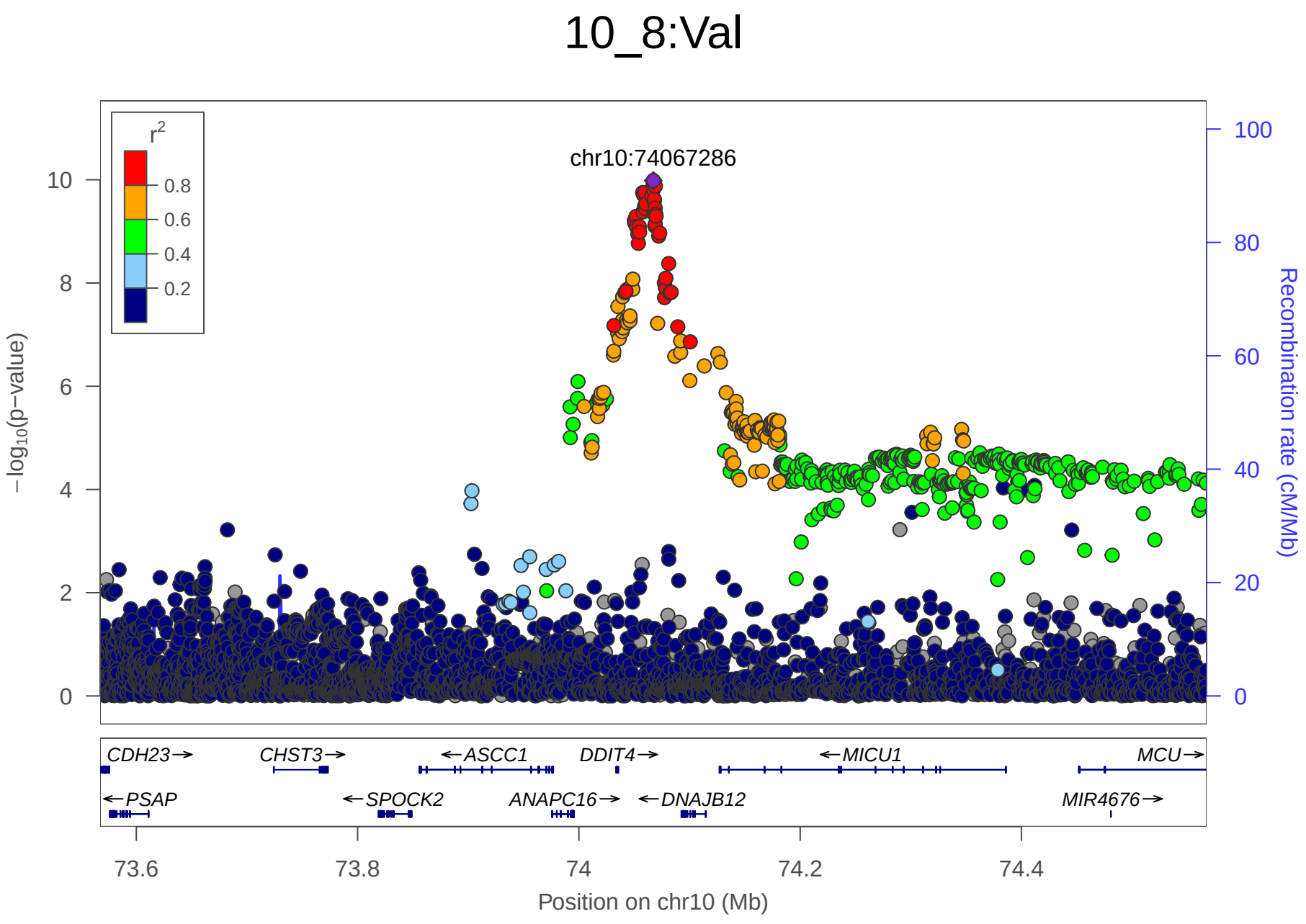

10_4:XL−HDL−PL
r2
0.8
0.6
0.4
0.2
chr10:16230372
−log10(p−value)
Recombination rate (cM/Mb)
ITGA8
MINDY3
PTER
RSU1
C1QL3
15.8
16
16.2
16.4
16.6
Position on chr10 (Mb)

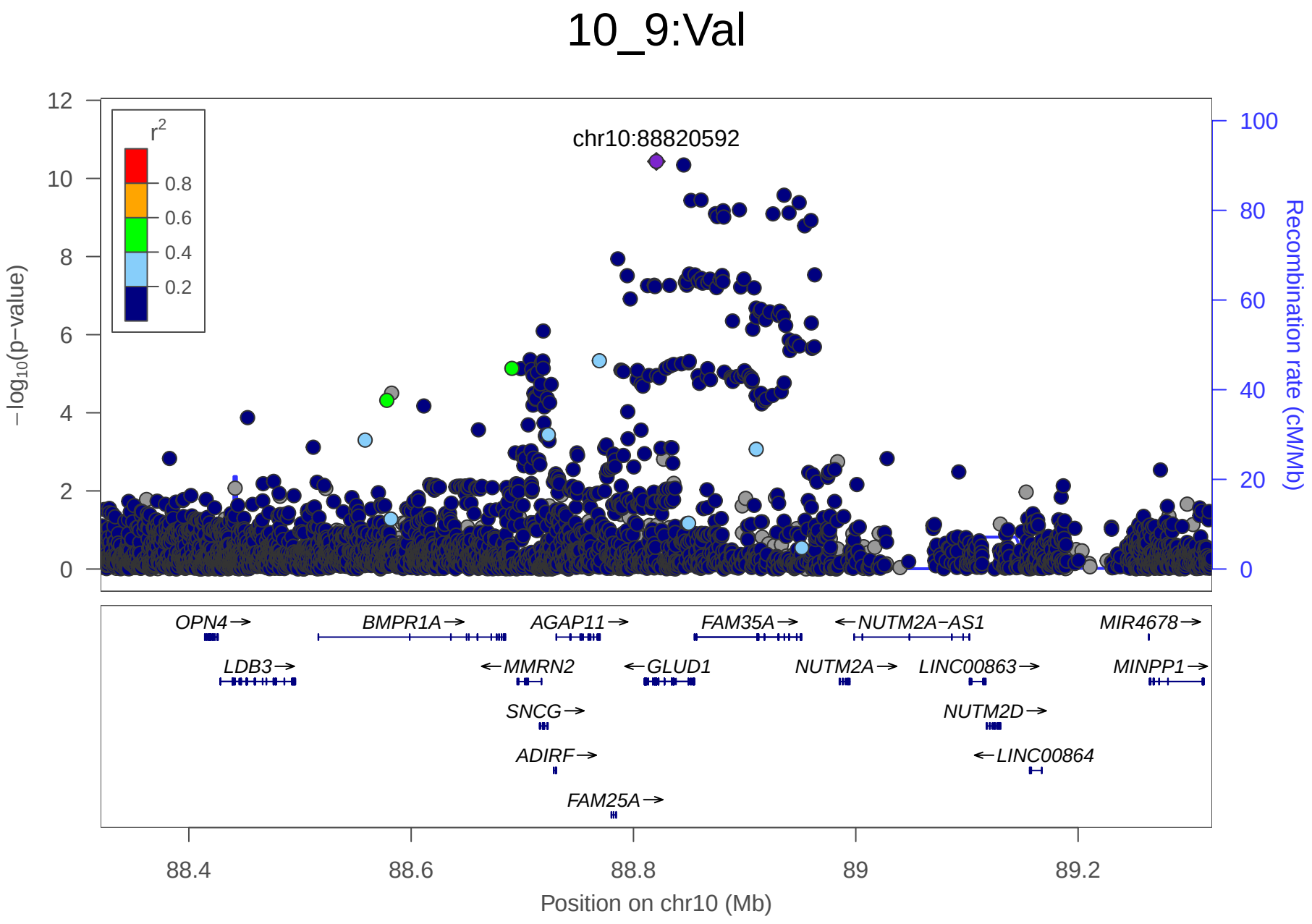
10_5:ApoA1

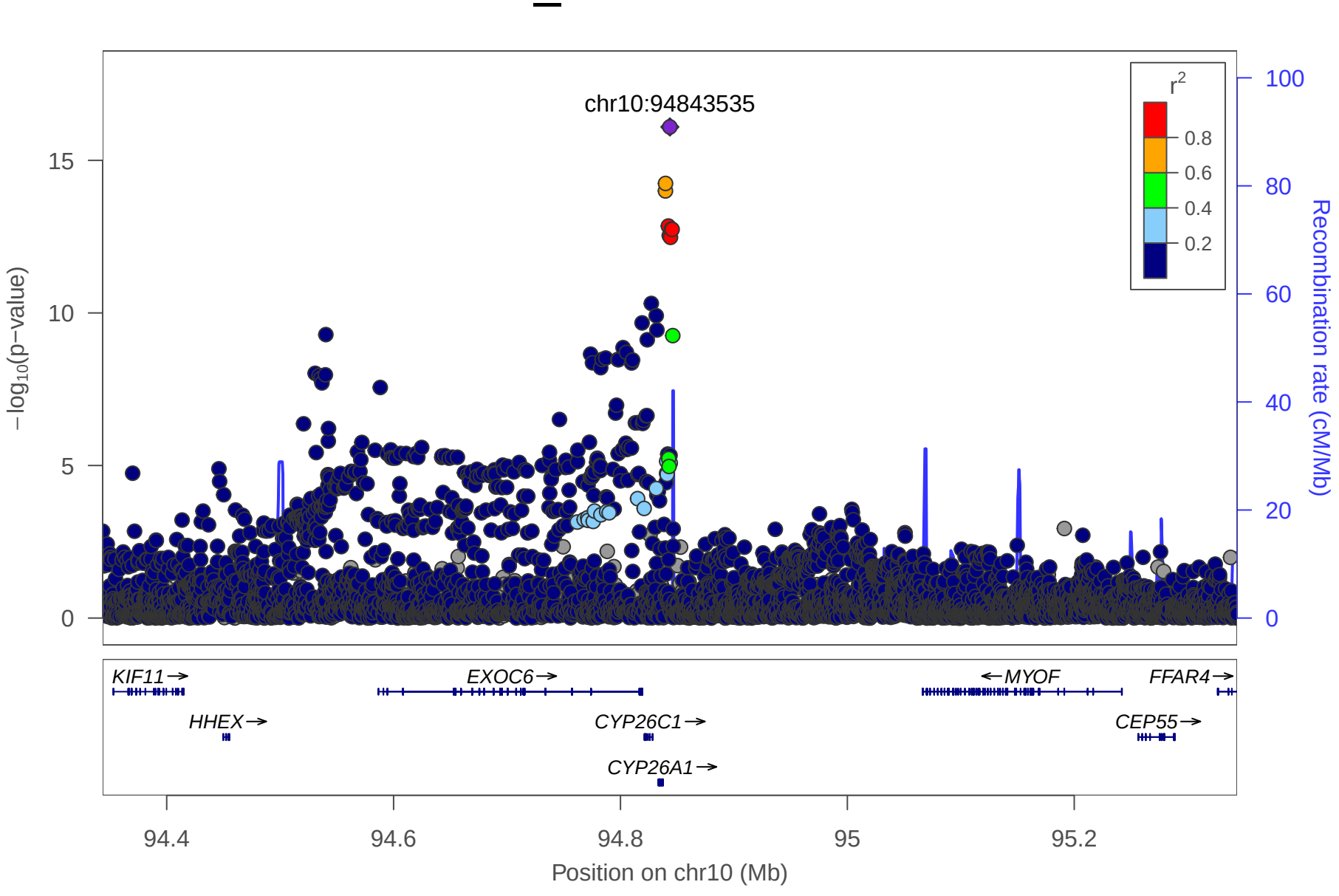

r2
0.8
0.6
0.4
0.2
chr10:46021631
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←RSU1P2
←OR13A1
ALOX5→
←ZFAND4
WASHC2C→
ANKRD30BP3→
←LOC102724323
←AGAP4
MIR3156−1→
←MARCH8
45.6
45.8
46
46.2
46.4
Position on chr10 (Mb)

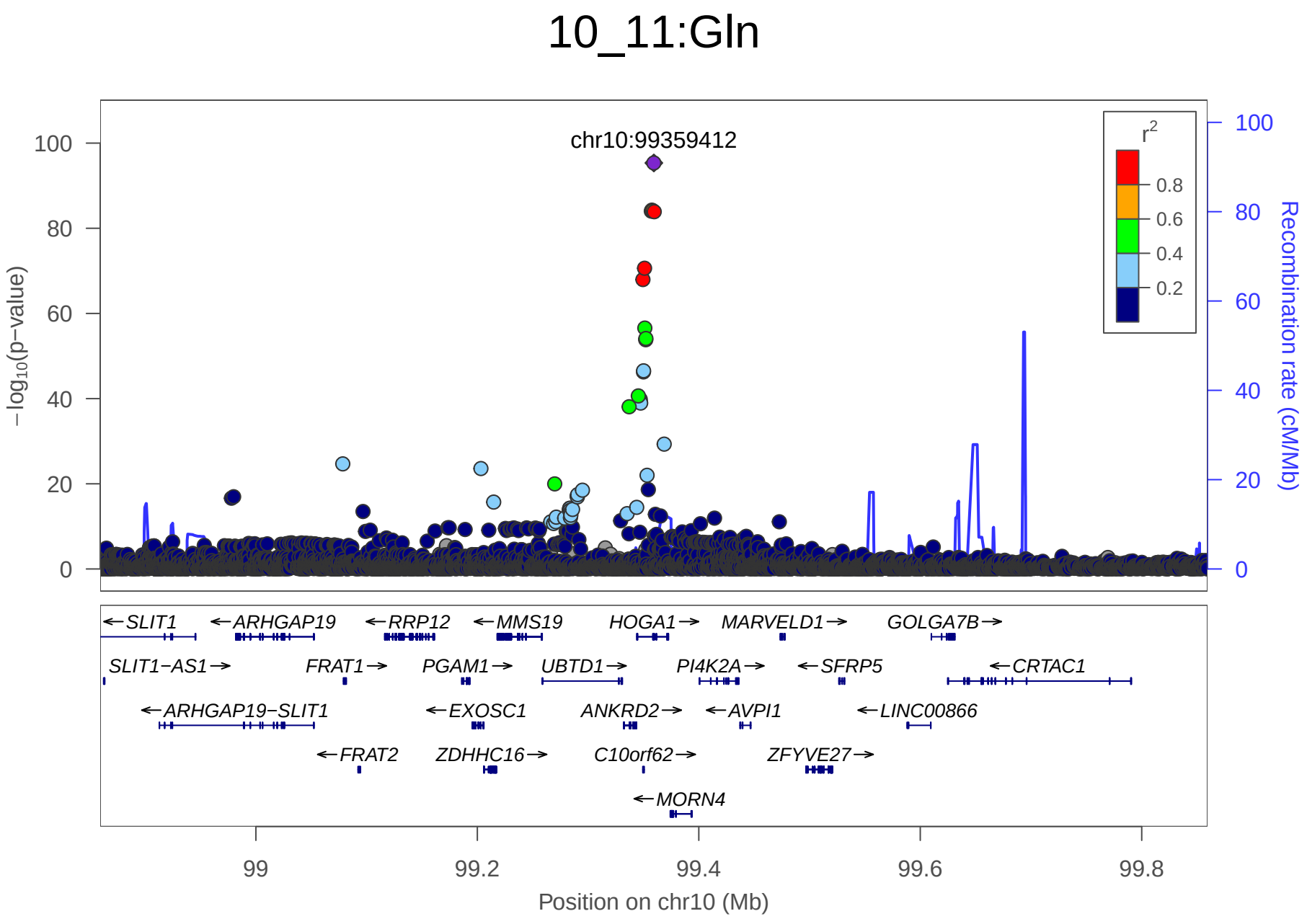

10_6:IDL−C_percent
chr10:52186368
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
TIMM23B
WASHC2A
ASAH2
SGMS1
ASAH2B
AGAP6
SGMS1−AS1
A1CF
FAM21EP
Position on chr10 (Mb)

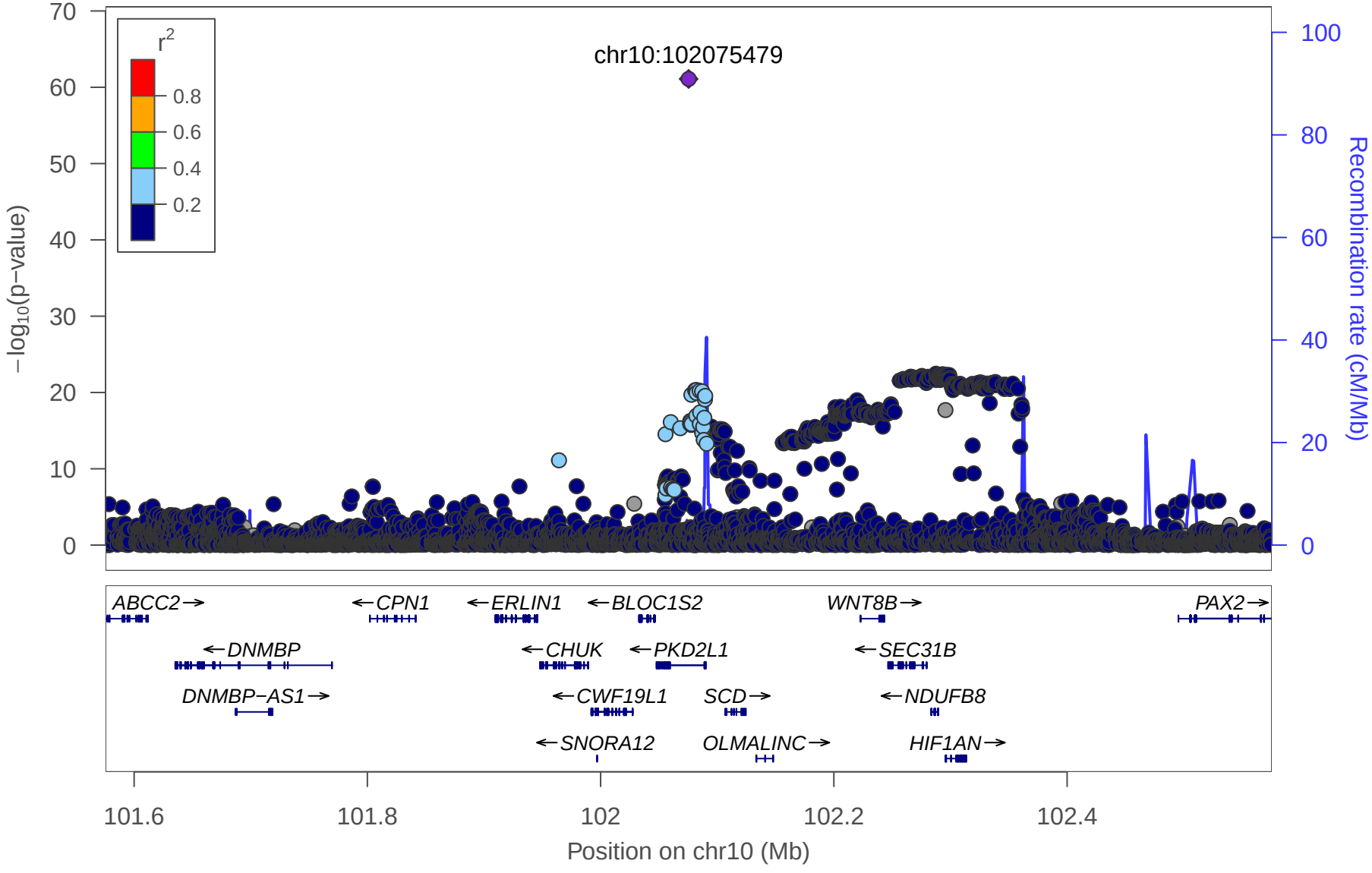

10_7:S−VLDL−TG_percent
chr10:65313819
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
NRBF2
MIR1296
REEP3
JMJD1C
LOC105378330
JMJD1C−AS1
Position on chr10 (Mb)

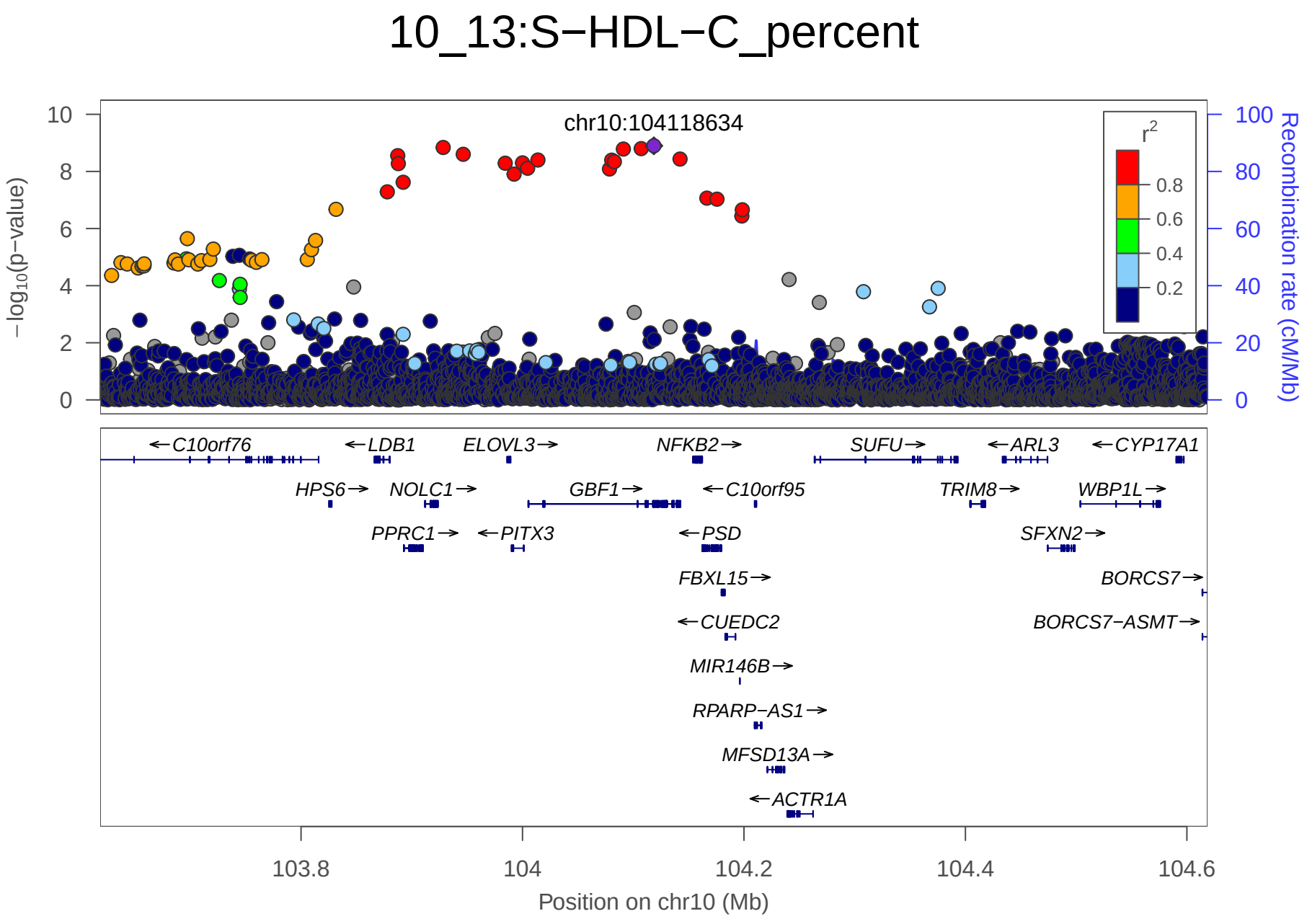

10_8:Val
chr10:74067286
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CDH23
CHST3
ASCC1
DDIT4
MICU1
MCU
PSAP
SPOCK2
ANAPC16
DNAJB12
MIR4676
Position on chr10 (Mb)

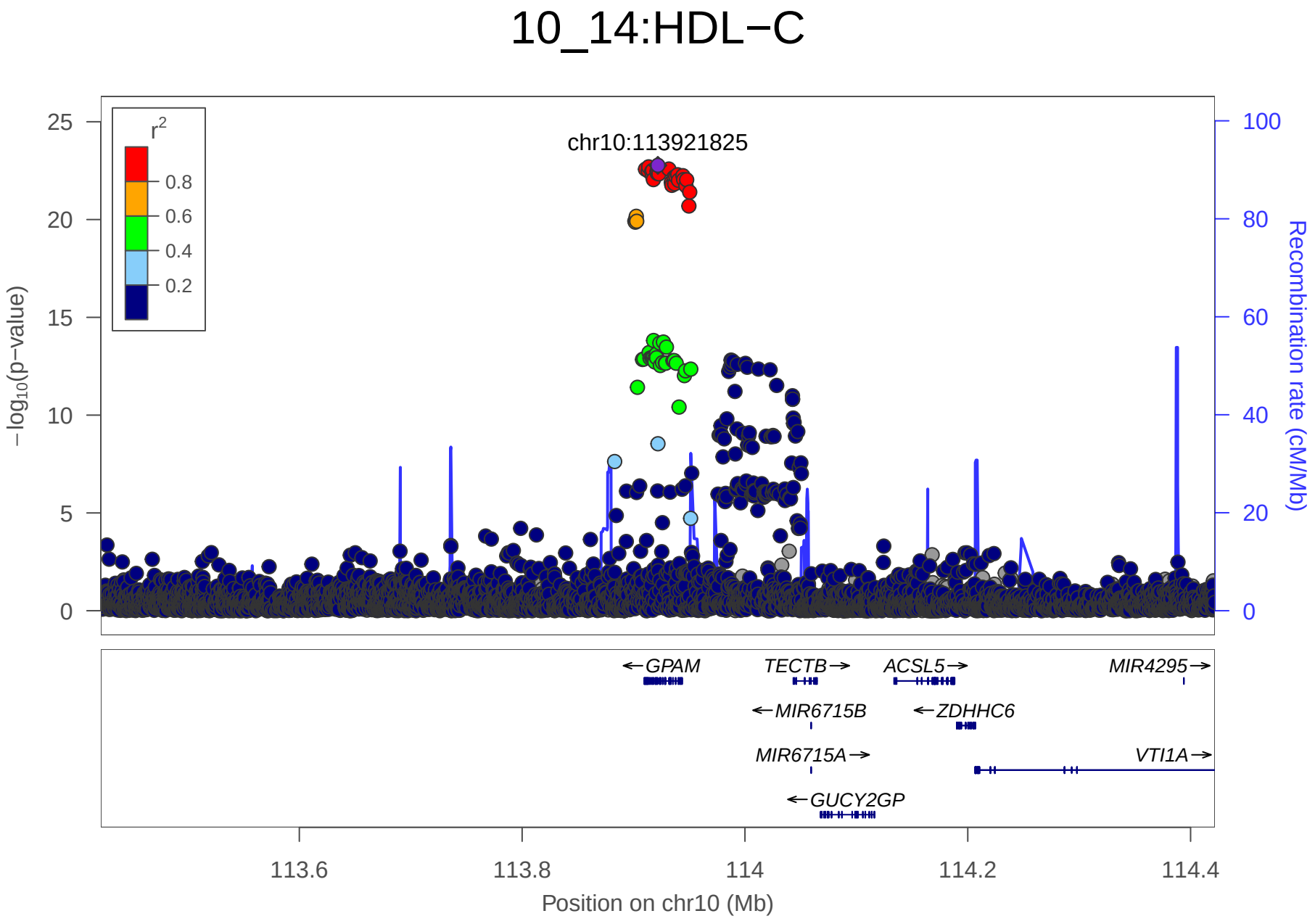

10_9:Val
chr10:88820592
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
OPN4
BMPR1A
AGAP11
FAM35A
NUTM2A−AS1
MIR4678
LDB3
MMRN2
GLUD1
NUTM2A
LINC00863
MINPP1
SNCG
NUTM2D
ADIRF
LINC00864
FAM25A
Position on chr10 (Mb)

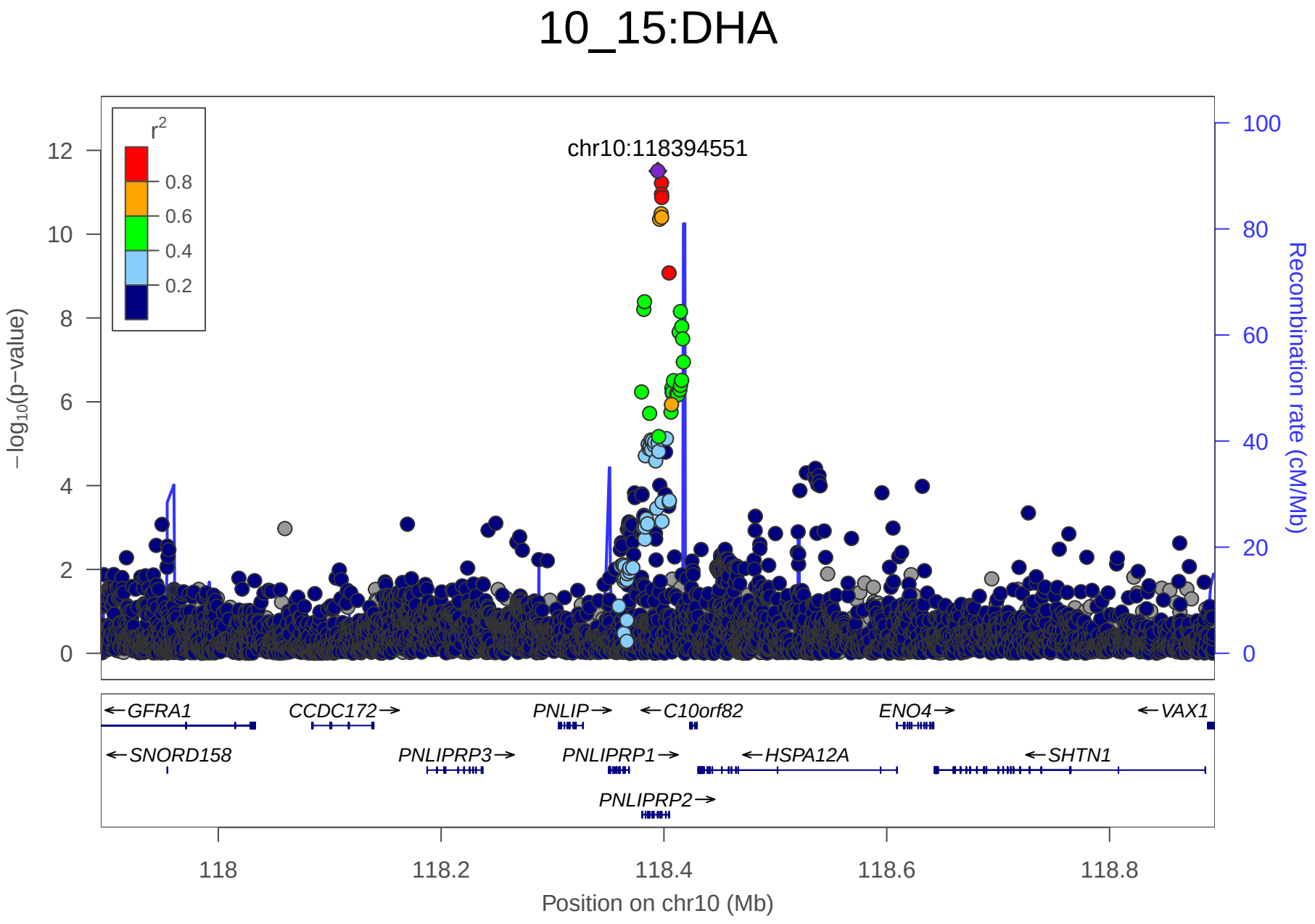

10_10:S−VLDL−L
chr10:94843535
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
KIF11
EXOC6
MYOF
FFAR4
HHEX
CYP26C1
CEP55
CYP26A1
Position on chr10 (Mb)

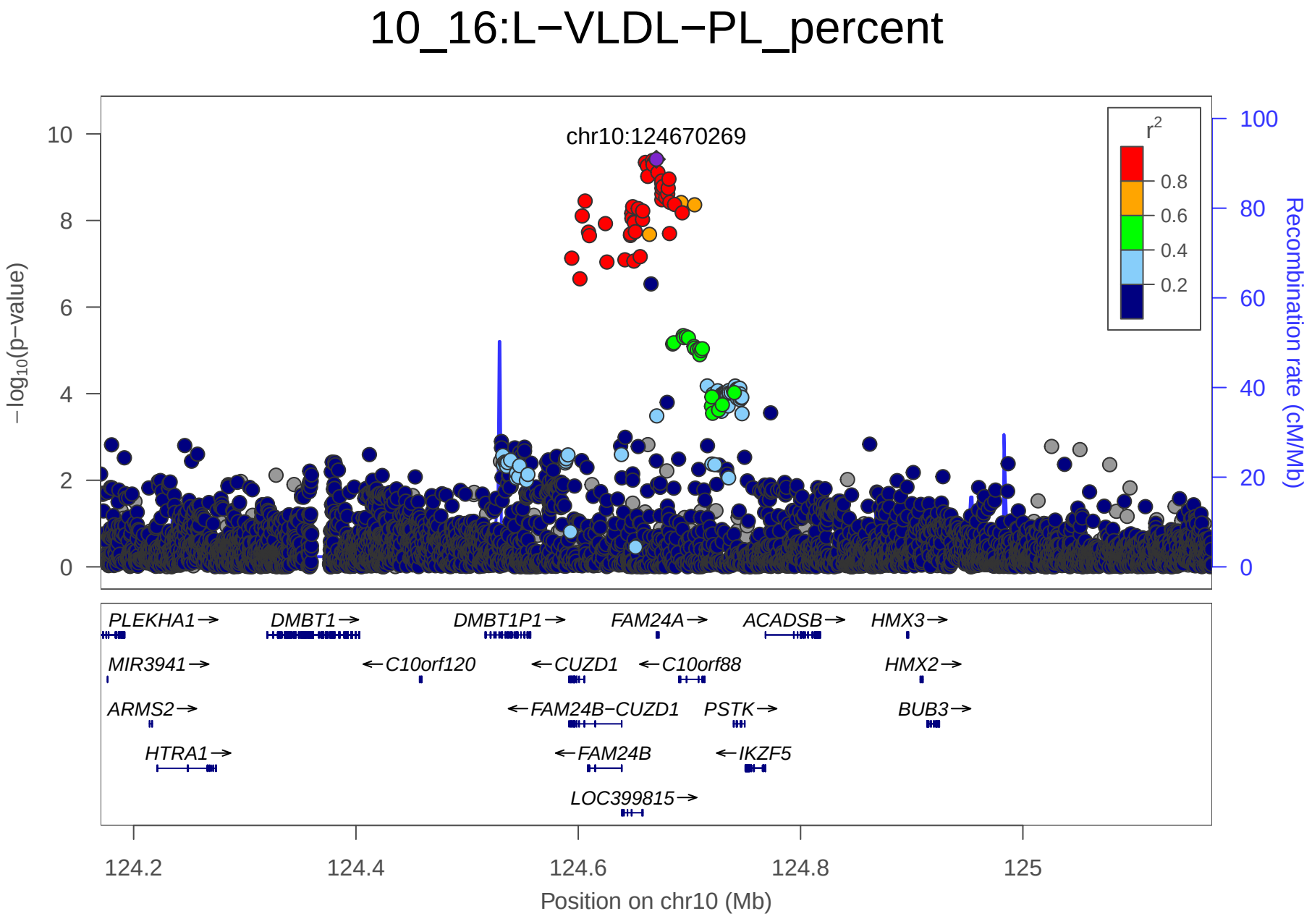

10_11:Gln
chr10:99359412
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
100
80
60
40
20
0
SLIT1
ARHGAP19
RRP12
MMS19
HOGA1
MARVELD1
GOLGA7B
SLIT1−AS1
FRAT1
PGAM1
UBTD1
PI4K2A
SFRP5
CRTAC1
ARHGAP19−SLIT1
EXOSC1
ANKRD2
AVPI1
LINC00866
FRAT2
ZDHHC16
C10orf62
ZFYVE27
MORN4
99
99.2
99.4
99.6
99.8
Position on chr10 (Mb)

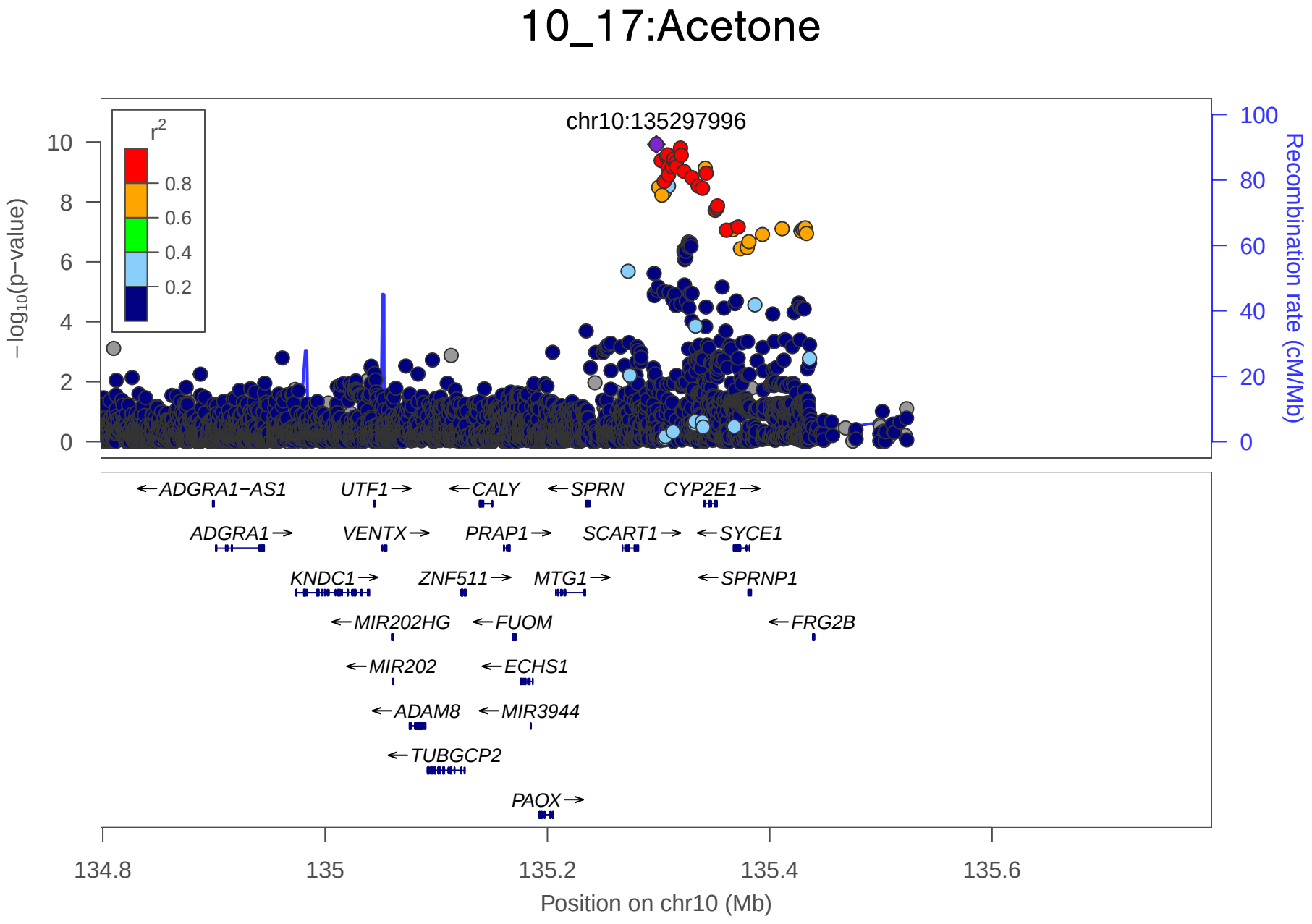

10_12:SFAbyFA
chr10:102075479
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ABCC2
CPN1
ERLIN1
BLOC1S2
WNT8B
PAX2
DNMBP
CHUK
PKD2L1
SEC31B
DNMBP−AS1
CWF19L1
SCD
NDUFB8
SNORA12
OLMALINC
HIF1AN
Position on chr10 (Mb)

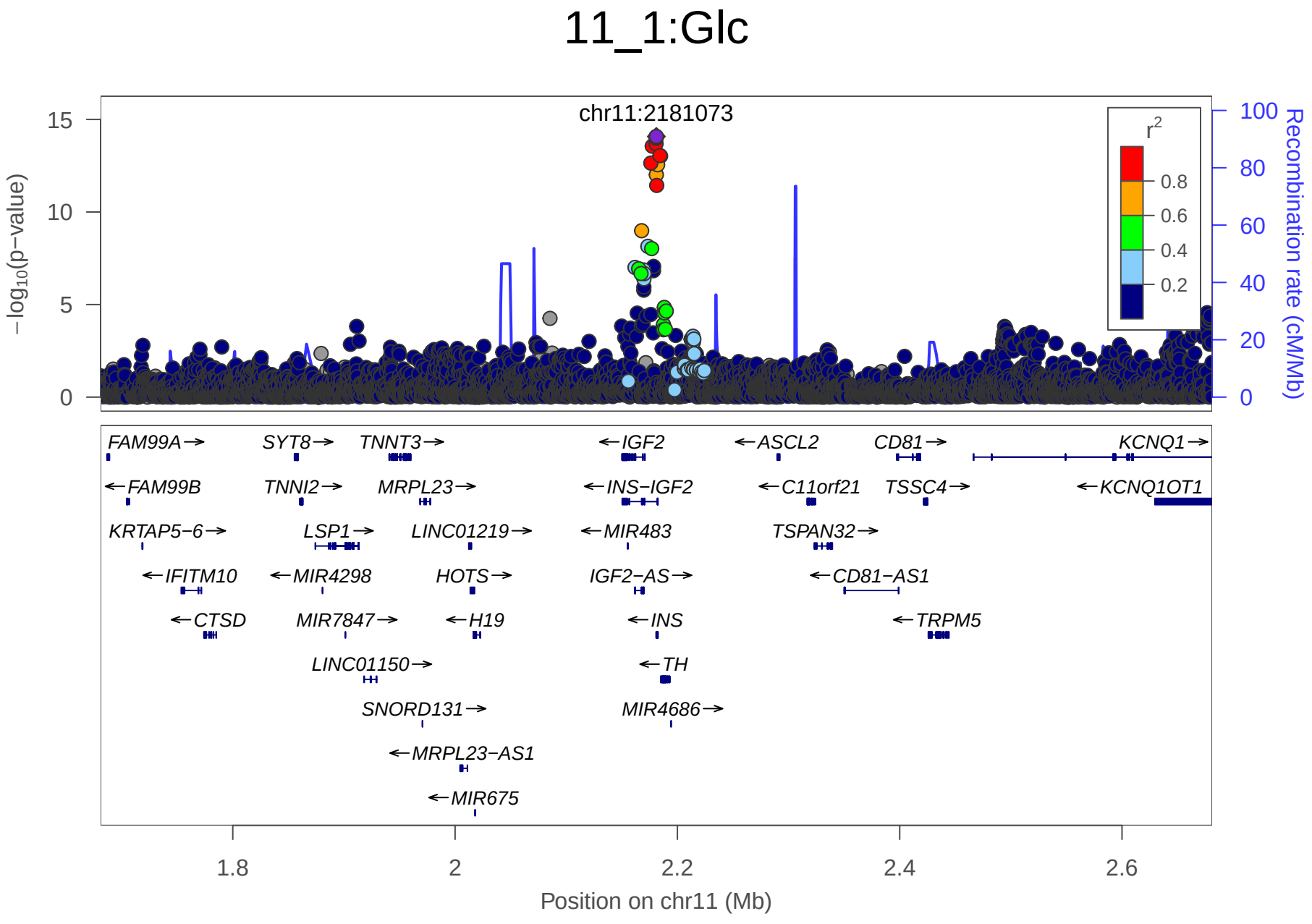

10_13:S−HDL−C_percent
chr10:104118634
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
C10orf76
LDB1
ELOVL3
NFKB2
SUFU
ARL3
CYP17A1
HPS6
NOLC1
GBF1
C10orf95
TRIM8
WBP1L
PPRC1
PITX3
PSD
SFXN2
FBXL15
BORCS7
CUEDC2
BORCS7−ASMT
MIR146B
RPARP−AS1
MFSD13A
ACTR1A
103.8
104
104.2
104.4
104.6
Position on chr10 (Mb)

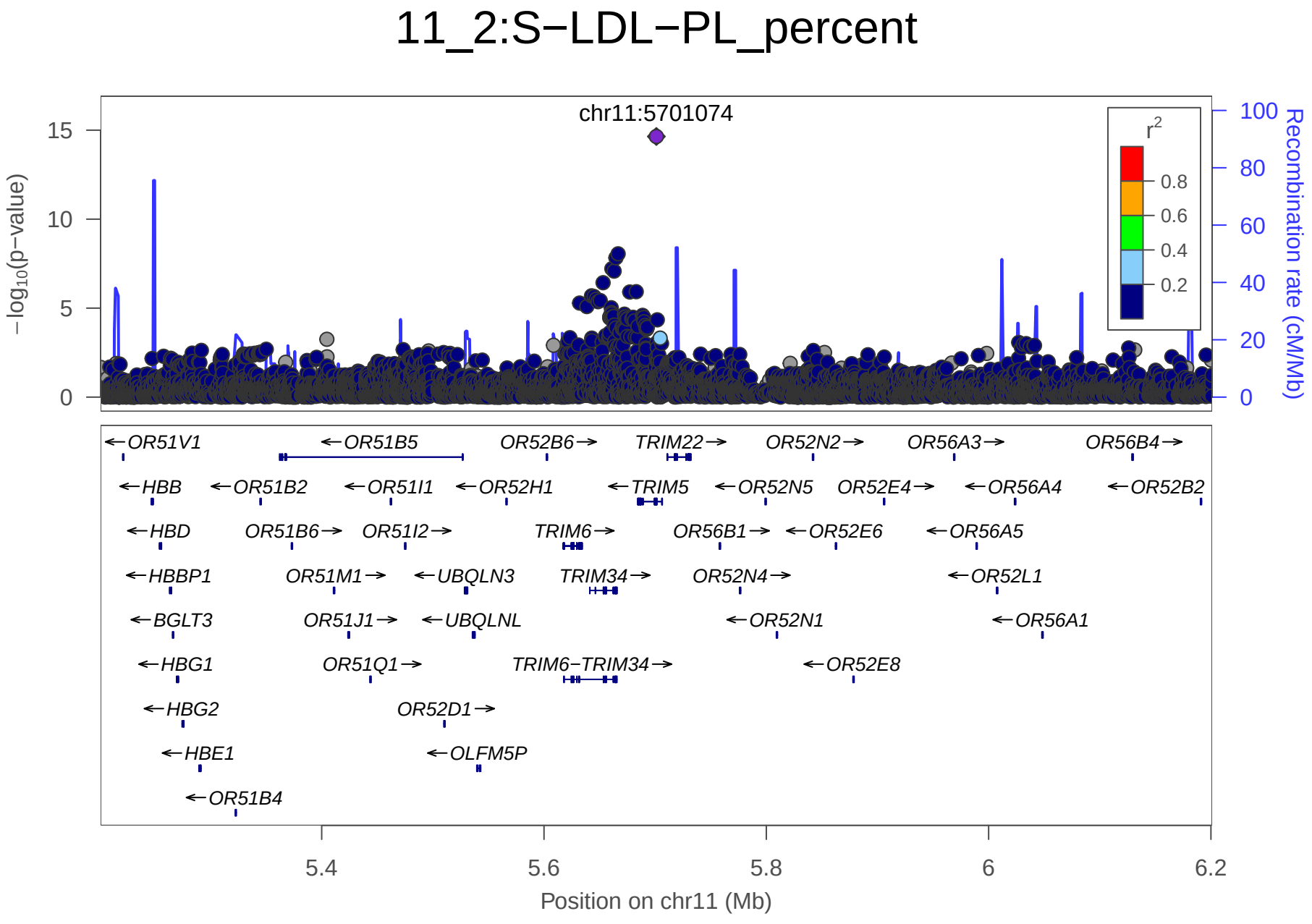

10_14:HDL−C
chr10:113921825
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
GPAM
TECTB
ACSL5
MIR4295
MIR6715B
ZDHHC6
MIR6715A
VTI1A
GUCY2GP
Position on chr10 (Mb)

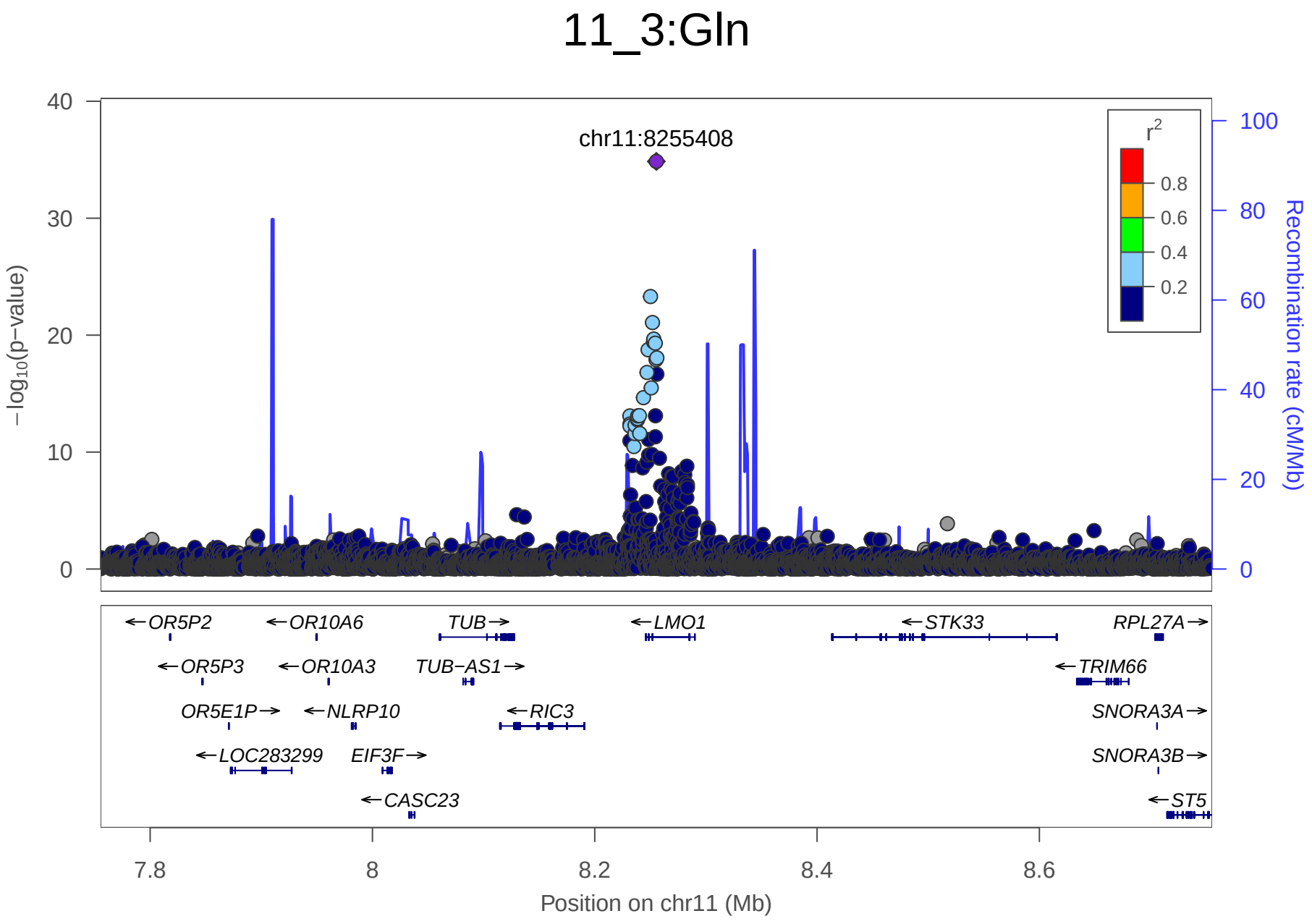

10_15:DHA
r2
0.8
0.6
0.4
0.2
chr10:118394551
−log10(p−value)
Recombination rate (cM/Mb)
GFRA1
CCDC172
PNLIP
C10orf82
ENO4
VAX1
SNORD158
PNLIPRP3
PNLIPRP1
HSPA12A
SHTN1
PNLIPRP2
Position on chr10 (Mb)

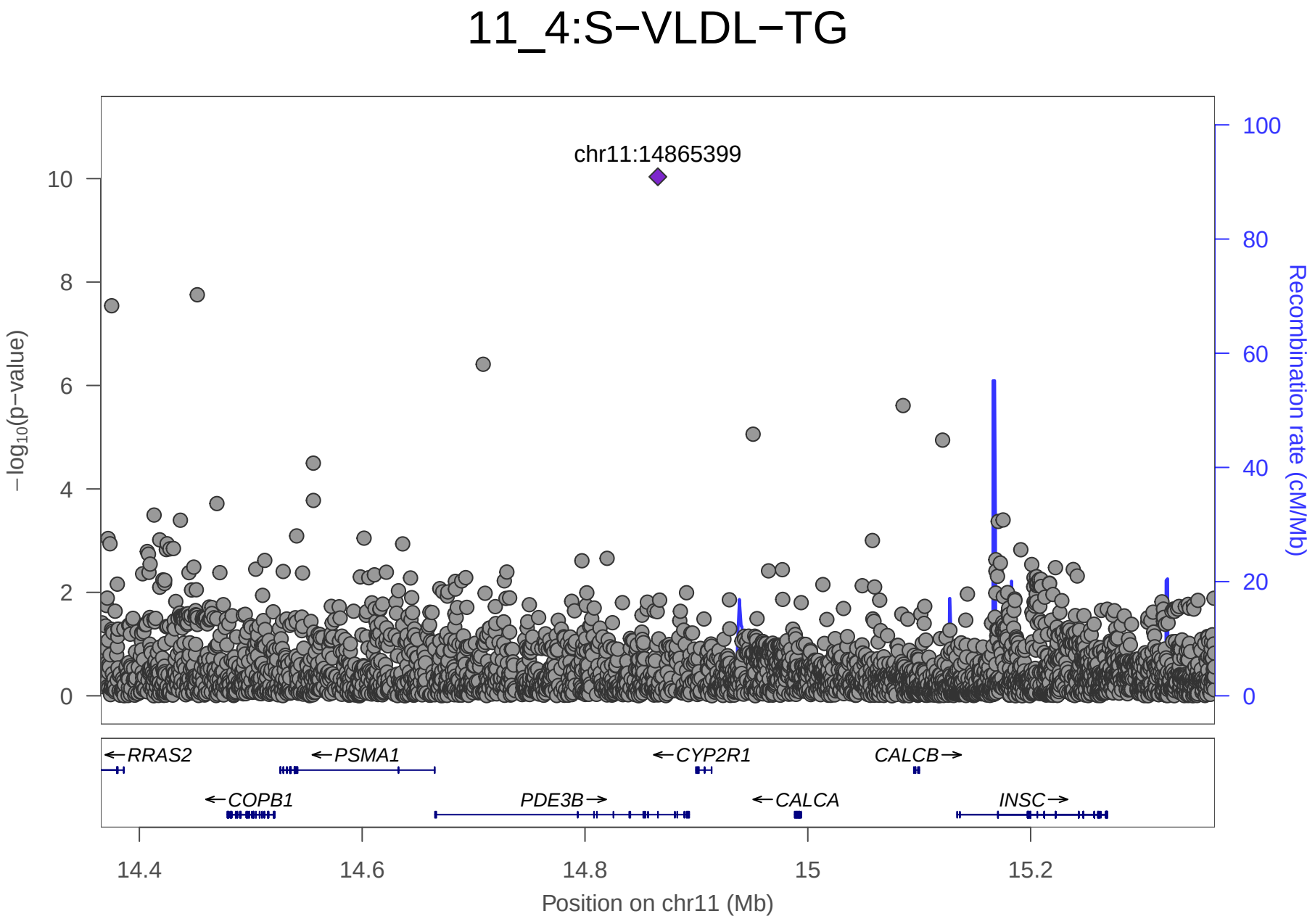

10_16:L−VLDL−PL_percent
chr10:124670269
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PLEKHA1
DMBT1
DMBT1P1
FAM24A
ACADSB
HMX3
MIR3941
C10orf120
CUZD1
C10orf88
HMX2
ARMS2
FAM24B−CUZD1
PSTK
BUB3
HTRA1
FAM24B
IKZF5
LOC399815
Position on chr10 (Mb)


10_17:Acetone
chr10:135297996
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ADGRA1−AS1
UTF1
CALY
SPRN
CYP2E1
ADGRA1
VENTX
PRAP1
SCART1
SYCE1
KNDC1
ZNF511
MTG1
SPRNP1
MIR202HG
FUOM
FRG2B
MIR202
ECHS1
ADAM8
MIR3944
TUBGCP2
PAOX
134.8
135
135.2
135.4
135.6
Position on chr10 (Mb)

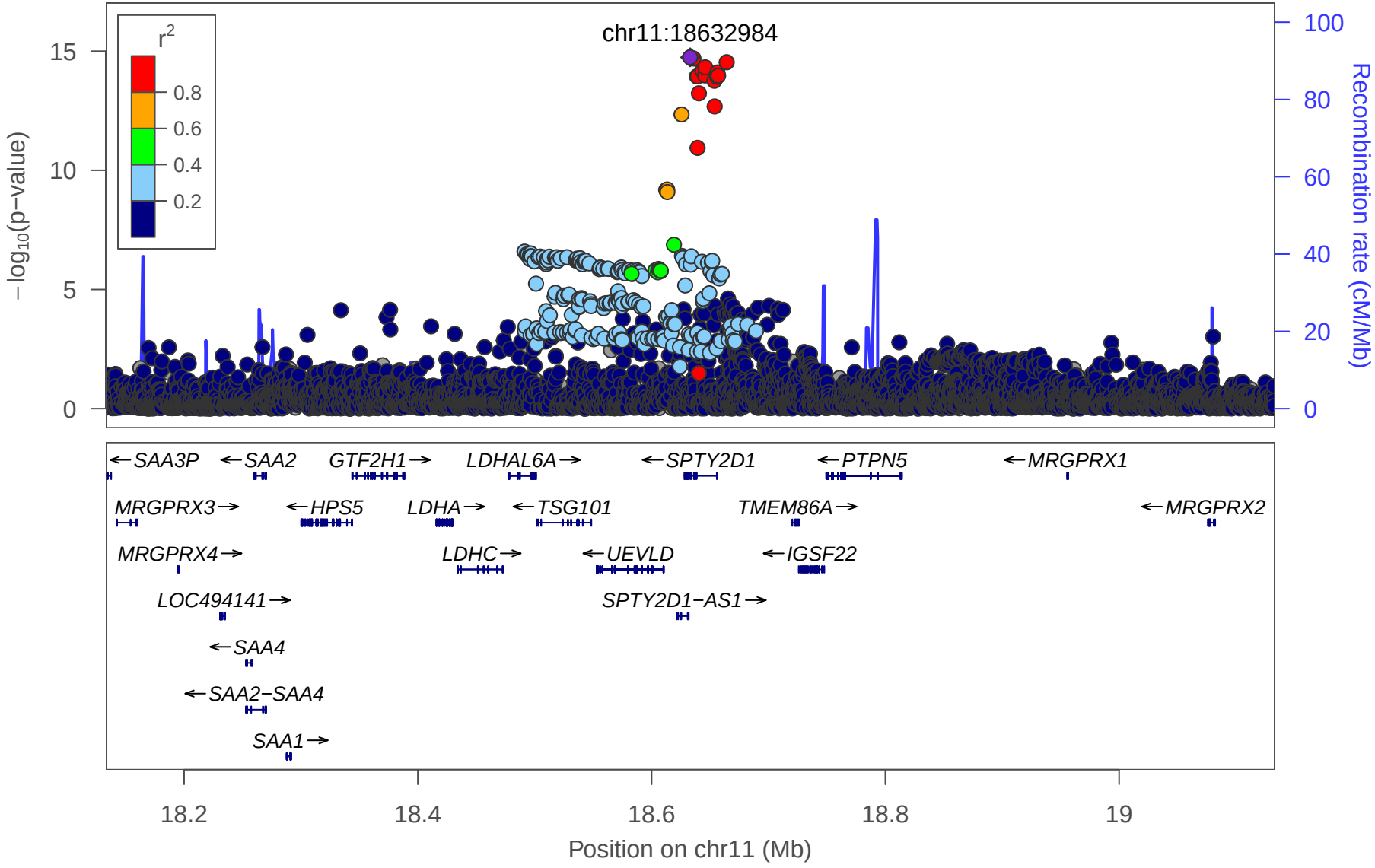

11_1:Glc
chr11:2181073
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FAM99A
SYT8
TNNT3
IGF2
ASCL2
CD81
KCNQ1
FAM99B
TNNI2
MRPL23
INS−IGF2
C11orf21
TSSC4
KCNQ1OT1
KRTAP5−6
LSP1
LINC01219
MIR483
TSPAN32
IFITM10
MIR4298
HOTS
IGF2−AS
CD81−AS1
CTSD
MIR7847
H19
INS
TRPM5
LINC01150
TH
SNORD131
MIR4686
MRPL23−AS1
MIR675
Position on chr11 (Mb)

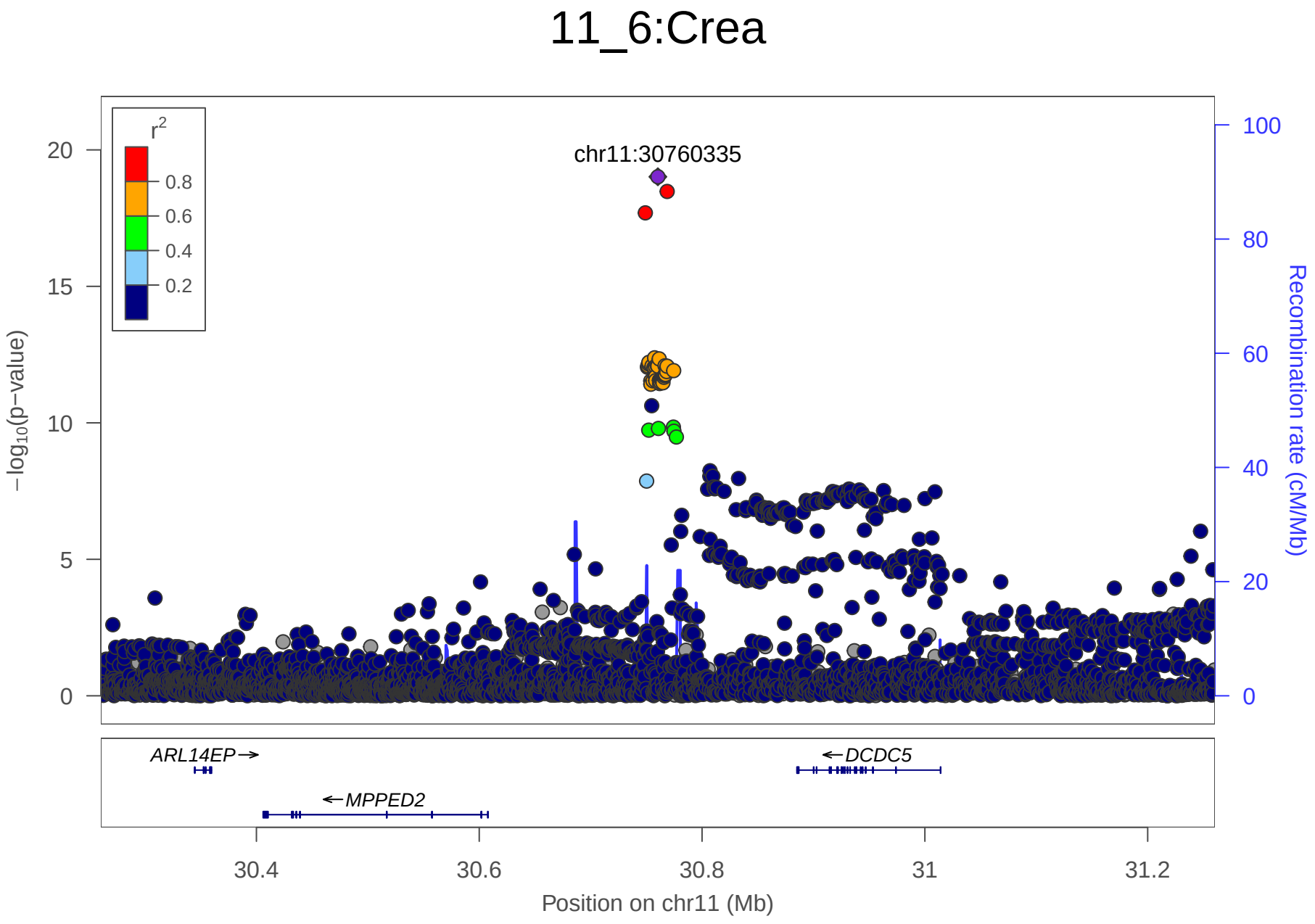

11_2:S−LDL−PL_percent
chr11:5701074
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
OR51V1
OR51B5
OR52B6
TRIM22
OR52N2
OR56A3
OR56B4
HBB
OR51B2
OR51I1
OR52H1
TRIM5
OR52N5
OR52E4
OR56A4
OR52B2
HBD
OR51B6
OR51I2
TRIM6
OR56B1
OR52E6
OR56A5
HBBP1
OR51M1
UBQLN3
TRIM34
OR52N4
OR52L1
BGLT3
OR51J1
UBQLNL
OR52N1
OR56A1
HBG1
OR51Q1
TRIM6−TRIM34
OR52E8
HBG2
OR52D1
HBE1
OLFM5P
OR51B4
5.4
5.6
5.8
6
6.2
Position on chr11 (Mb)

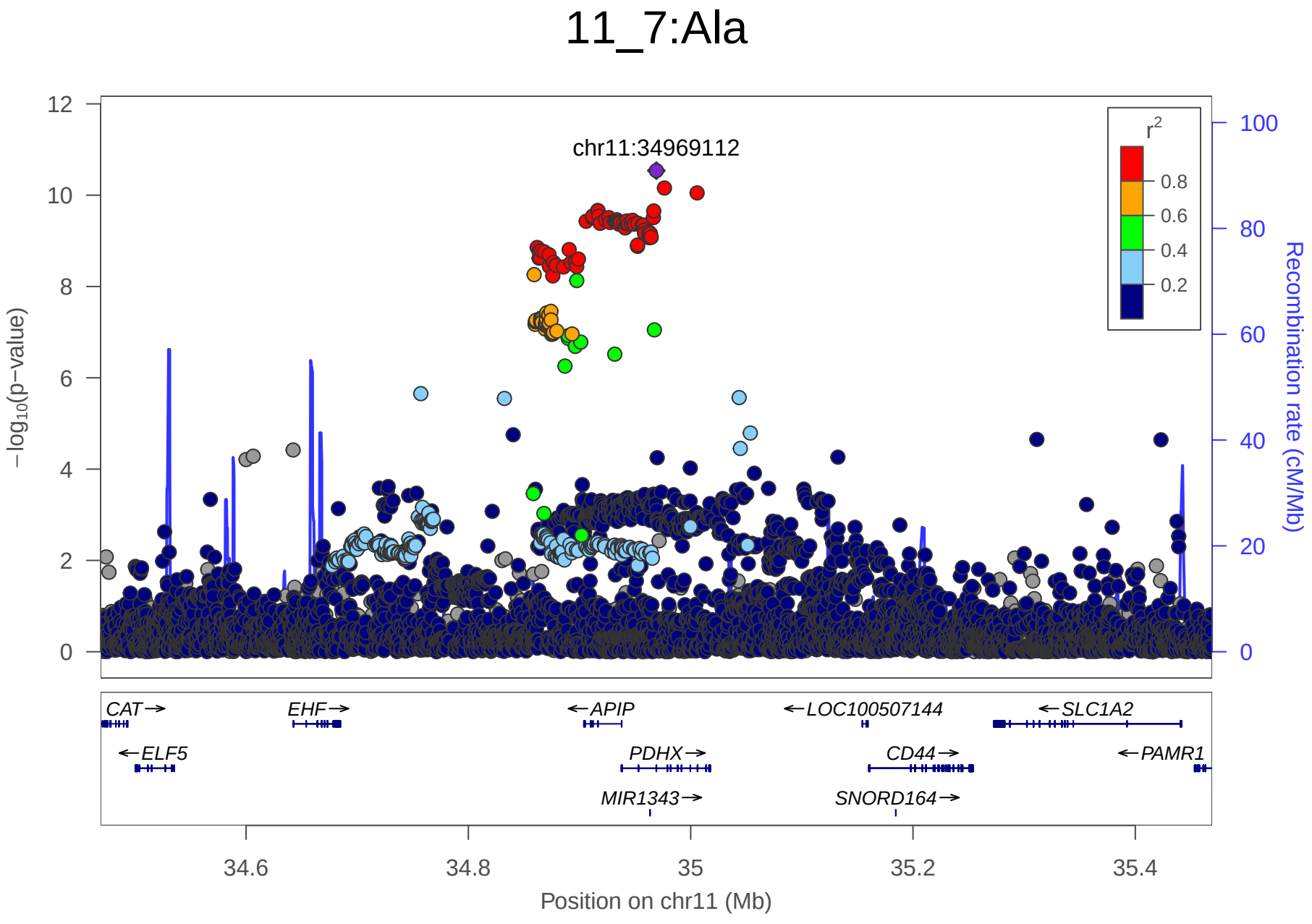

11_3:Gln
chr11:8255408
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
40
30
20
10
0
100
80
60
40
20
0
OR5P2
OR10A6
TUB
LMO1
STK33
RPL27A
OR5P3
OR10A3
TUB−AS1
TRIM66
OR5E1P
NLRP10
RIC3
SNORA3A
LOC283299
EIF3F
SNORA3B
CASC23
ST5
7.8
8
8.2
8.4
8.6
Position on chr11 (Mb)


11_4:S−VLDL−TG
chr11:14865399
10
8
6
4
2
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←RRAS2
←PSMA1
←CYP2R1
CALCB→
←COPB1
PDE3B→
←CALCA
INSC→
14.4
14.6
14.8
15
15.2
Position on chr11 (Mb)

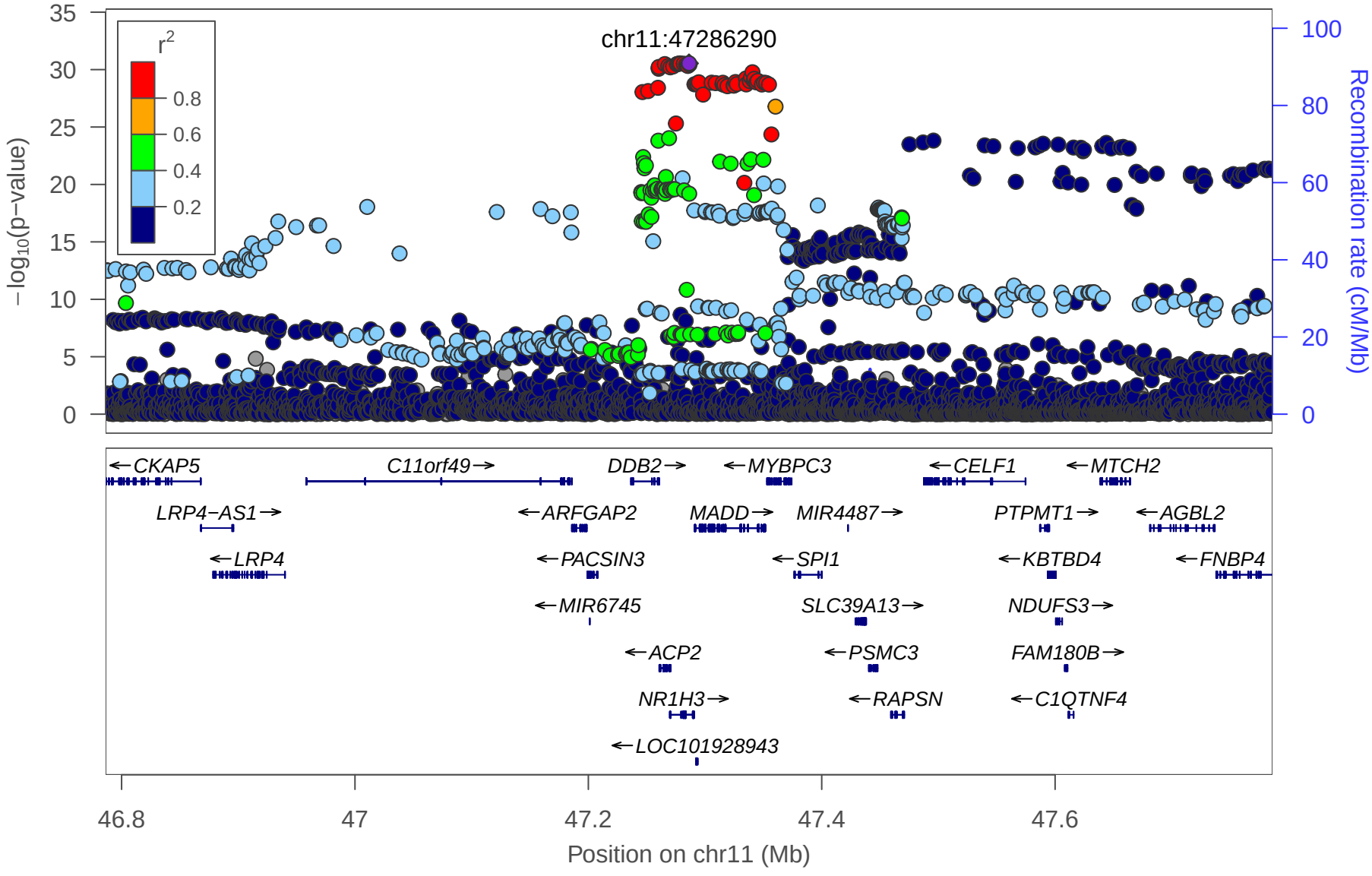
11_5:M−LDL−TG

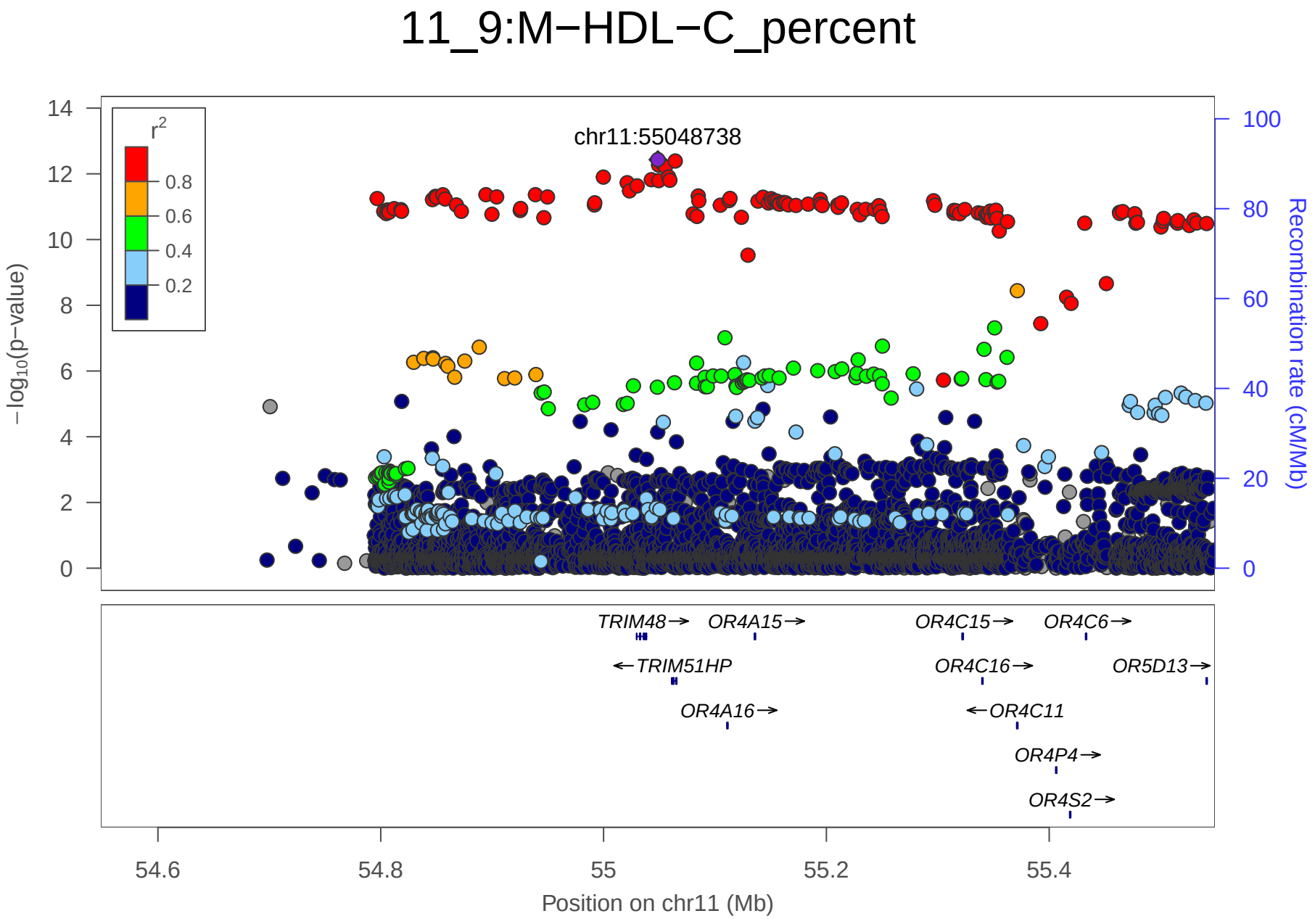

chr11:18632984
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SAA3P
SAA2
GTF2H1
LDHAL6A
SPTY2D1
PTPN5
MRGPRX1
MRGPRX3
HPS5
LDHA
TSG101
TMEM86A
MRGPRX2
MRGPRX4
LDHC
UEVLD
IGSF22
LOC494141
SPTY2D1−AS1
SAA4
SAA2−SAA4
SAA1
Position on chr11 (Mb)


11_6:Crea
r2
0.8
0.6
0.4
0.2
chr11:30760335
20
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
ARL14EP
DCDC5
MPPED2
30.4
30.6
30.8
31
31.2
Position on chr11 (Mb)

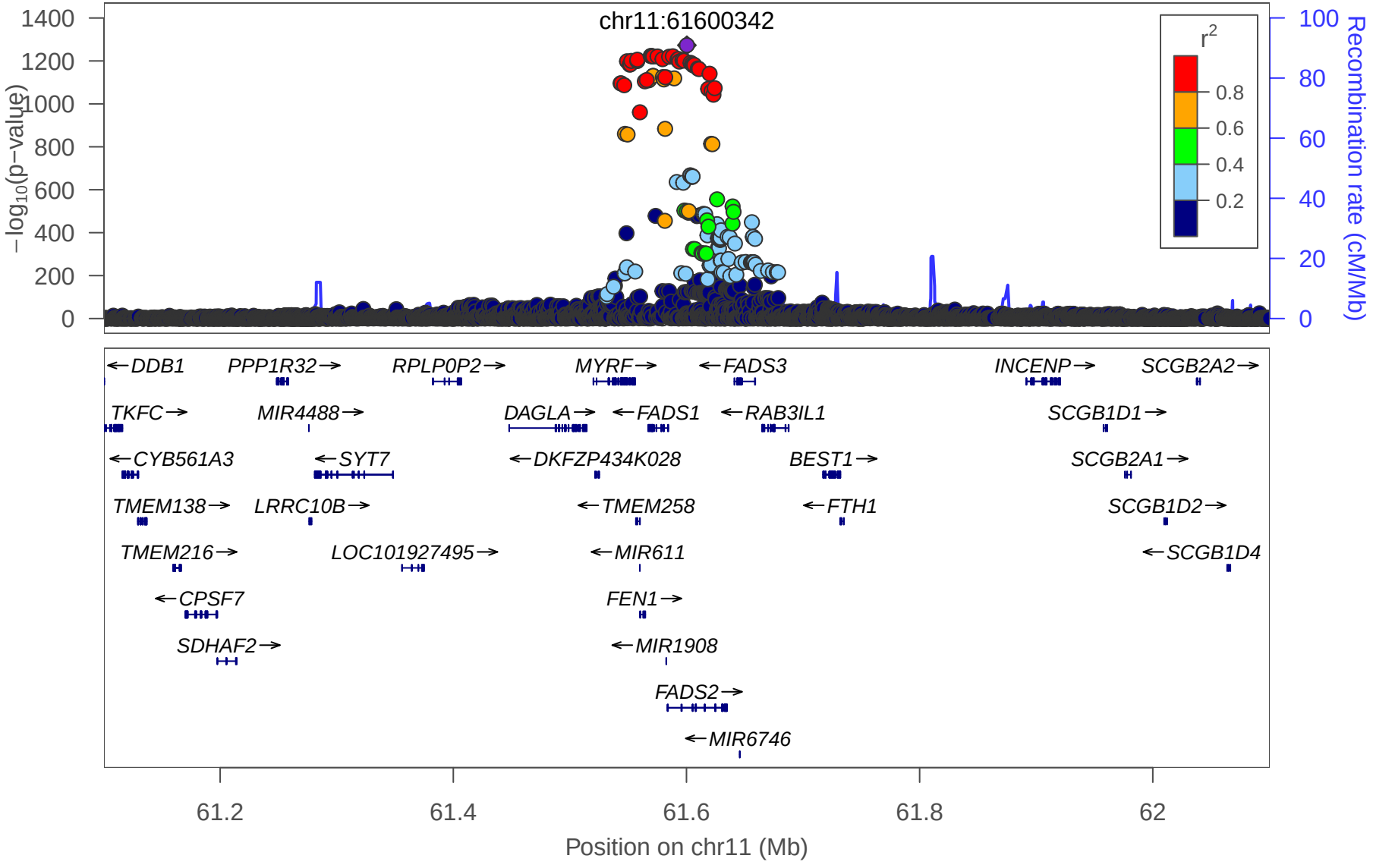

11_7:Ala
chr11:34969112
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CAT
EHF
APIP
LOC100507144
SLC1A2
ELF5
PDHX
CD44
PAMR1
MIR1343
SNORD164
Position on chr11 (Mb)

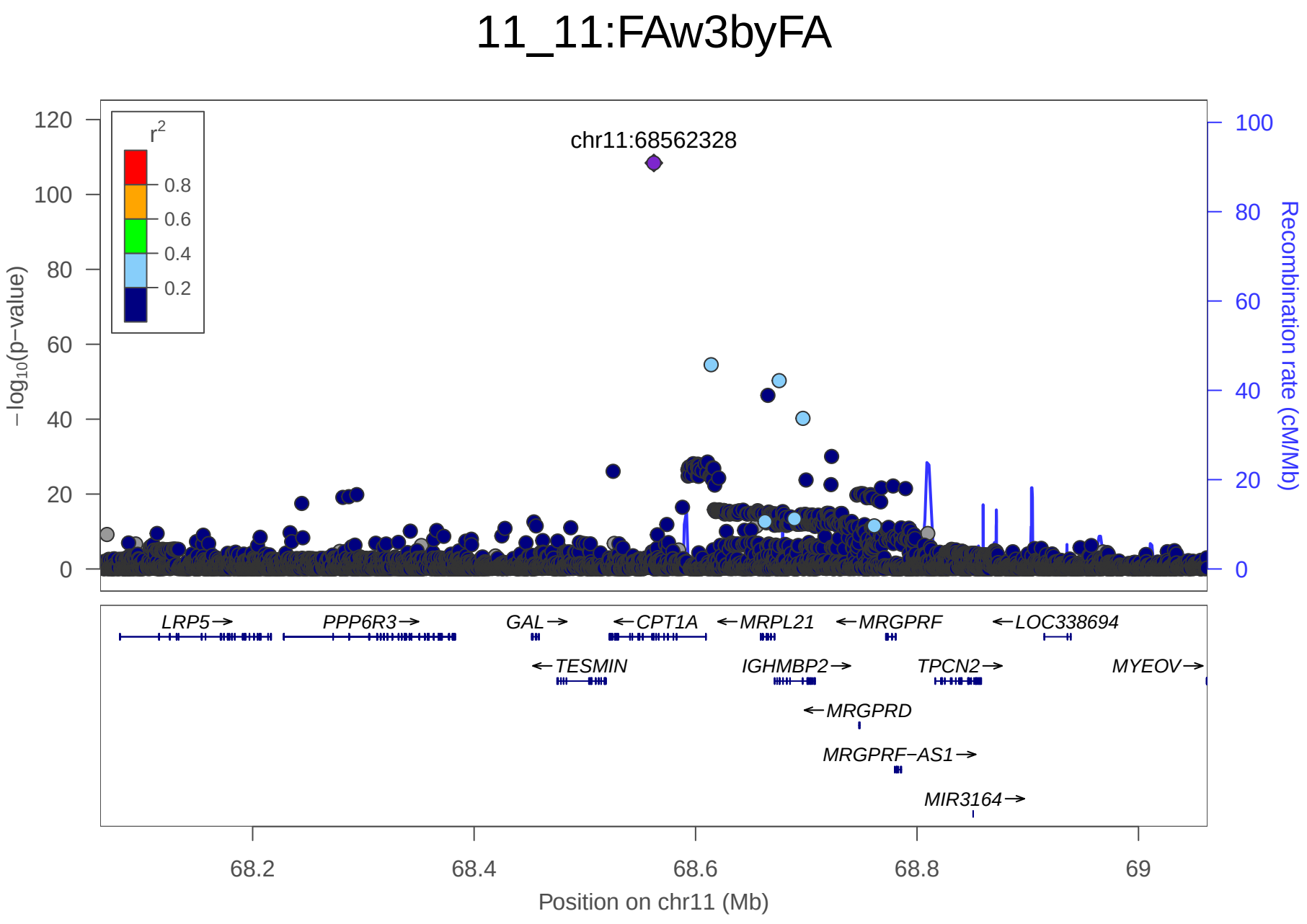
11_8:HDL−D

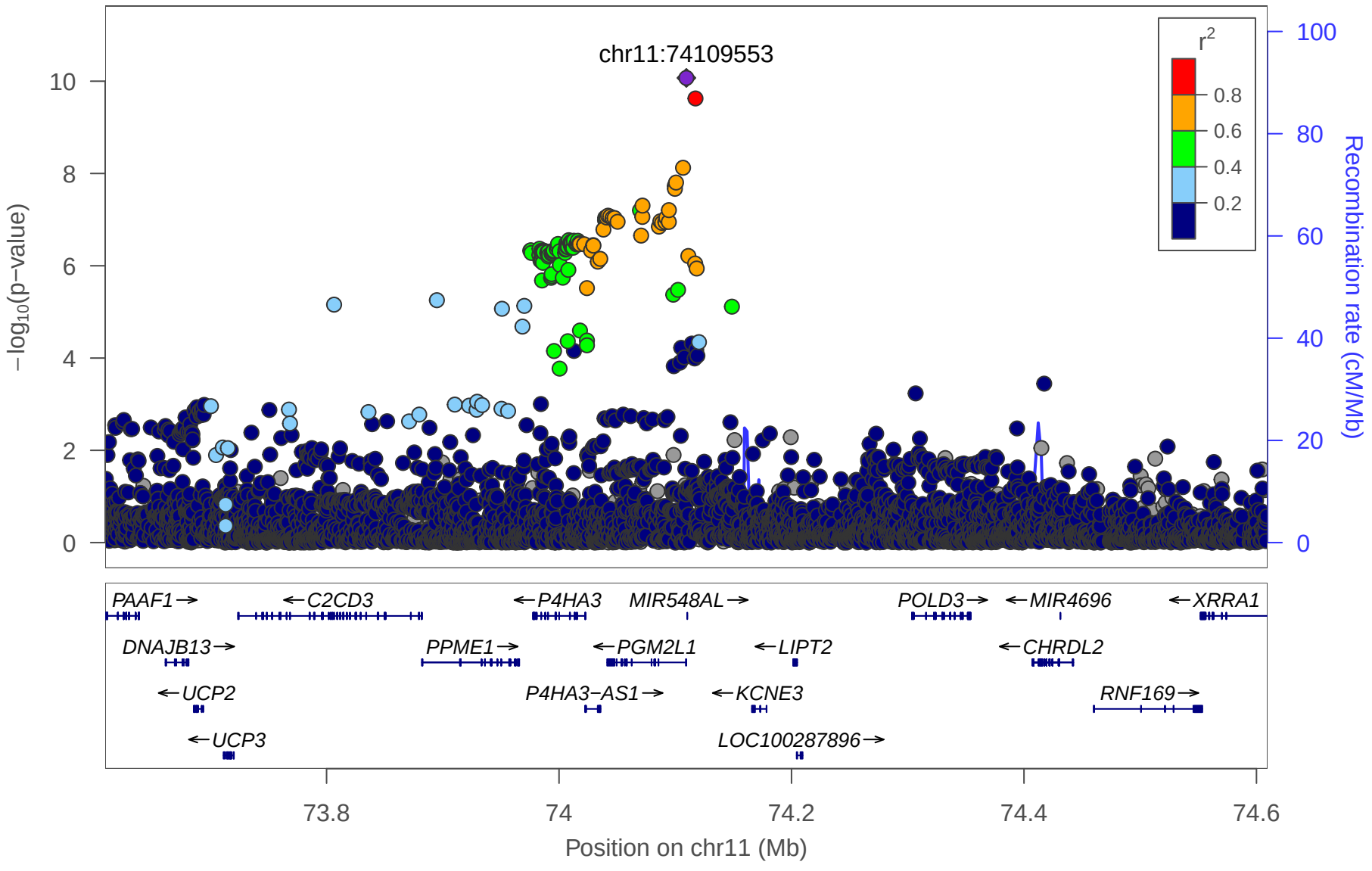

chr11:47286290
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CKAP5
C11orf49
DDB2
MYBPC3
CELF1
MTCH2
LRP4−AS1
ARFGAP2
MADD
MIR4487
PTPMT1
AGBL2
LRP4
PACSIN3
SPI1
KBTBD4
FNBP4
MIR6745
SLC39A13
NDUFS3
ACP2
PSMC3
FAM180B
NR1H3
RAPSN
C1QTNF4
LOC101928943
46.8
47
47.2
47.4
47.6
Position on chr11 (Mb)

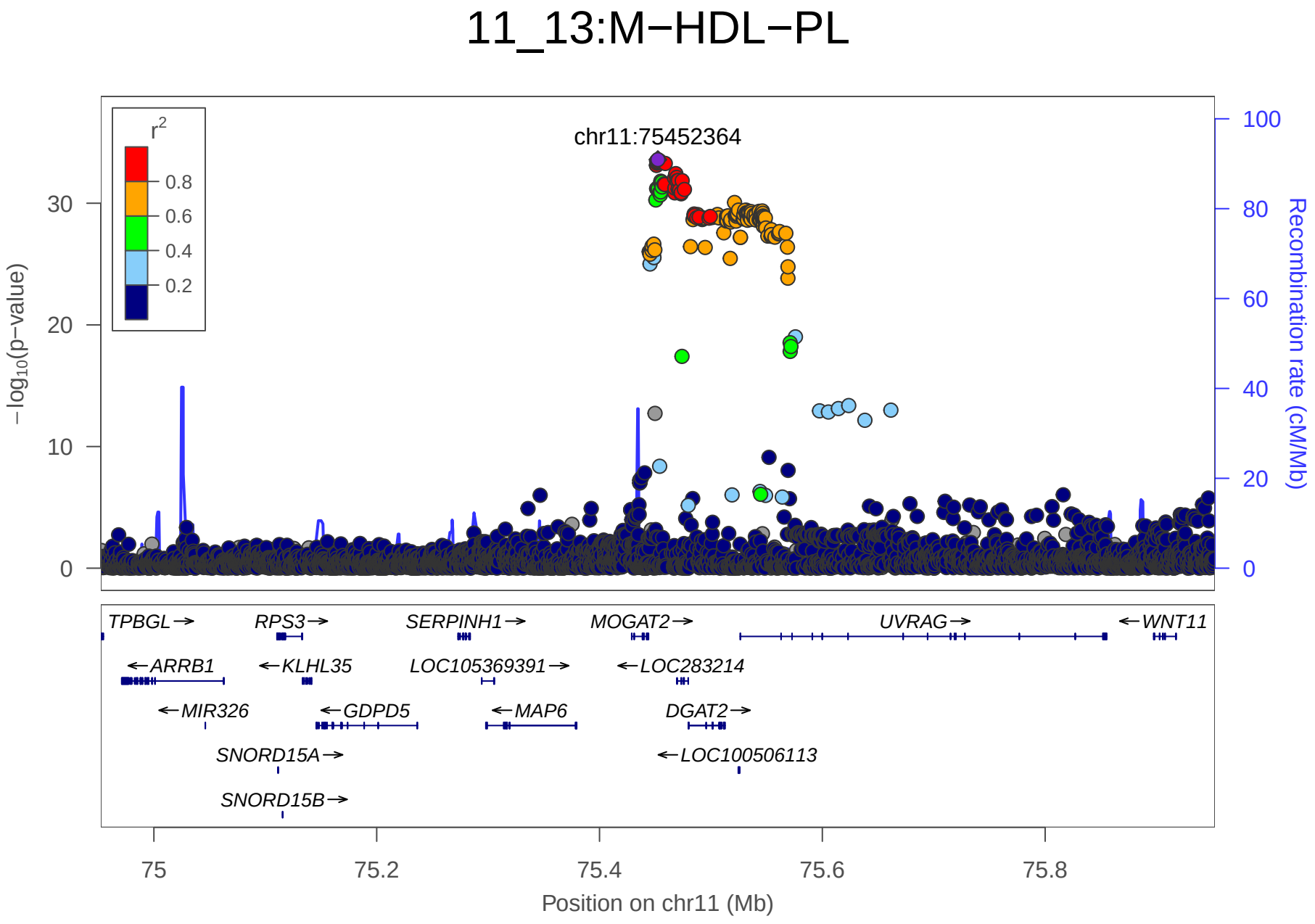

11_9:M−HDL−C_percent
chr11:55048738
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
TRIM48
OR4A15
OR4C15
OR4C6
TRIM51HP
OR4C16
OR5D13
OR4A16
OR4C11
OR4P4
OR4S2
Position on chr11 (Mb)

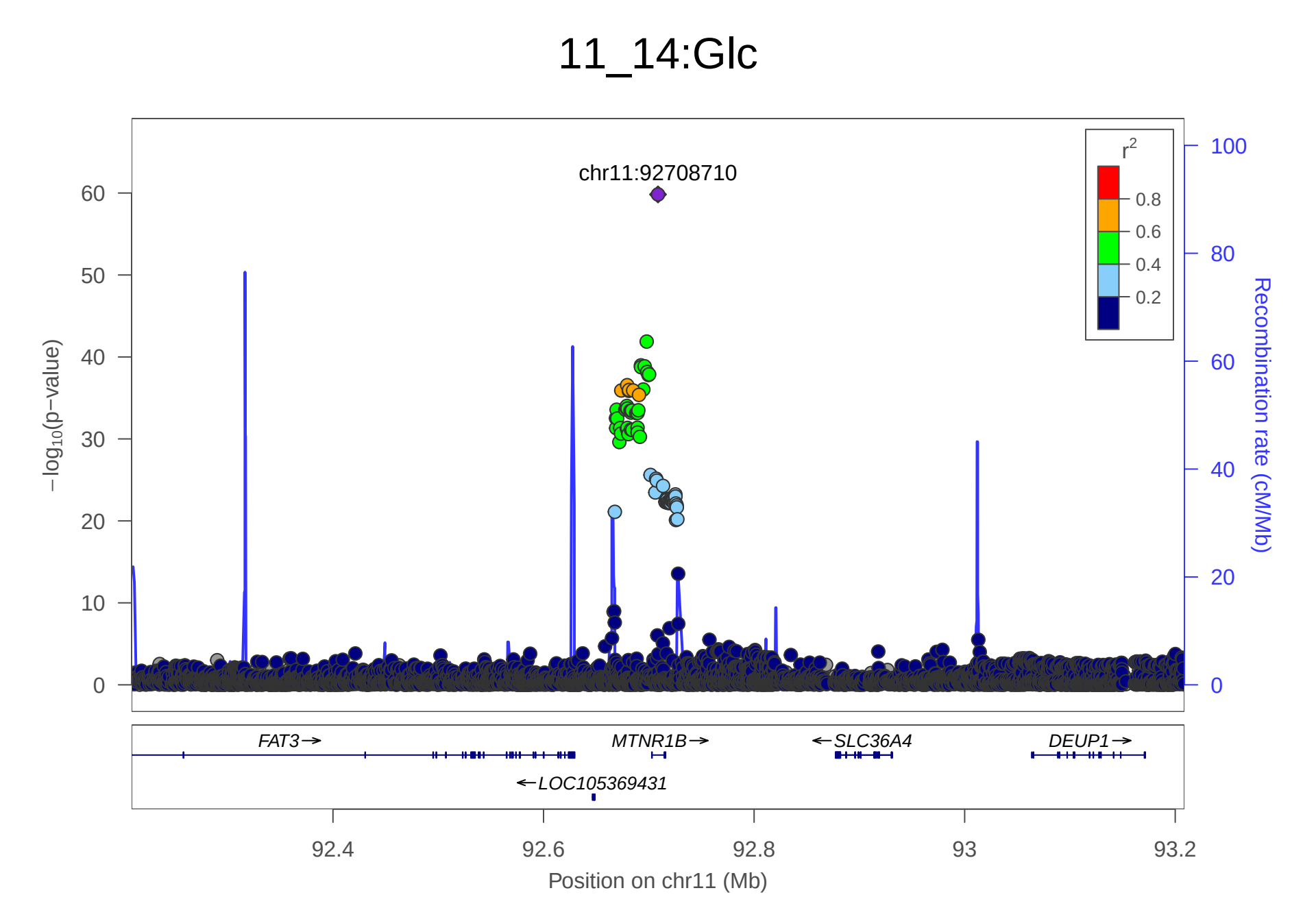
11_10:UnsatDeg



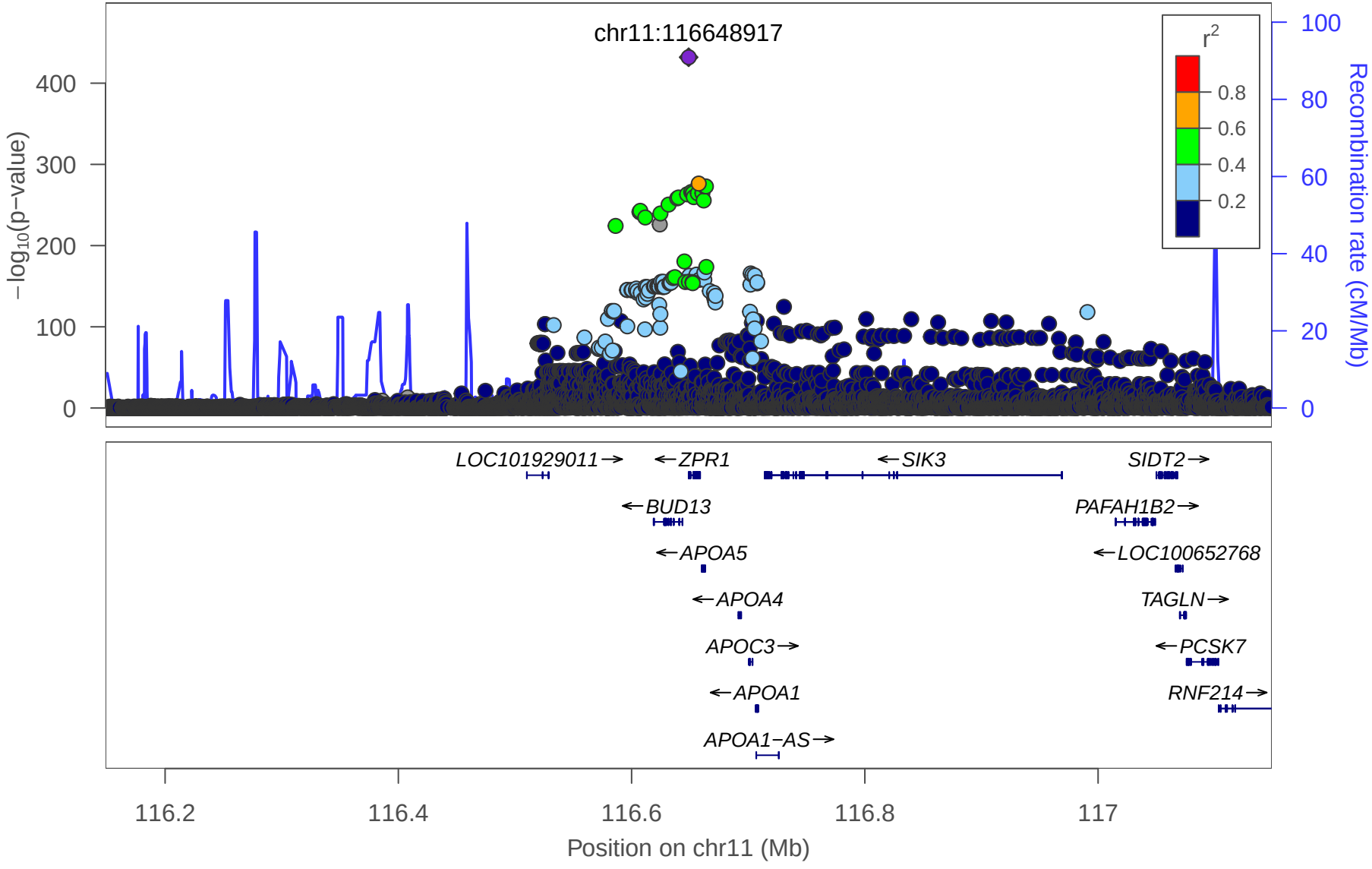

11_11:FAw3byFA
chr11:68562328
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LRP5
PPP6R3
GAL
CPT1A
MRPL21
MRGPRF
LOC338694
TESMIN
IGHMBP2
TPCN2
MYEOV
MRGPRD
MRGPRF−AS1
MIR3164
Position on chr11 (Mb)

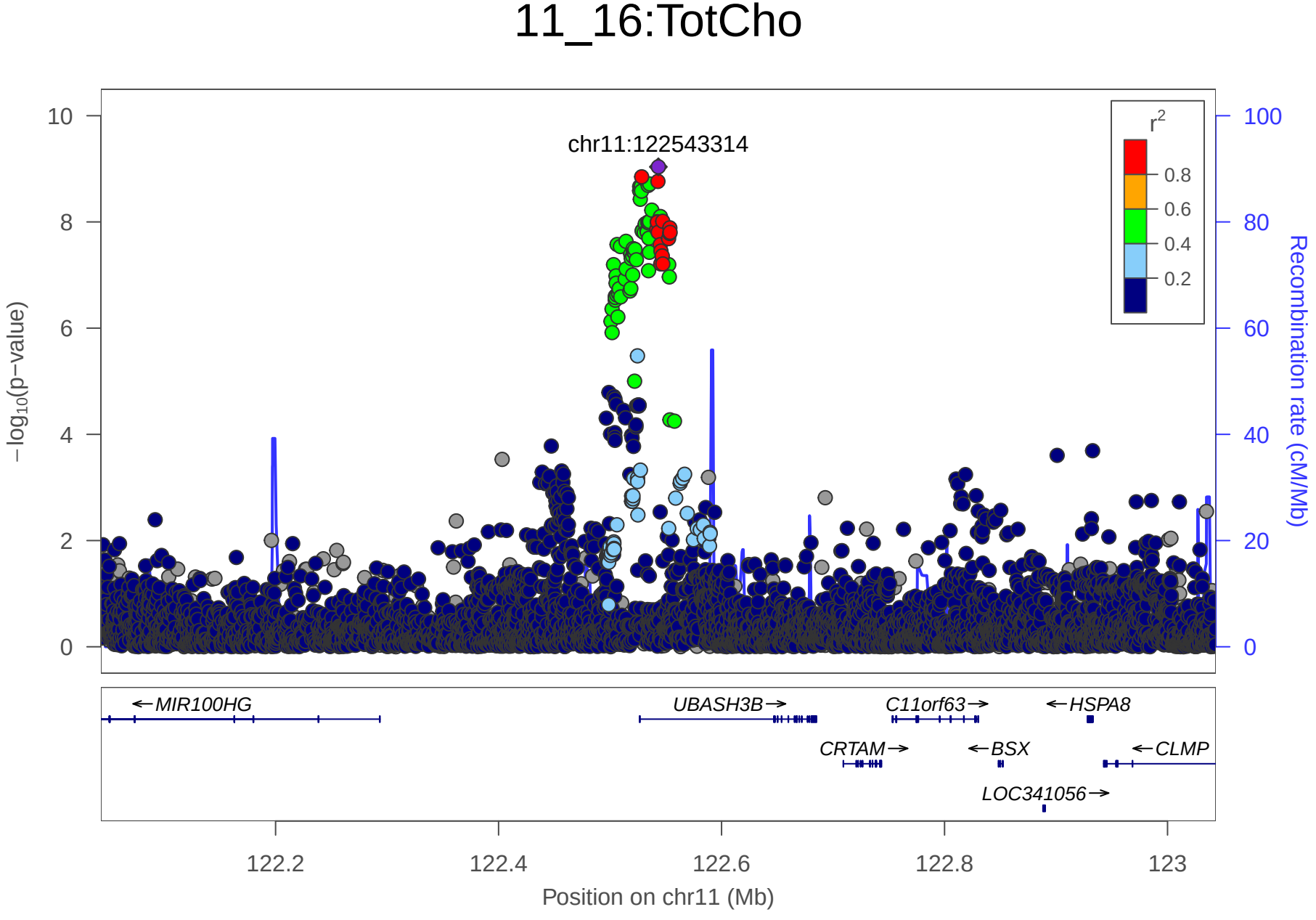

11_12:Ala
chr11:74109553
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PAAF1
C2CD3
P4HA3
MIR548AL
POLD3
MIR4696
XRRA1
DNAJB13
PPME1
PGM2L1
LIPT2
CHRDL2
UCP2
P4HA3−AS1
KCNE3
RNF169
UCP3
LOC100287896
Position on chr11 (Mb)

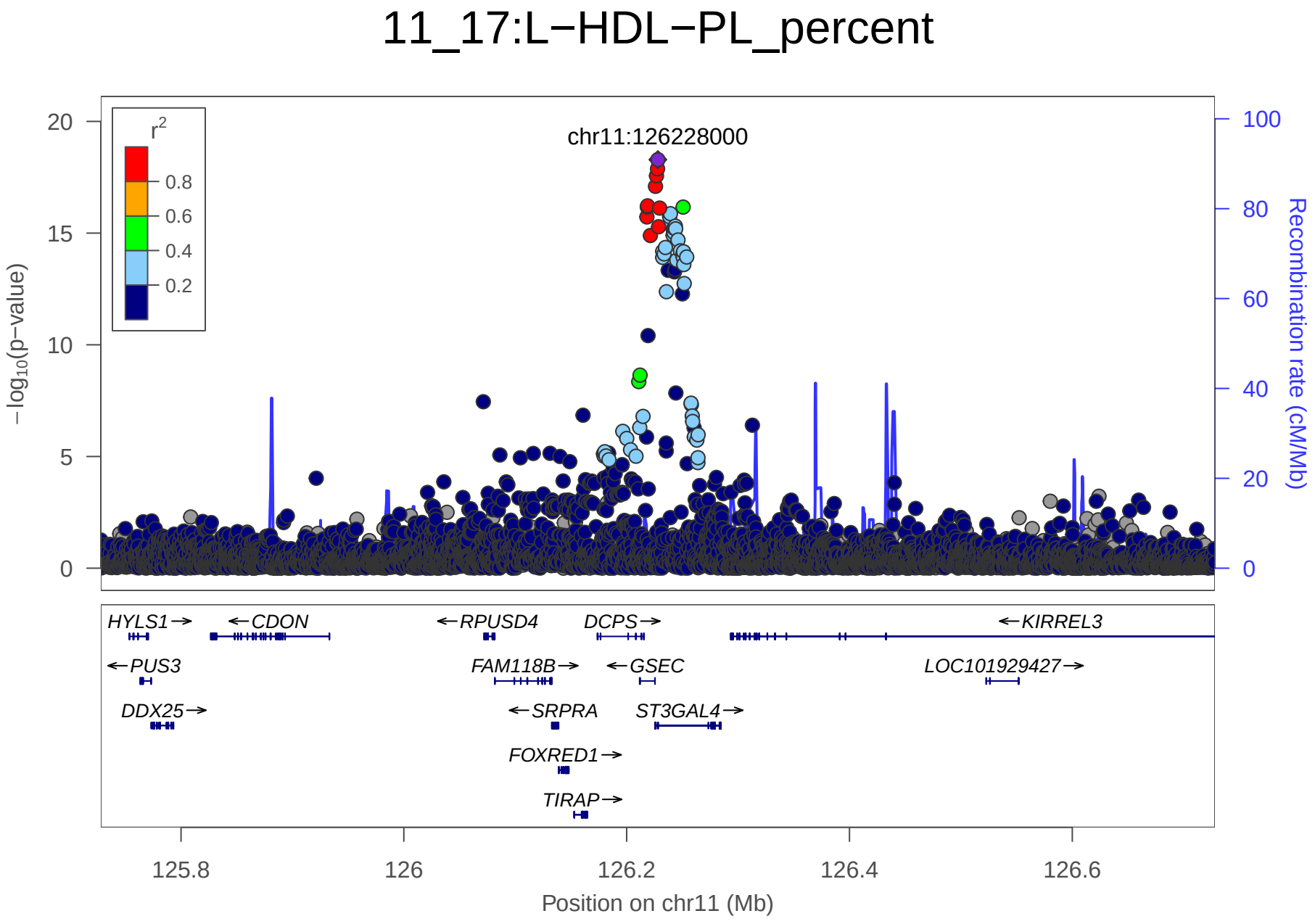

11_13:M−HDL−PL
chr11:75452364
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
TPBGL
RPS3
SERPINH1
MOGAT2
UVRAG
WNT11
ARRB1
KLHL35
LOC105369391
LOC283214
MIR326
GDPD5
MAP6
DGAT2
SNORD15A
LOC100506113
SNORD15B
Position on chr11 (Mb)

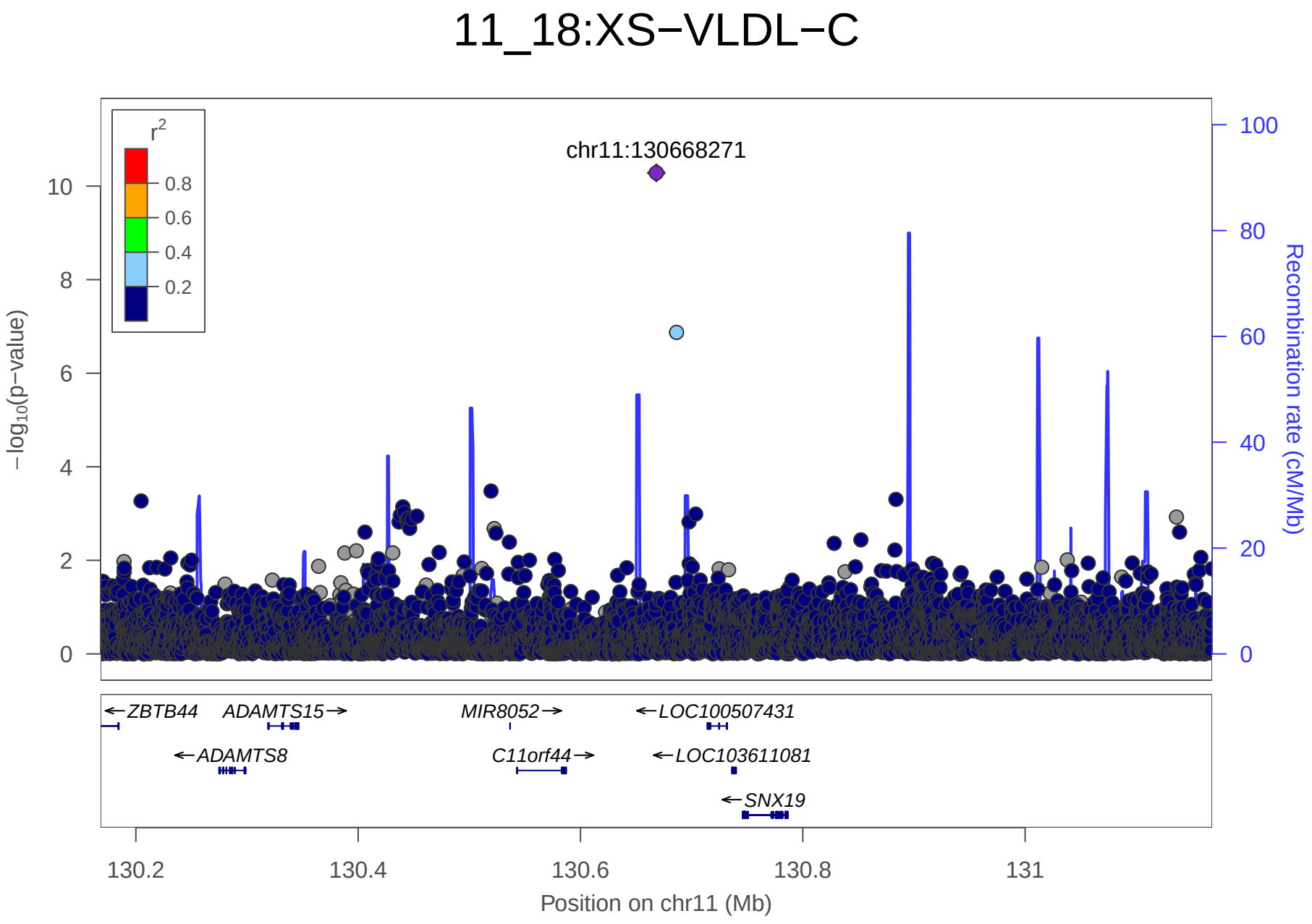

11_14:Glc
chr11:92708710
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FAT3
MTNR1B
SLC36A4
DEUP1
LOC105369431
Position on chr11 (Mb)

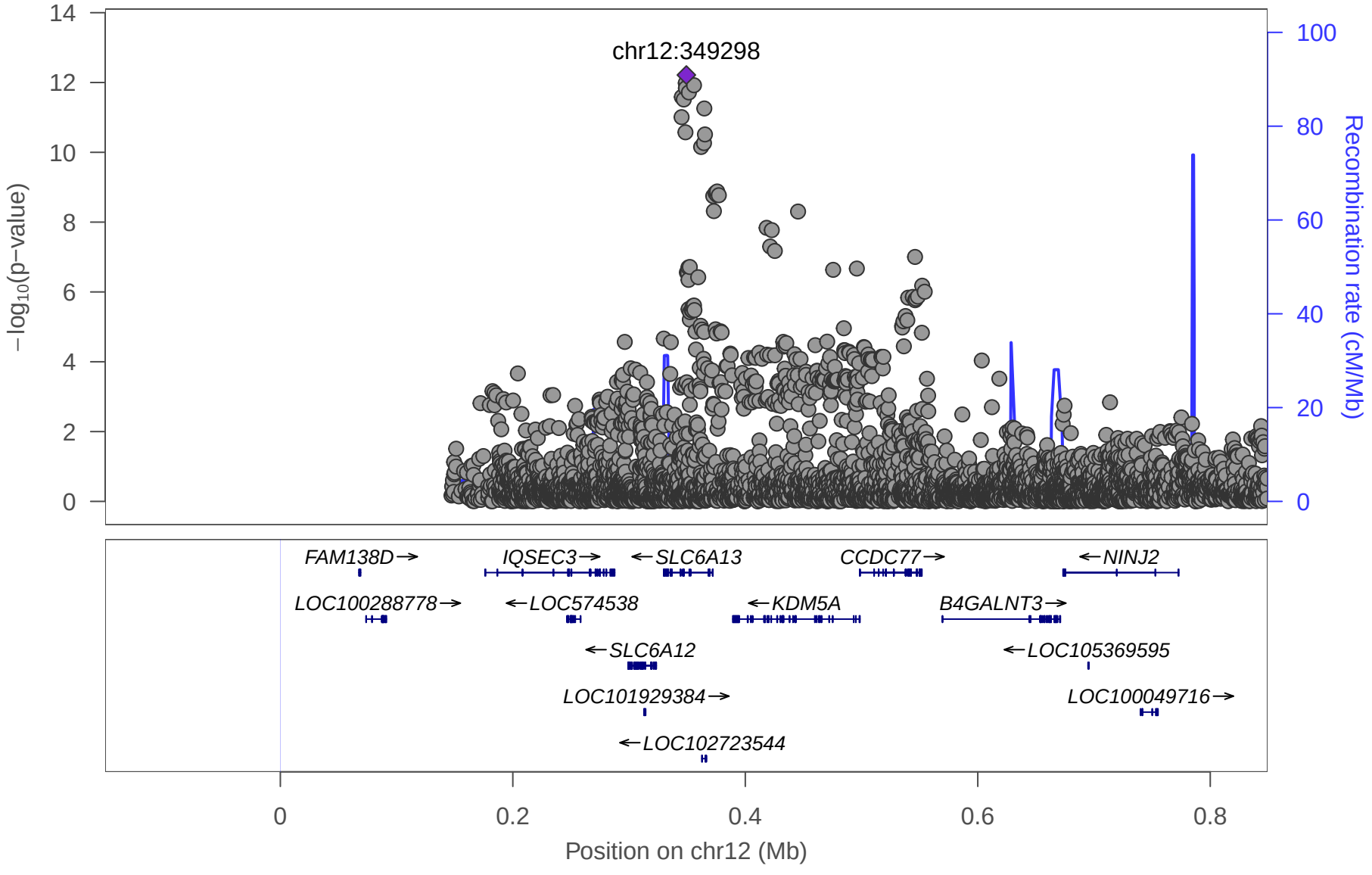
11_15:S−VLDL−TG

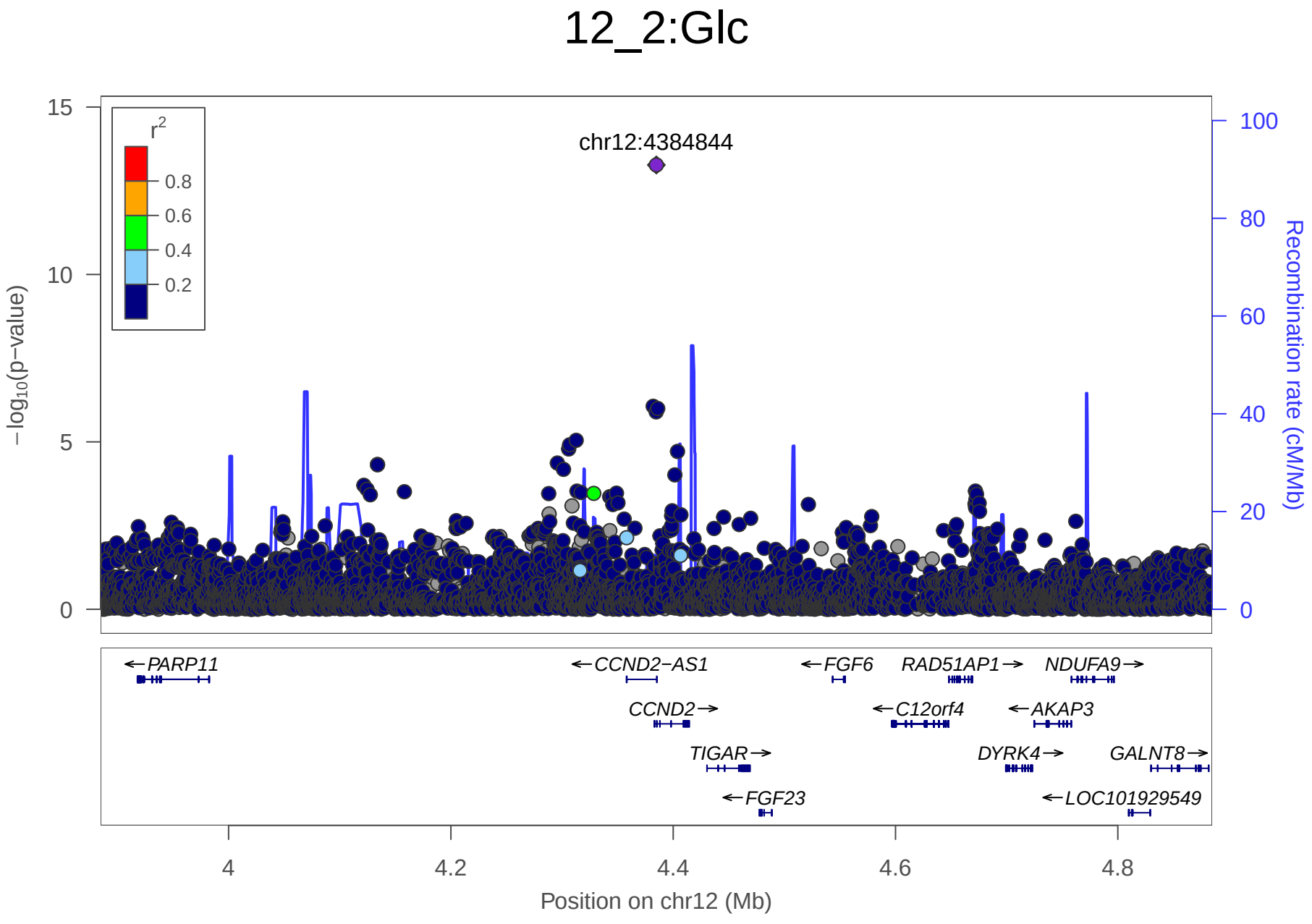



11_16:TotCho
chr11:122543314
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
10
8
6
4
2
0
100
80
60
40
20
0
←MIR100HG
UBASH3B→
C11orf63→
←HSPA8
CRTAM→
←BSX
←CLMP
LOC341056→
122.2
122.4
122.6
122.8
123
Position on chr11 (Mb)

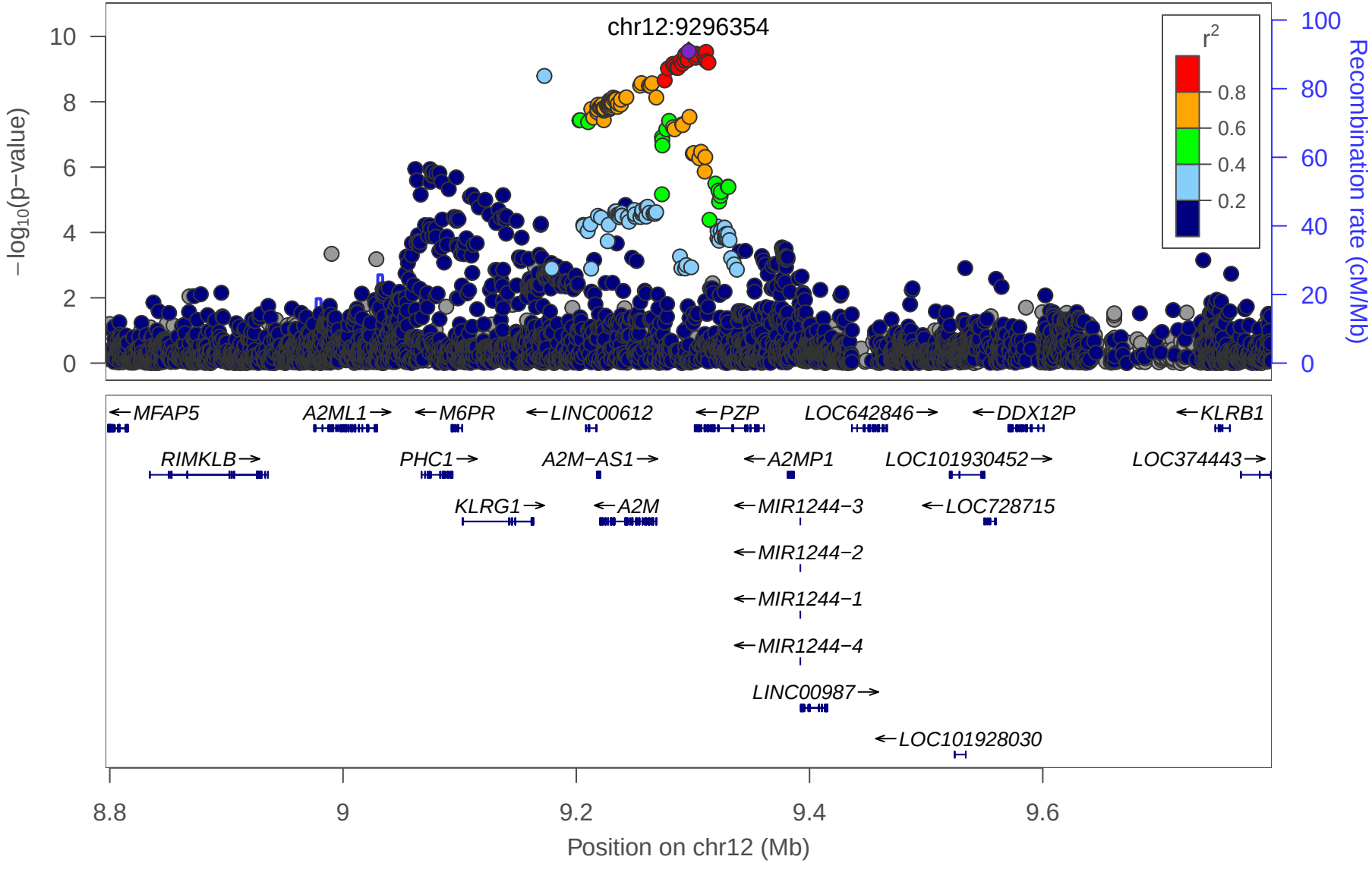

11_17:L−HDL−PL_percent
chr11:126228000
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
HYLS1
CDON
RPUSD4
DCPS
KIRREL3
PUS3
FAM118B
GSEC
LOC101929427
DDX25
SRPRA
ST3GAL4
FOXRED1
TIRAP
125.8
126
126.2
126.4
126.6
Position on chr11 (Mb)

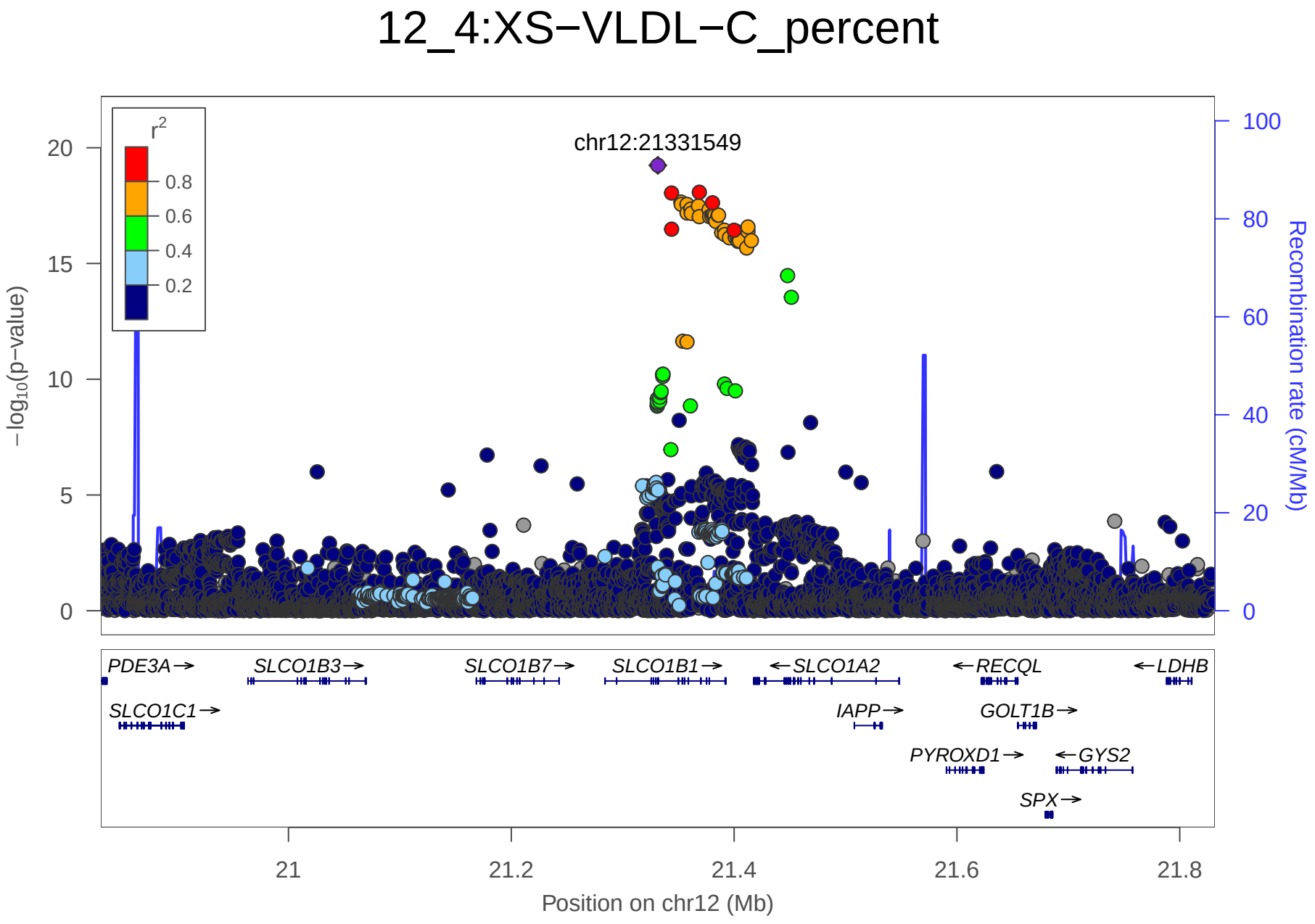

11_18:XS−VLDL−C
chr11:130668271
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ZBTB44
ADAMTS15
MIR8052
LOC100507431
ADAMTS8
C11orf44
LOC103611081
SNX19
Position on chr11 (Mb)

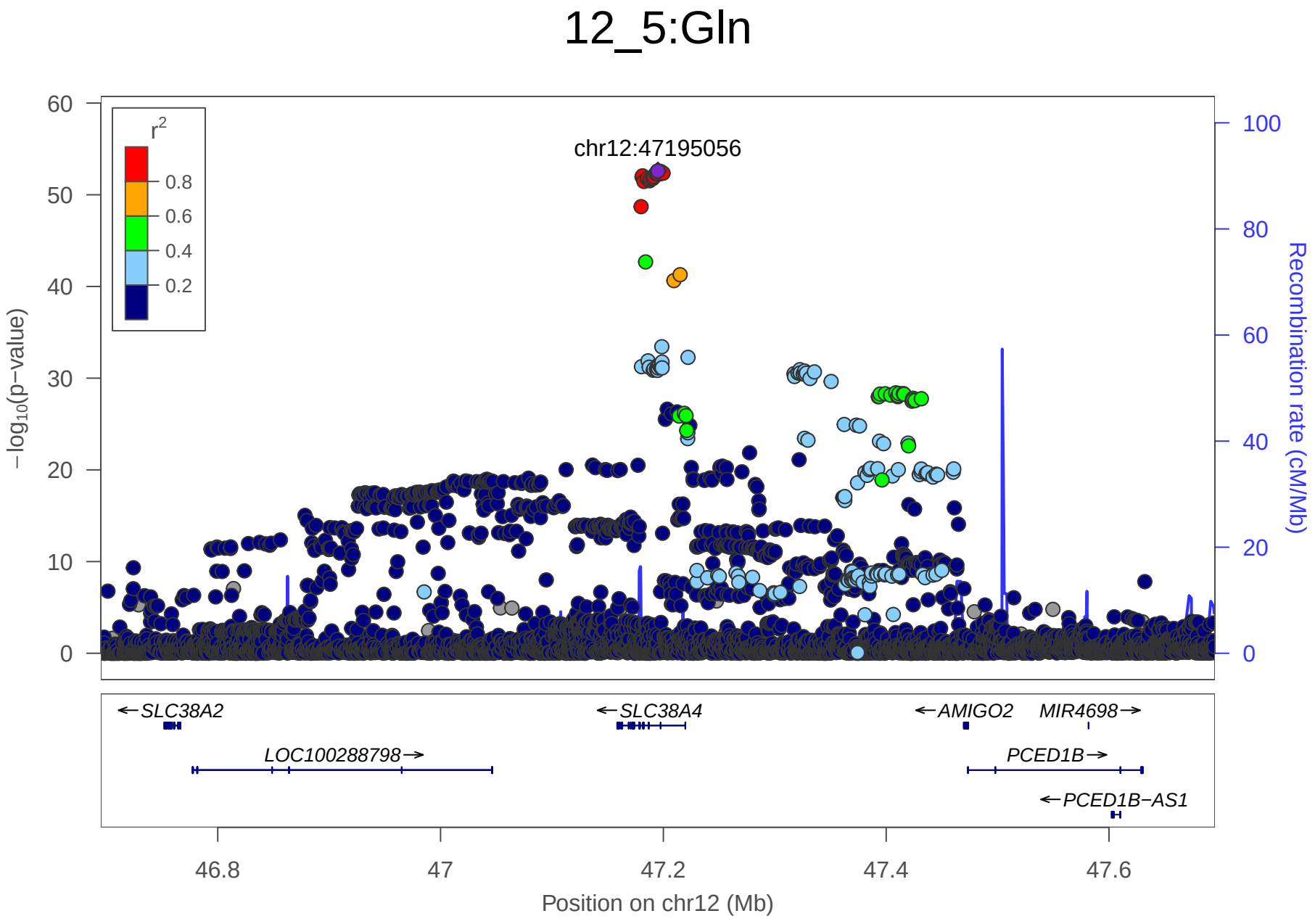

12_1:Crea
chr12:349298
−log10(p−value)
Recombination rate (cM/Mb)
FAM138D
IQSEC3
SLC6A13
CCDC77
NINJ2
LOC100288778
LOC574538
KDM5A
B4GALNT3
SLC6A12
LOC105369595
LOC101929384
LOC100049716
LOC102723544
Position on chr12 (Mb)


12_2:Glc
chr12:4384844
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PARP11
CCND2−AS1
FGF6
RAD51AP1
NDUFA9
CCND2
C12orf4
AKAP3
TIGAR
DYRK4
GALNT8
FGF23
LOC101929549
Position on chr12 (Mb)

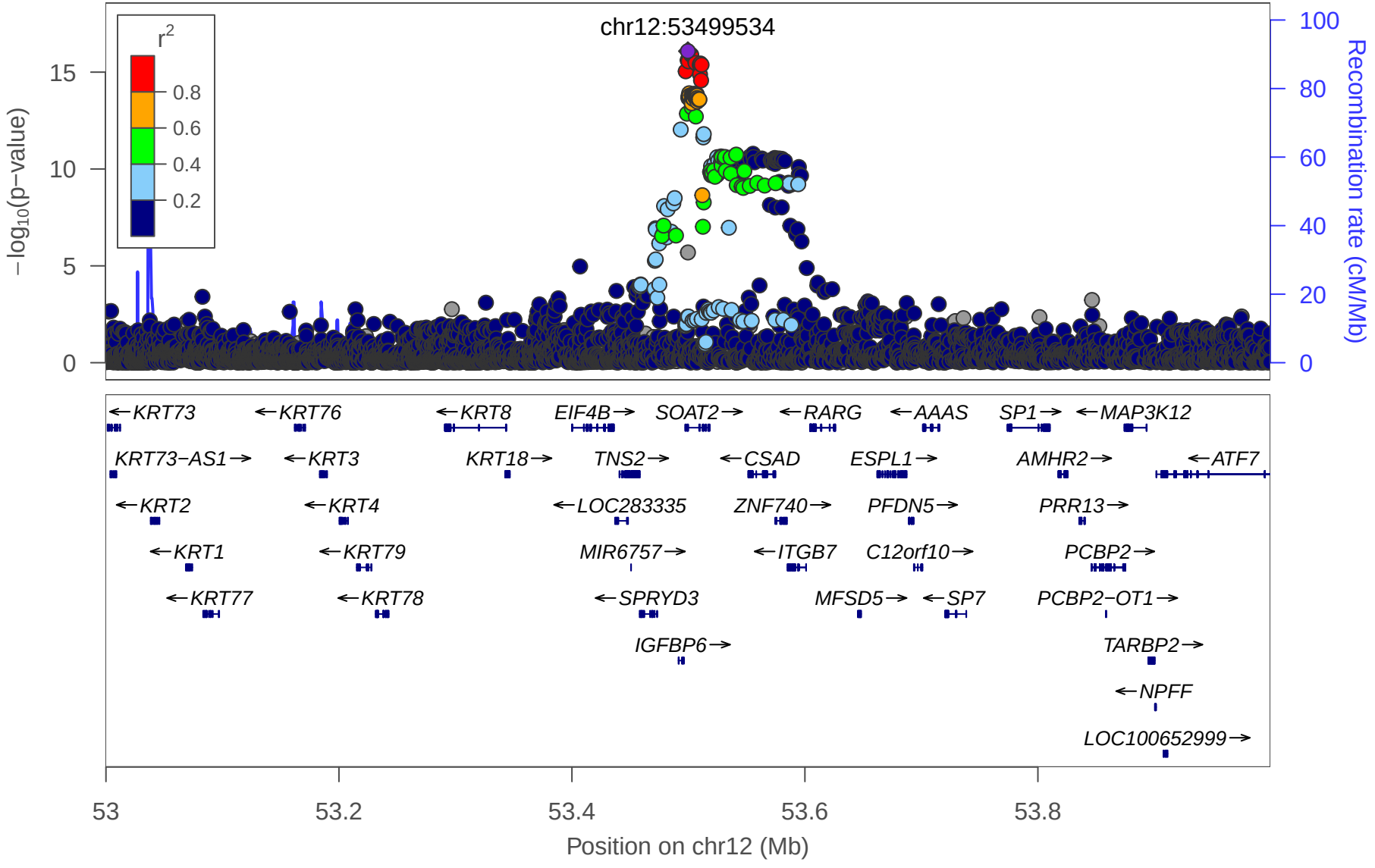
12_3:PUFA


chr12:9296354
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
MFAP5
A2ML1
M6PR
LINC00612
PZP
LOC642846
DDX12P
KLRB1
RIMKLB
PHC1
A2M−AS1
A2MP1
LOC101930452
LOC374443
KLRG1
A2M
MIR1244−3
LOC728715
MIR1244−2
MIR1244−1
MIR1244−4
LINC00987
LOC101928030
8.8
9
9.2
9.4
9.6
Position on chr12 (Mb)

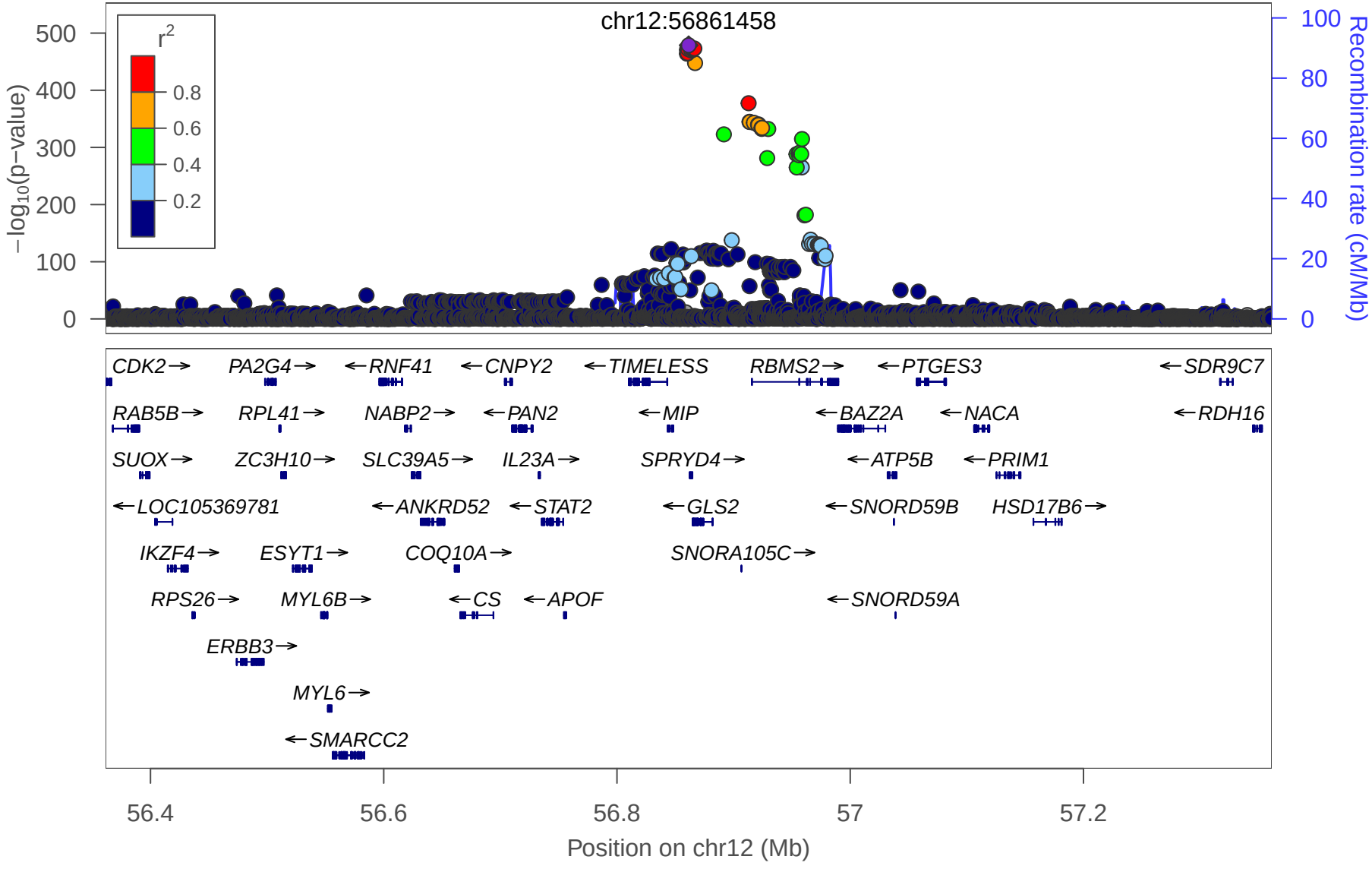

12_4:XS−VLDL−C_percent
chr12:21331549
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PDE3A
SLCO1B3
SLCO1B7
SLCO1B1
SLCO1A2
RECQL
LDHB
SLCO1C1
IAPP
GOLT1B
PYROXD1
GYS2
SPX
Position on chr12 (Mb)

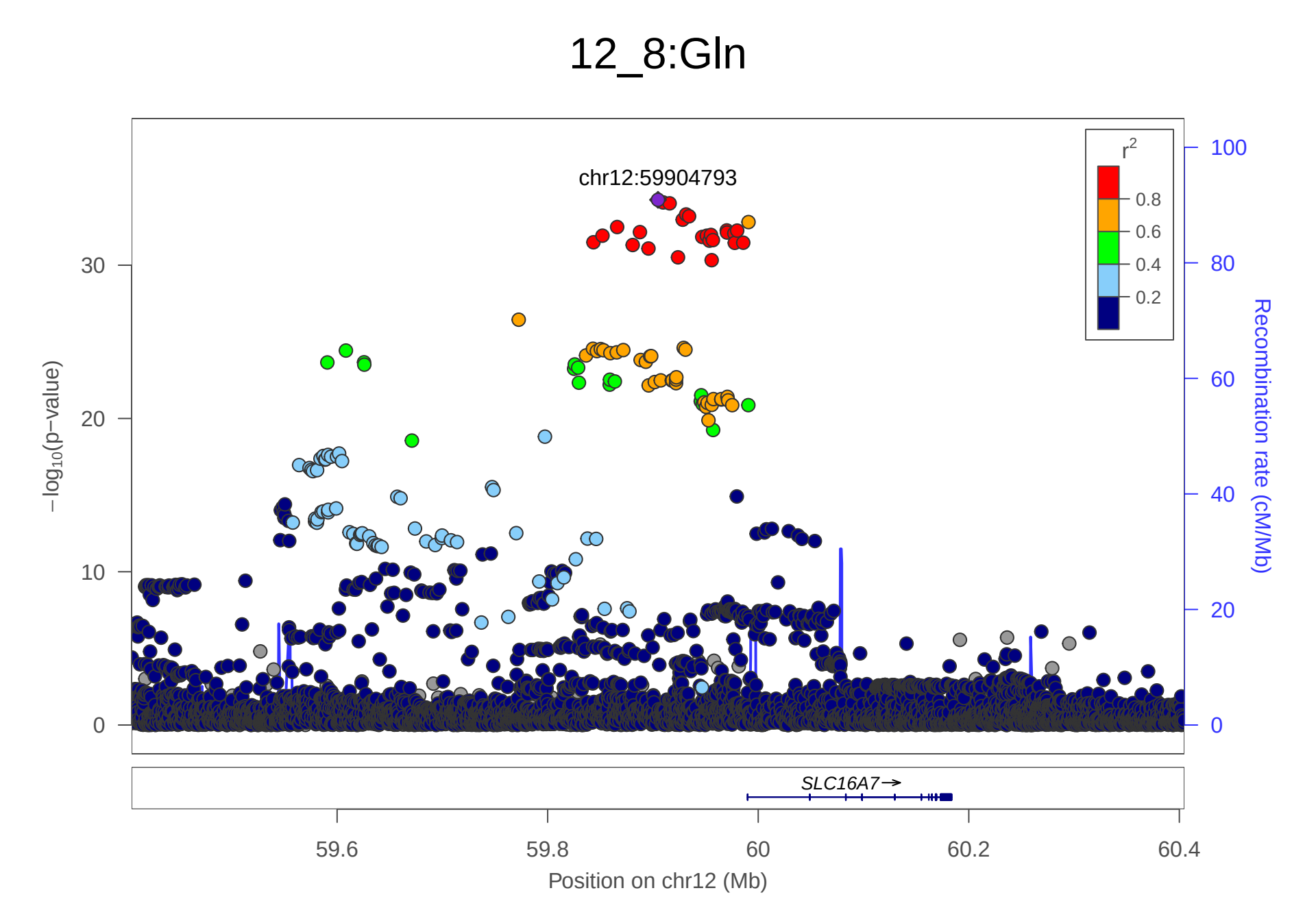

12_5:Gln
chr12:47195056
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SLC38A2
SLC38A4
AMIGO2
MIR4698
LOC100288798
PCED1B
PCED1B−AS1
Position on chr12 (Mb)

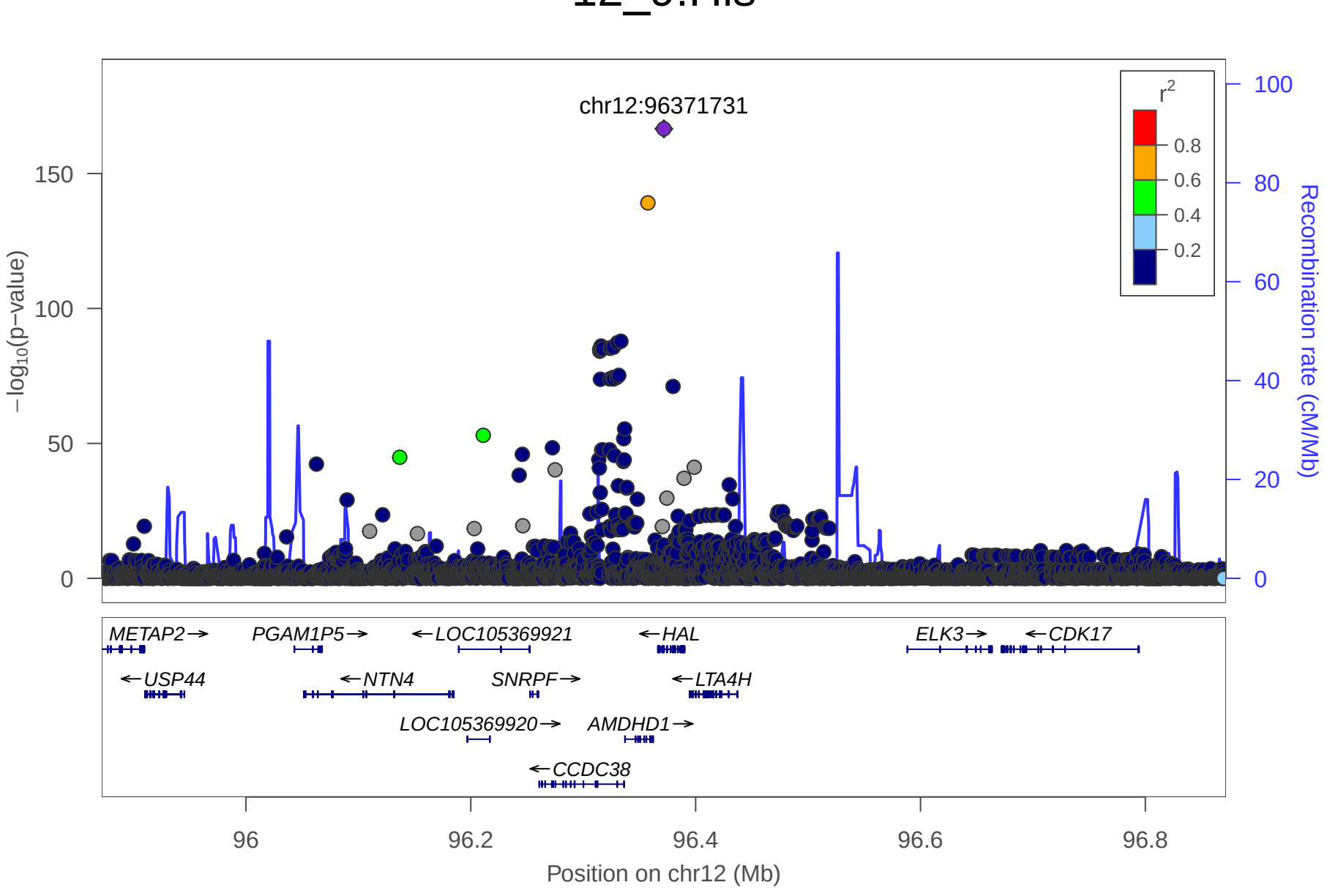
12_6:XS−VLDL−CE_percent

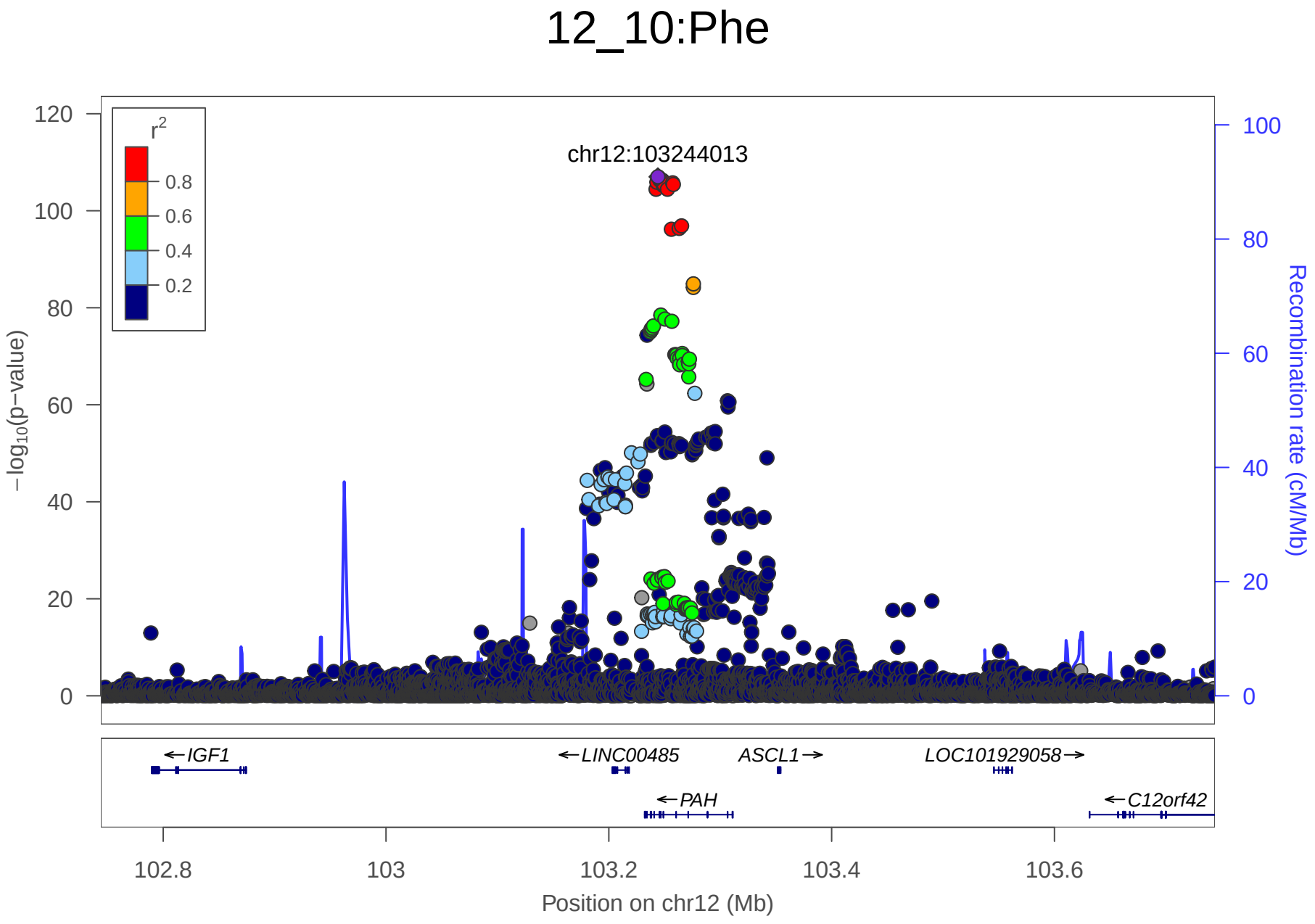


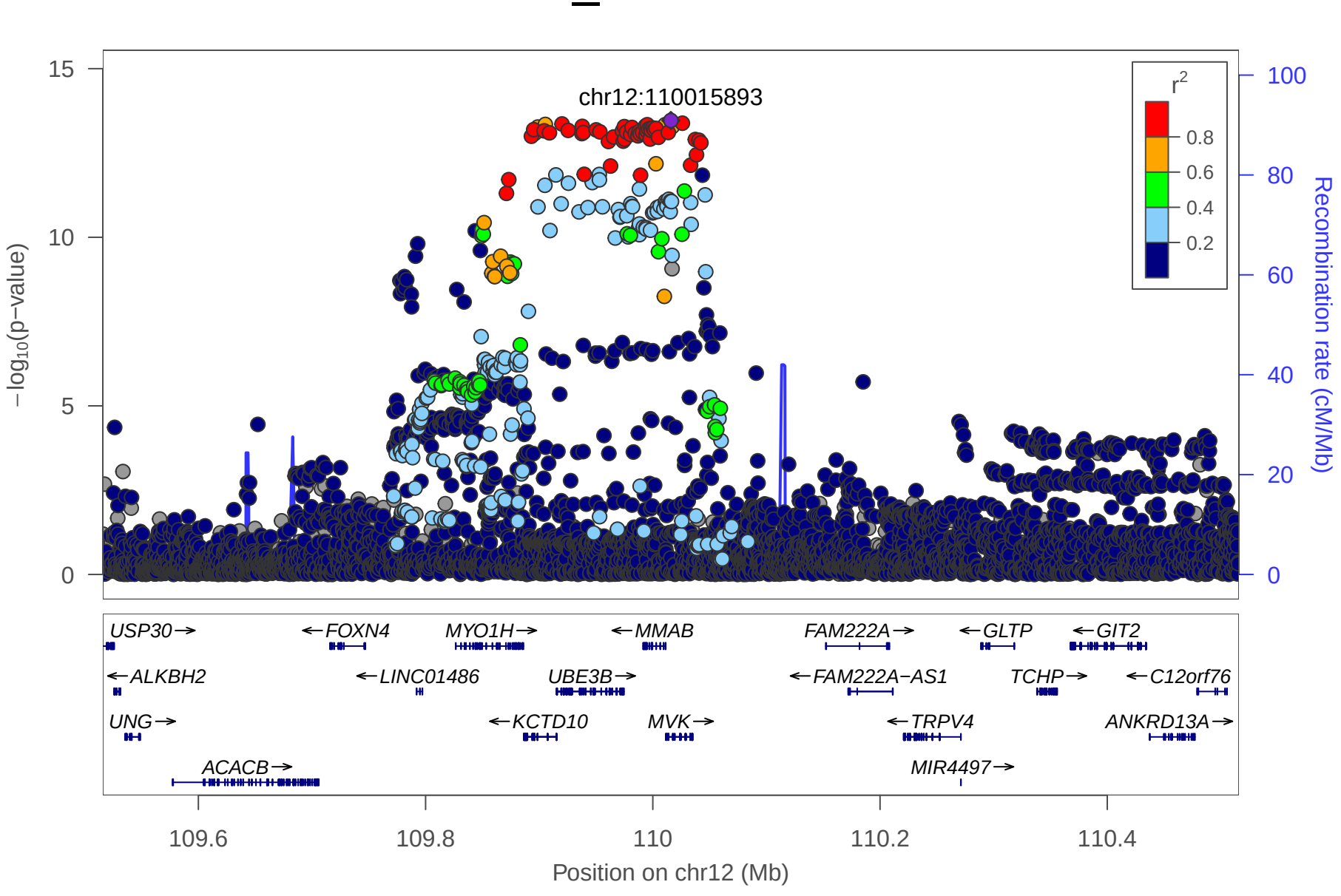
12_7:Gln

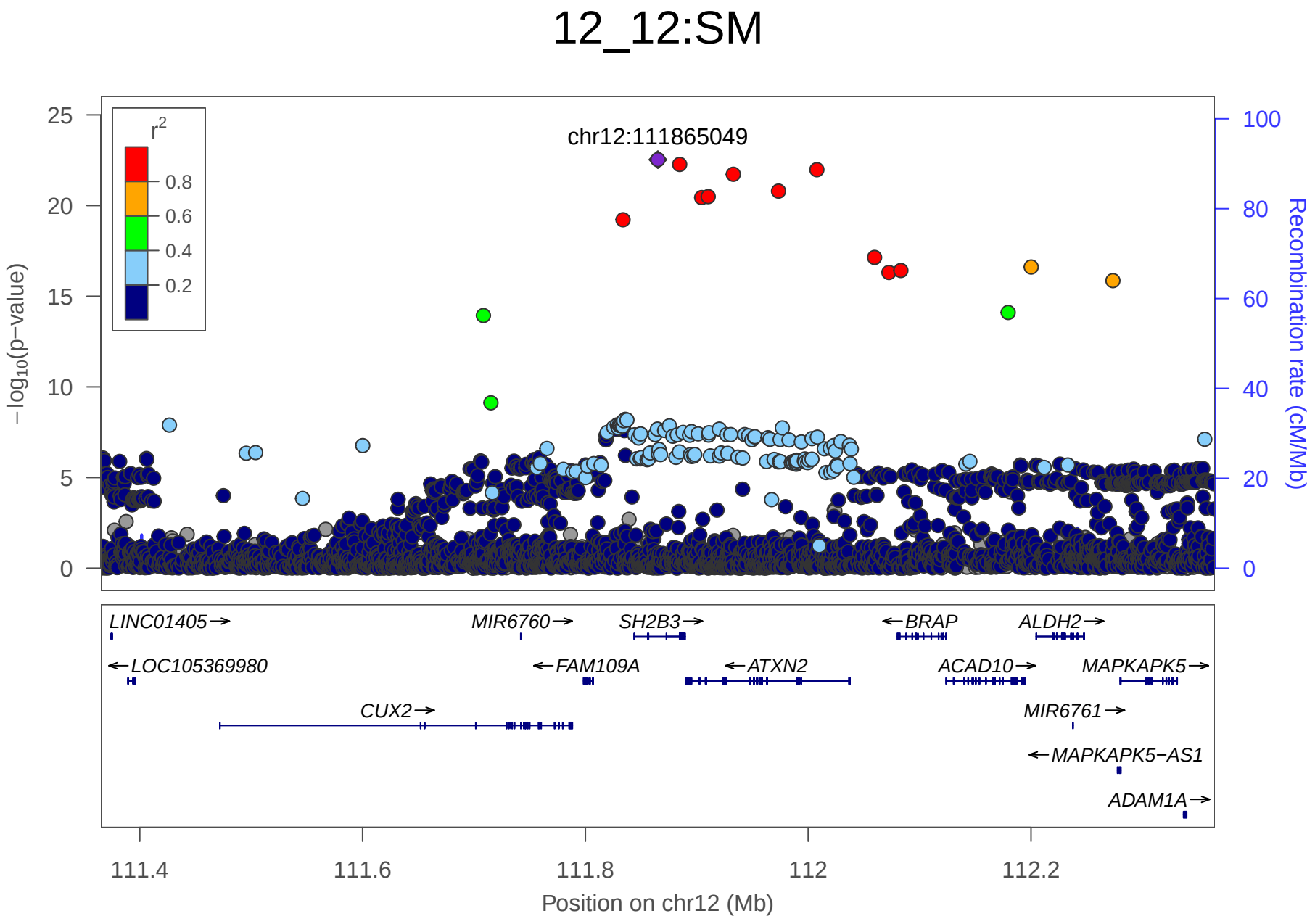

chr12:56861458
r²
0.8
0.6
0.4
0.2
−log10(p−value)
500
400
300
200
100
0
100
80
60
40
20
0
Recombination rate (cM/Mb)
CDK2→ PA2G4→ ←RNF41 ←CNPY2 ←TIMELESS RBMS2→ ←PTGES3 ←SDR9C7
RAB5B→ RPL41→ NABP2→ ←PAN2 ←MIP ←BAZ2A ←NACA ←RDH16
SUOX→ ZC3H10→ SLC39A5→ IL23A→ SPRYD4→ ←ATP5B ←PRIM1
←LOC105369781 ←ANKRD52 ←STAT2 ←GLS2 ←SNORD59B HSD17B6→
IKZF4→ ESYT1→ COQ10A→ SNORA105C→
RPS26→ MYL6B→ ←CS ←APOF ←SNORD59A
ERBB3→
MYL6→
←SMARCC2
56.4
56.6
56.8
57
57.2
Position on chr12 (Mb)

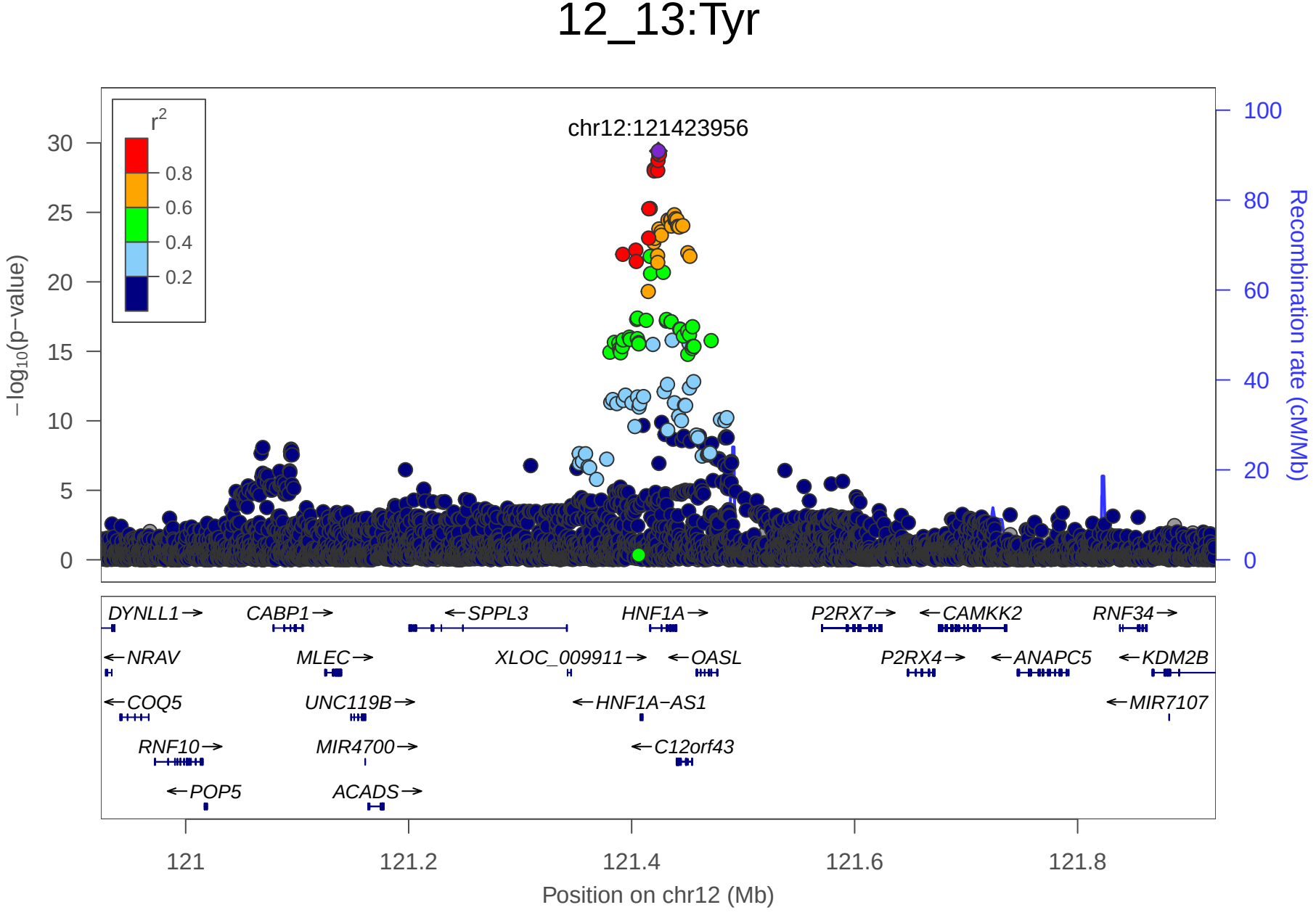

12_8:Gln
chr12:59904793
r2
0.8
0.6
0.4
0.2
30
20
10
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
SLC16A7
59.6
59.8
60
60.2
60.4
Position on chr12 (Mb)

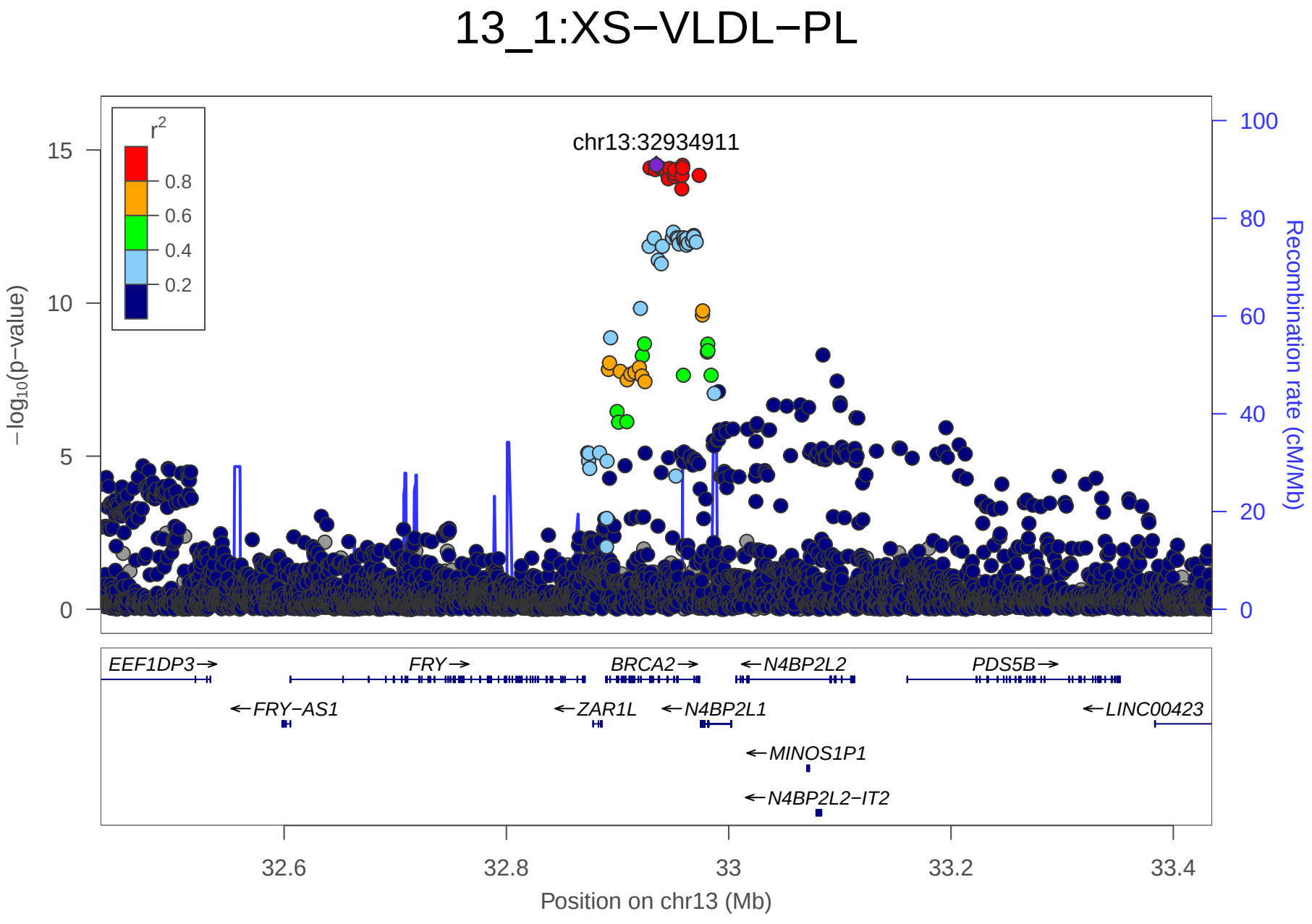

12_9:His
chr12:96371731
r2
0.8
0.6
0.4
0.2
150
100
50
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
METAP2→
PGAM1P5→
←LOC105369921
←HAL
ELK3→
←CDK17
←USP44
←NTN4
SNRPF→
←LTA4H
LOC105369920→
AMDHD1→
←CCDC38
96
96.2
96.4
96.6
96.8
Position on chr12 (Mb)

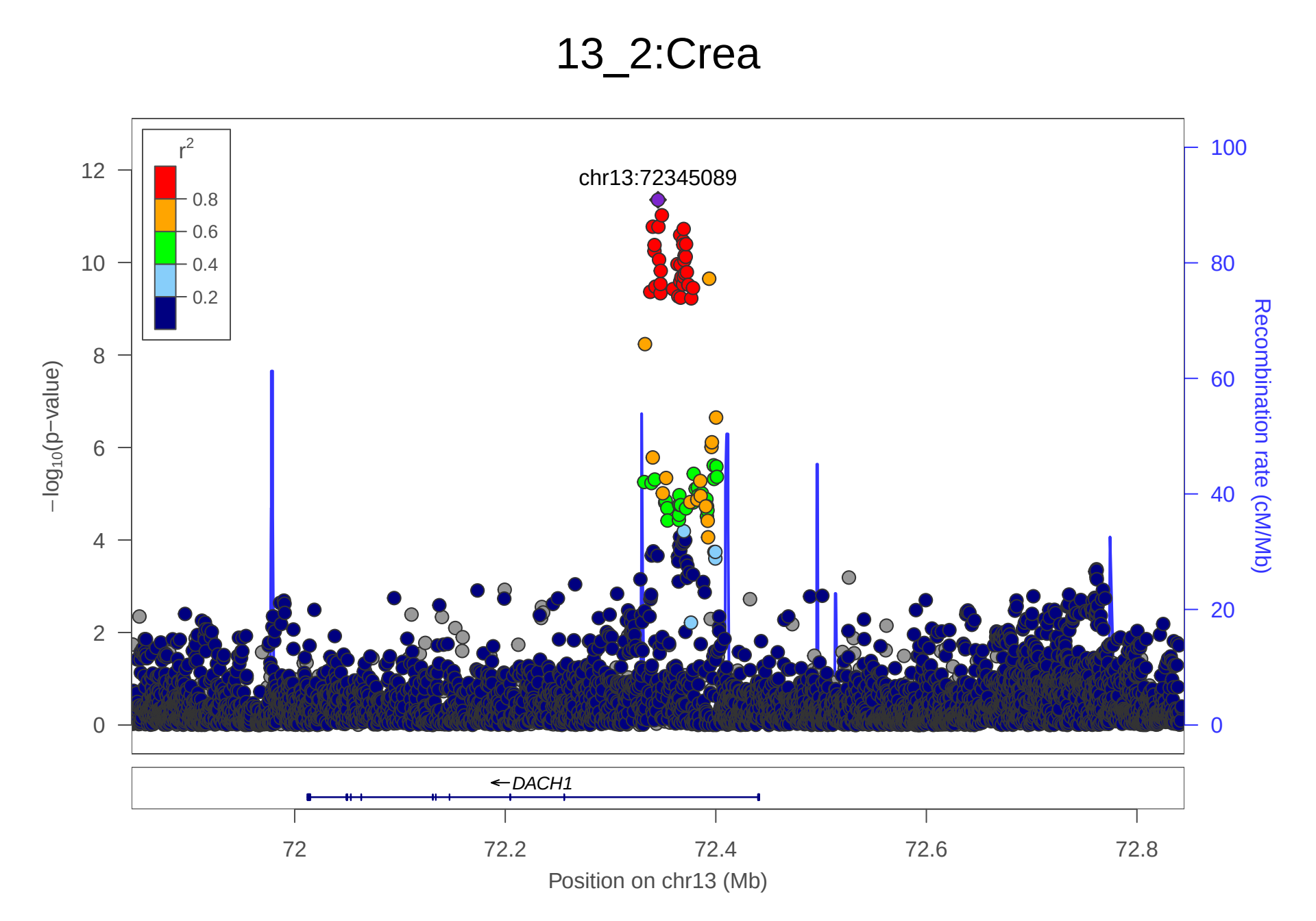

12_10:Phe
chr12:103244013
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
120
100
80
60
40
20
0
100
80
60
40
20
0
IGF1
LINC00485
ASCL1
LOC101929058
PAH
C12orf42
102.8
103
103.2
103.4
103.6
Position on chr12 (Mb)

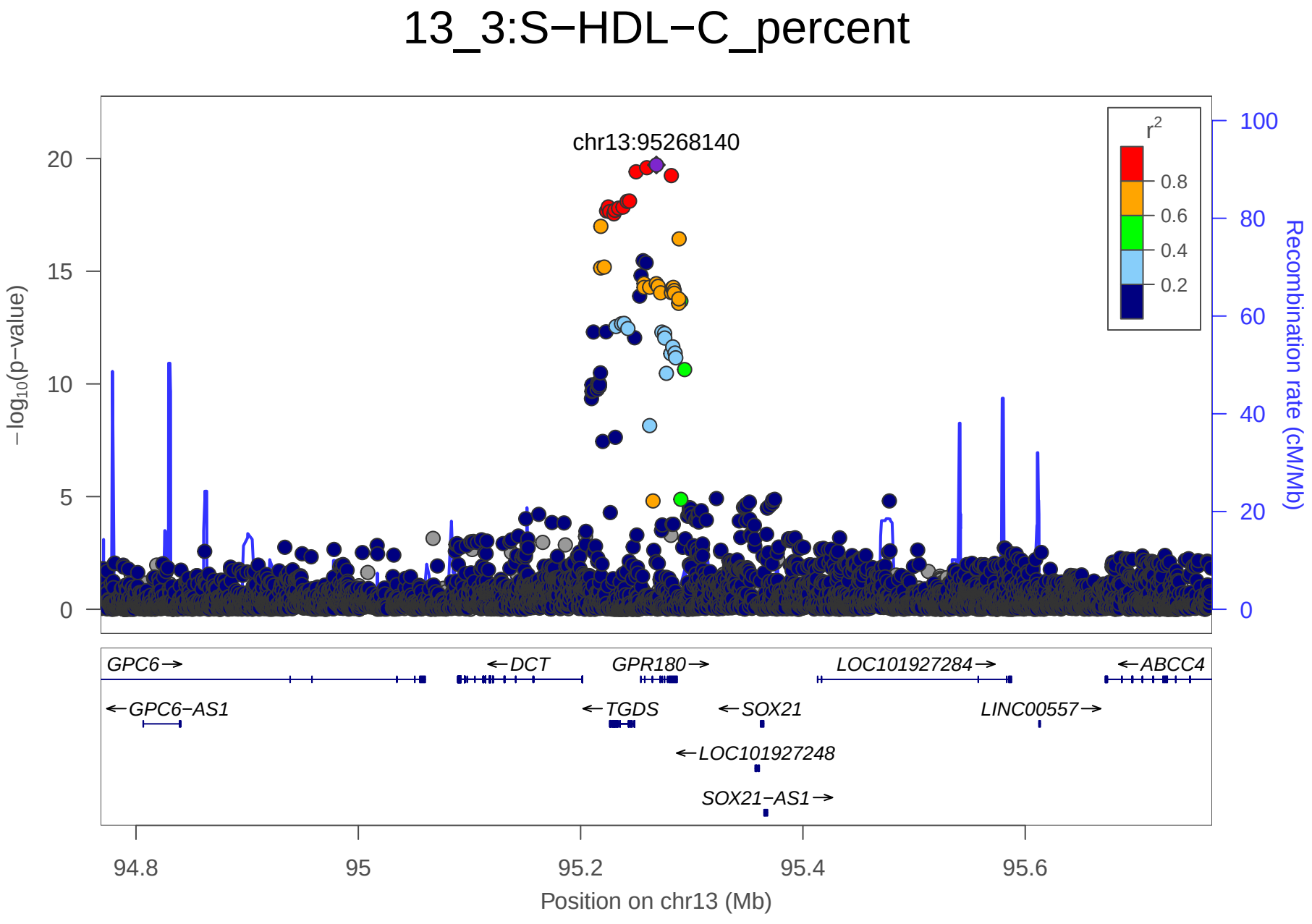

12_11:HDL−D
chr12:110015893
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
USP30→
←FOXN4
MYO1H→
←MMAB
FAM222A→
←GLTP
←GIT2
←ALKBH2
←LINC01486
UBE3B→
←FAM222A−AS1
TCHP→
←C12orf76
UNG→
←KCTD10
MVK→
←TRPV4
ANKRD13A→
ACACB→
MIR4497→
109.6
109.8
110
110.2
110.4
Position on chr12 (Mb)


12_12:SM
chr12:111865049
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
25
20
15
10
5
0
100
80
60
40
20
0
LINC01405→
MIR6760→
SH2B3→
←BRAP
ALDH2→
←LOC105369980
←FAM109A
←ATXN2
ACAD10→
MAPKAPK5→
CUX2→
MIR6761→
←MAPKAPK5−AS1
ADAM1A→
111.4
111.6
111.8
112
112.2
Position on chr12 (Mb)

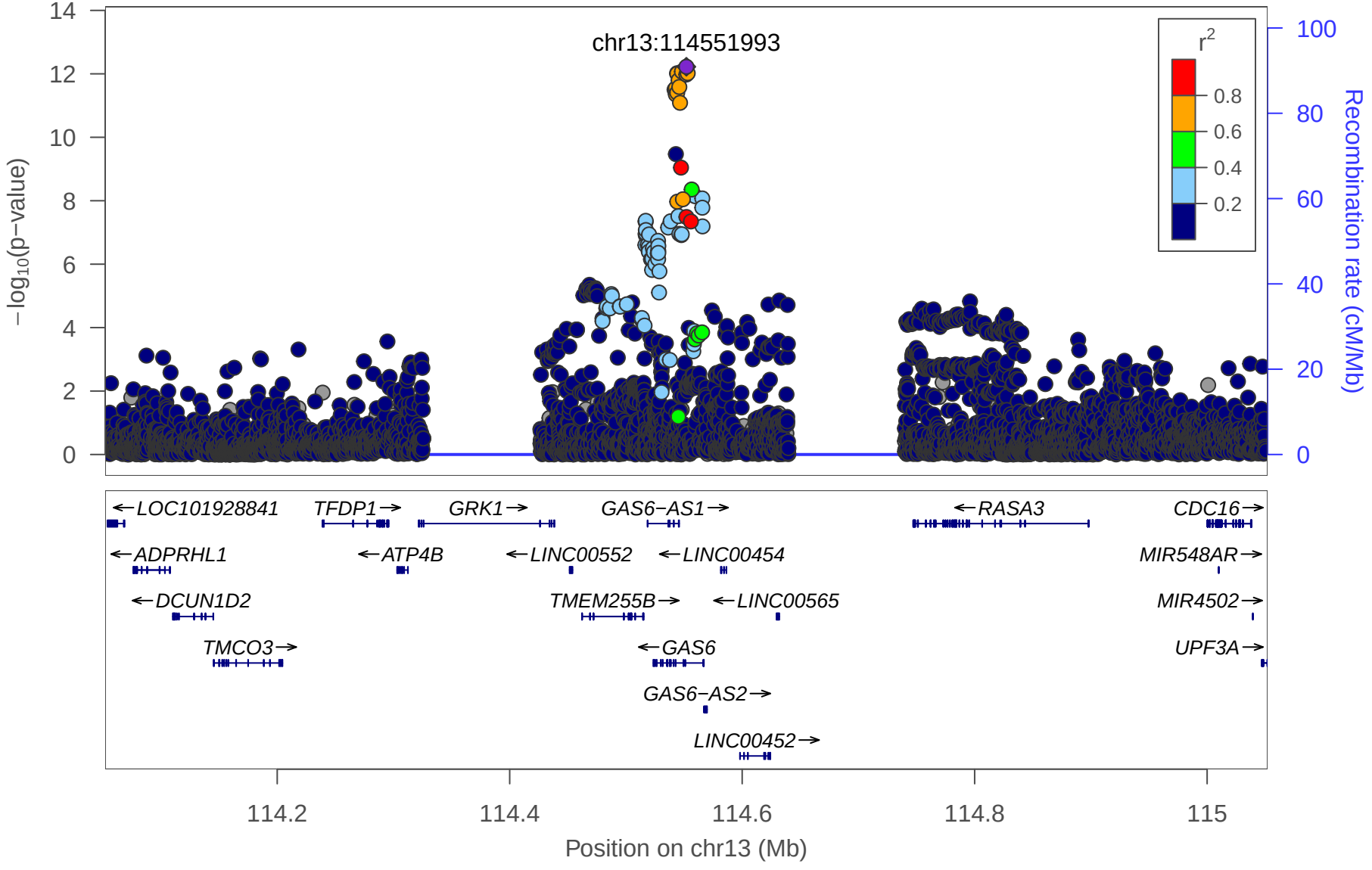

12_13:Tyr
chr12:121423956
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DYNLL1→
CABP1→
←SPPL3
HNF1A→
P2RX7→
←CAMKK2
RNF34→
←NRAV
MLEC→
XLOC_009911→
←OASL
P2RX4→
←ANAPC5
←KDM2B
←COQ5
UNC119B→
←HNF1A−AS1
←MIR7107
RNF10→
MIR4700→
←C12orf43
←POP5
ACADS→
Position on chr12 (Mb)

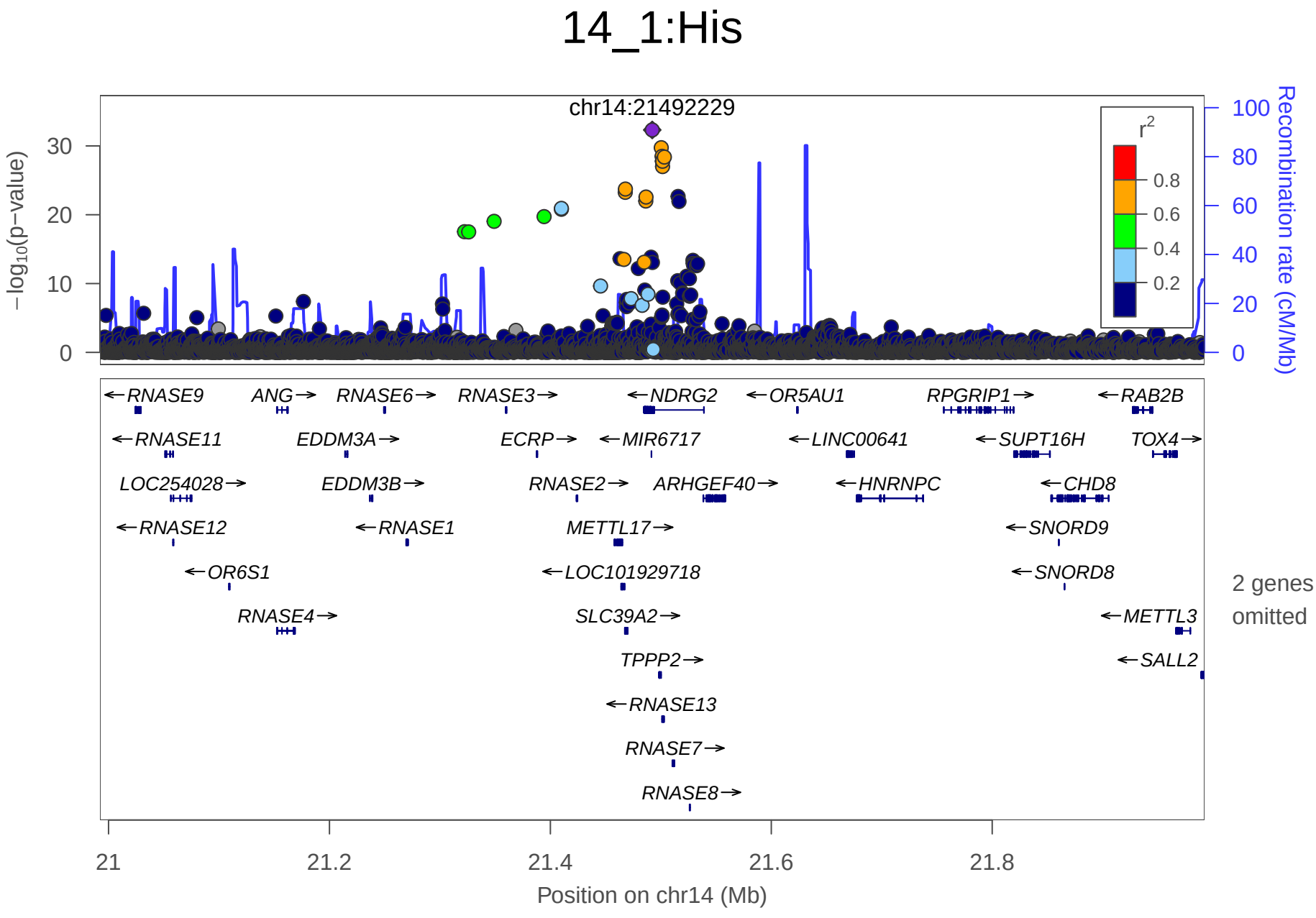

13_1:XS−VLDL−PL
chr13:32934911
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
EEF1DP3→
FRY→
BRCA2→
←N4BP2L2
PDS5B→
←FRY−AS1
←ZAR1L
←N4BP2L1
←LINC00423
←MINOS1P1
←N4BP2L2−IT2
Position on chr13 (Mb)


13_2:Crea
chr13:72345089
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
DACH1
Position on chr13 (Mb)

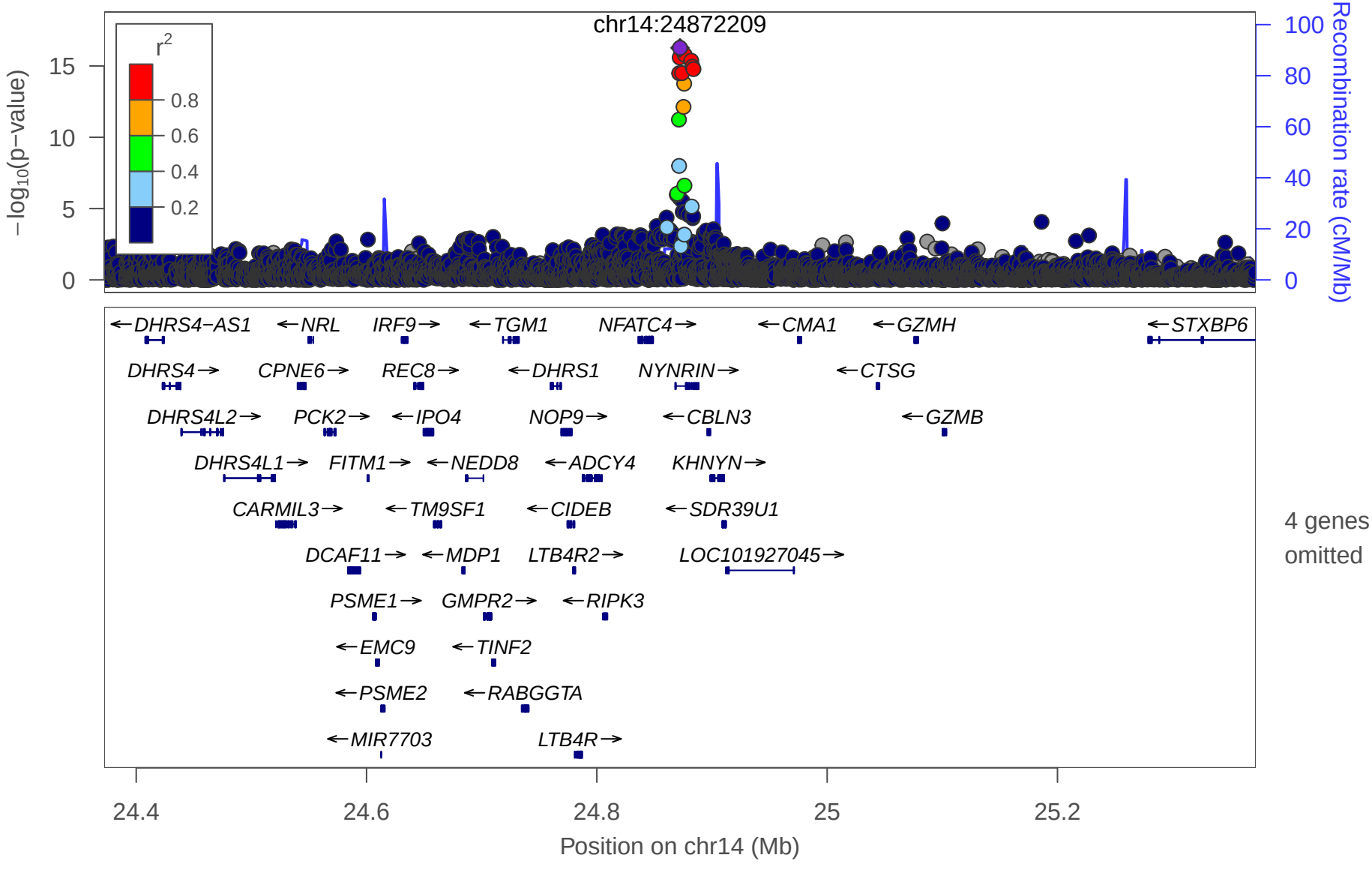

13_3:S−HDL−C_percent
chr13:95268140
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
GPC6→
←DCT
GPR180→
LOC101927284→
←ABCC4
←GPC6−AS1
←TGDS
←SOX21
LINC00557→
←LOC101927248
SOX21−AS1→
Position on chr13 (Mb)

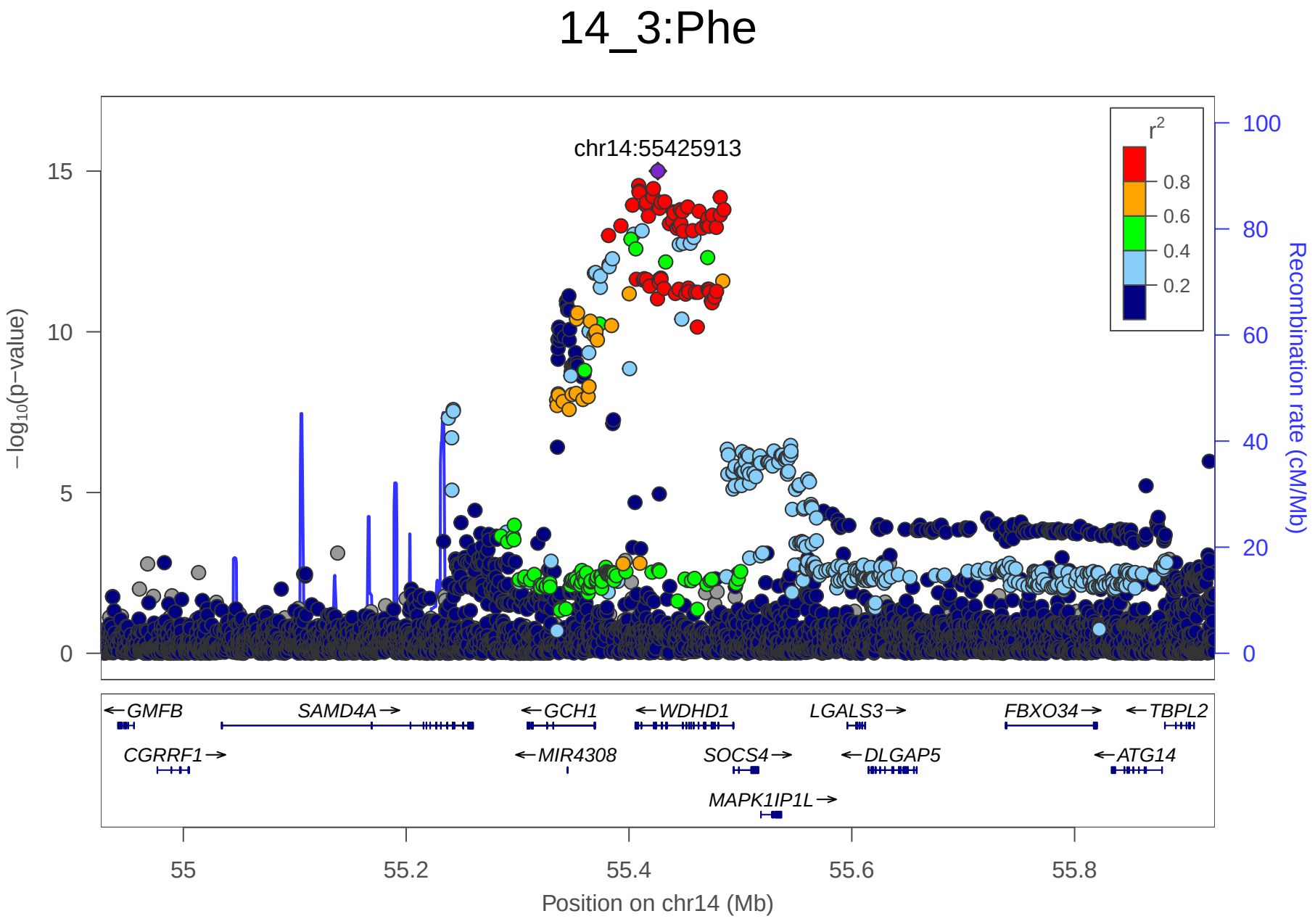
13_4:XS−VLDL−TG

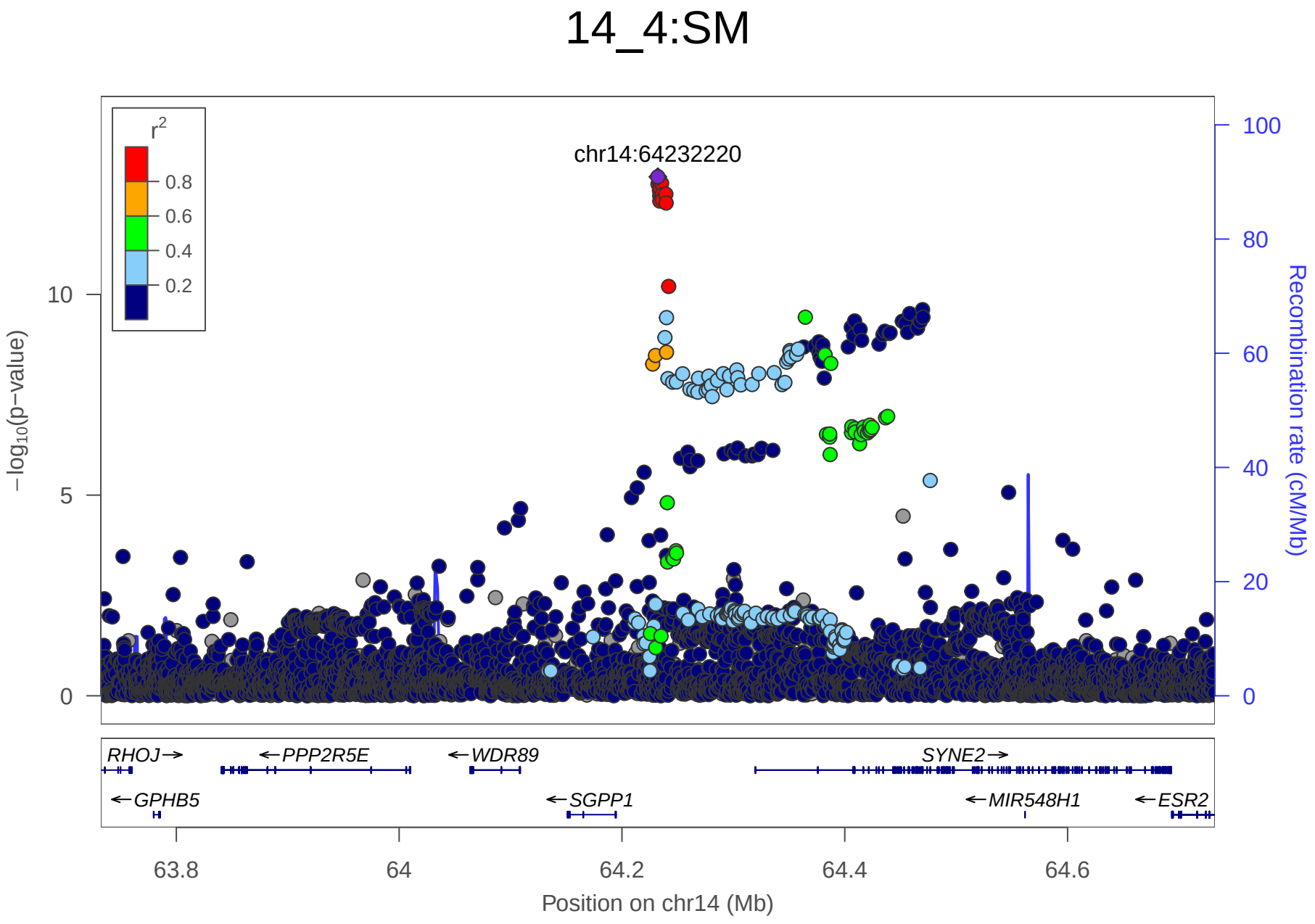


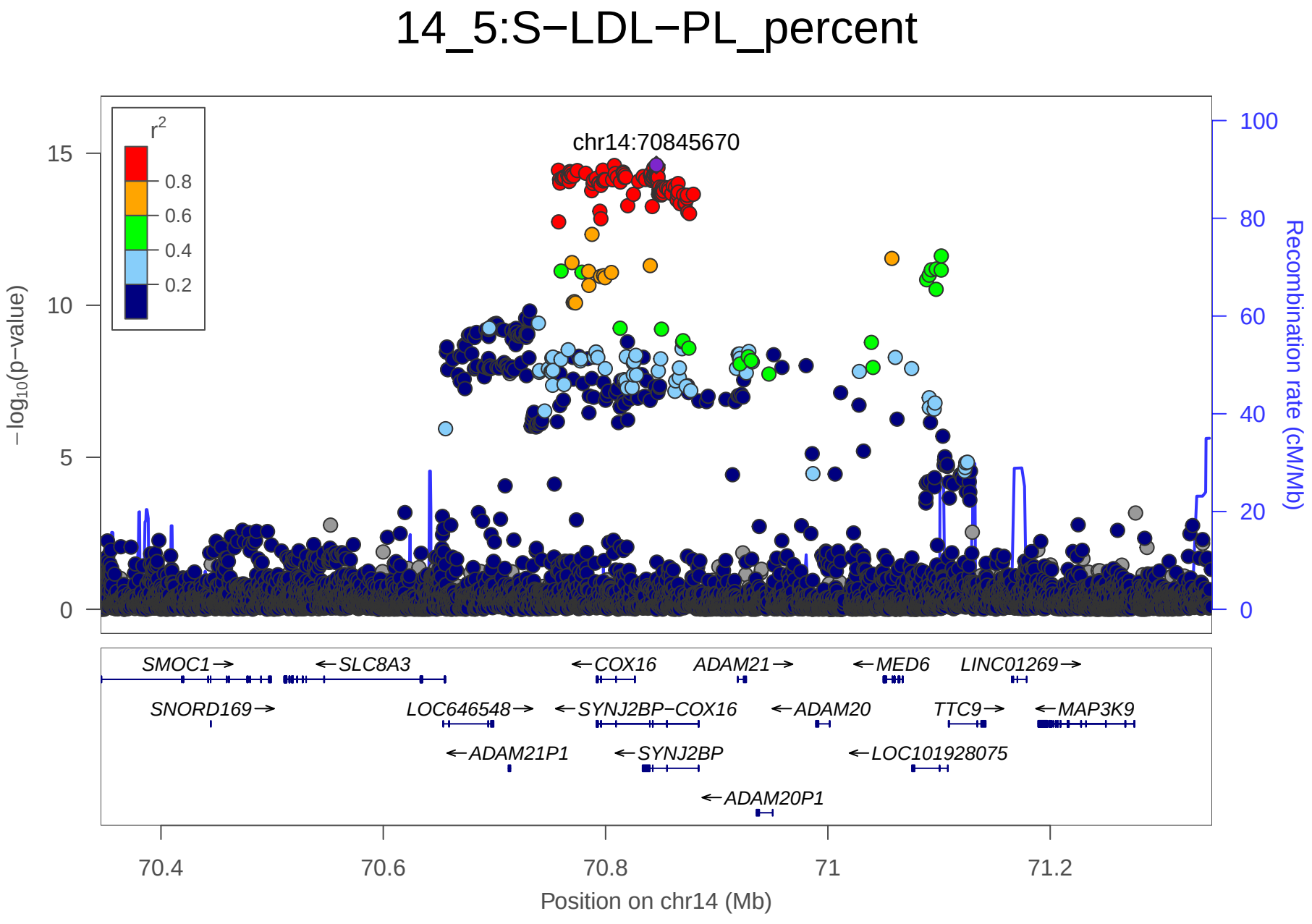

14_1:His
chr14:21492229
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
RNASE9
ANG
RNASE6
RNASE3
NDRG2
OR5AU1
RPGRIP1
RAB2B
RNASE11
EDDM3A
ECRP
MIR6717
LINC00641
SUPT16H
TOX4
LOC254028
EDDM3B
RNASE2
ARHGEF40
HNRNPC
CHD8
RNASE12
RNASE1
METTL17
SNORD9
OR6S1
LOC101929718
SNORD8
RNASE4
SLC39A2
METTL3
TPPP2
SALL2
RNASE13
RNASE7
RNASE8
2 genes omitted
Position on chr14 (Mb)

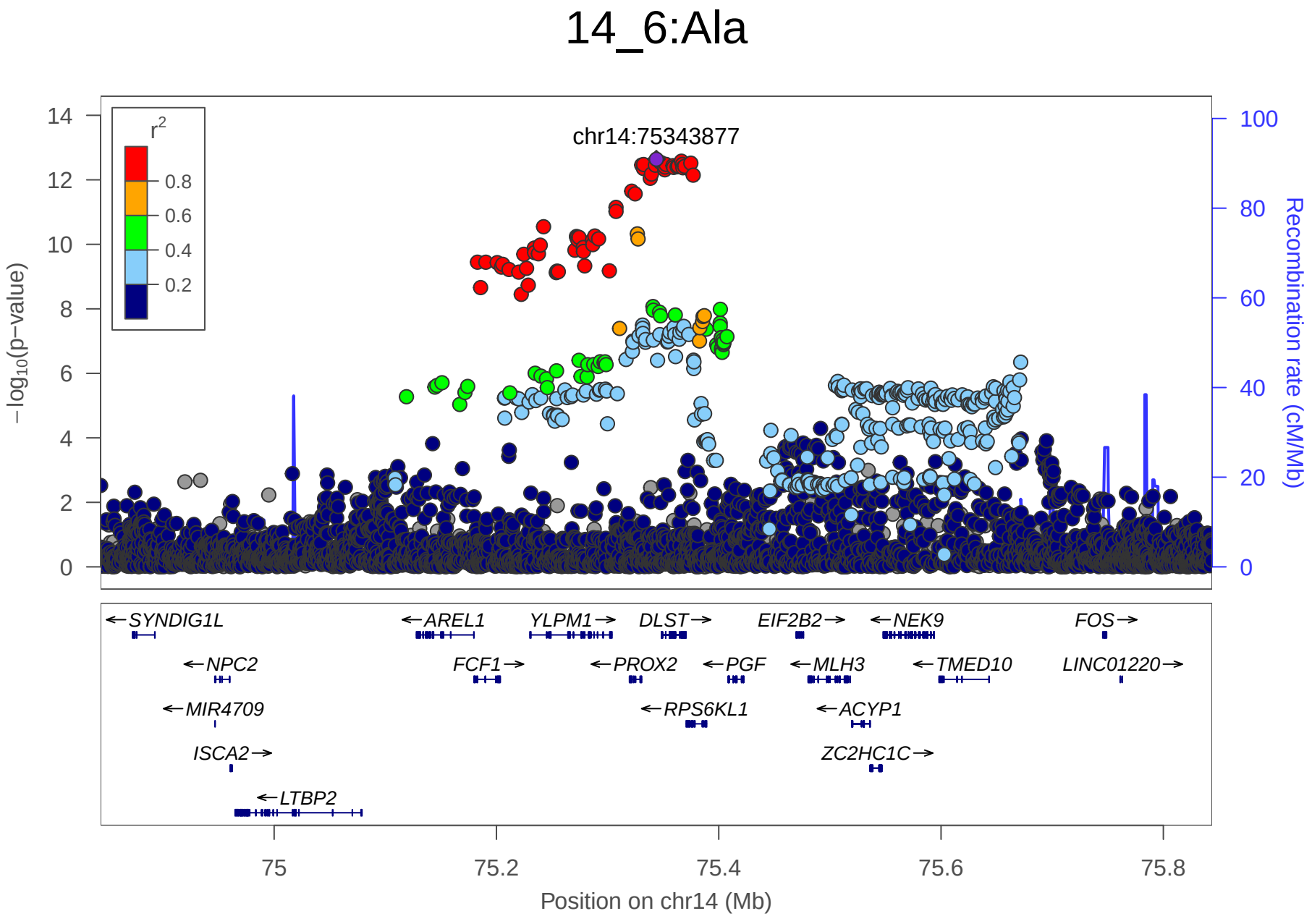
14_2:His

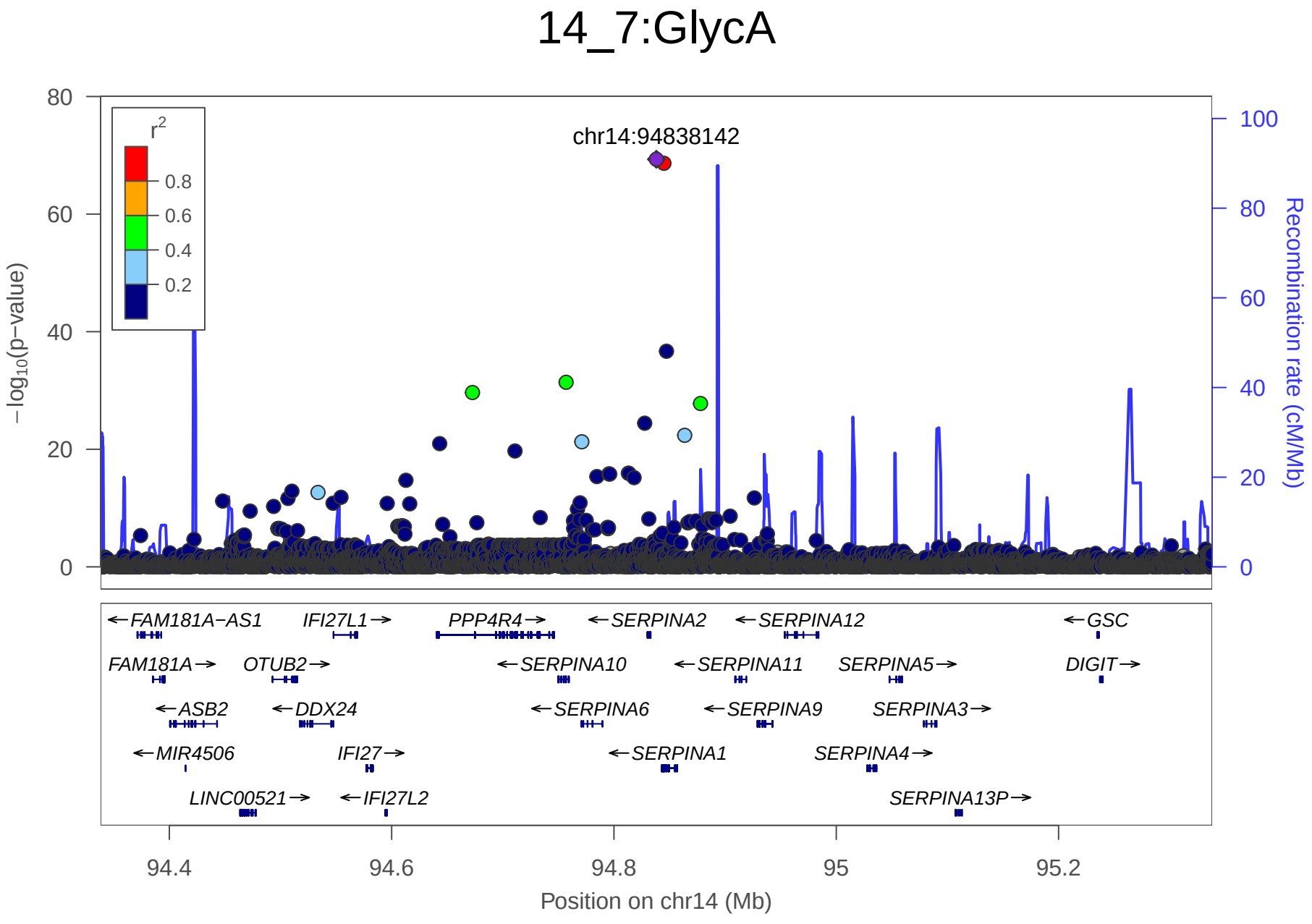

chr14:24872209
r2
0.8
0.6
0.4
0.2
−log10(p−value)
15
10
5
0
100
80
60
40
20
0
Recombination rate (cM/Mb)
←DHRS4−AS1
←NRL
IRF9→
←TGM1
NFATC4→
←CMA1
←GZMH
←STXBP6
DHRS4→
CPNE6→
REC8→
←DHRS1
NYNRIN→
←CTSG
DHRS4L2→
PCK2→
←IPO4
NOP9→
←CBLN3
←GZMB
DHRS4L1→
FITM1→
←NEDD8
←ADCY4
KHNYN→
CARMIL3→
←TM9SF1
←CIDEB
←SDR39U1
DCAF11→
←MDP1
LTB4R2→
LOC101927045→
PSME1→
GMPR2→
←RIPK3
←EMC9
←TINF2
←PSME2
←RABGGTA
←MIR7703
LTB4R→
4 genes
omitted
24.4
24.6
24.8
25
25.2
Position on chr14 (Mb)

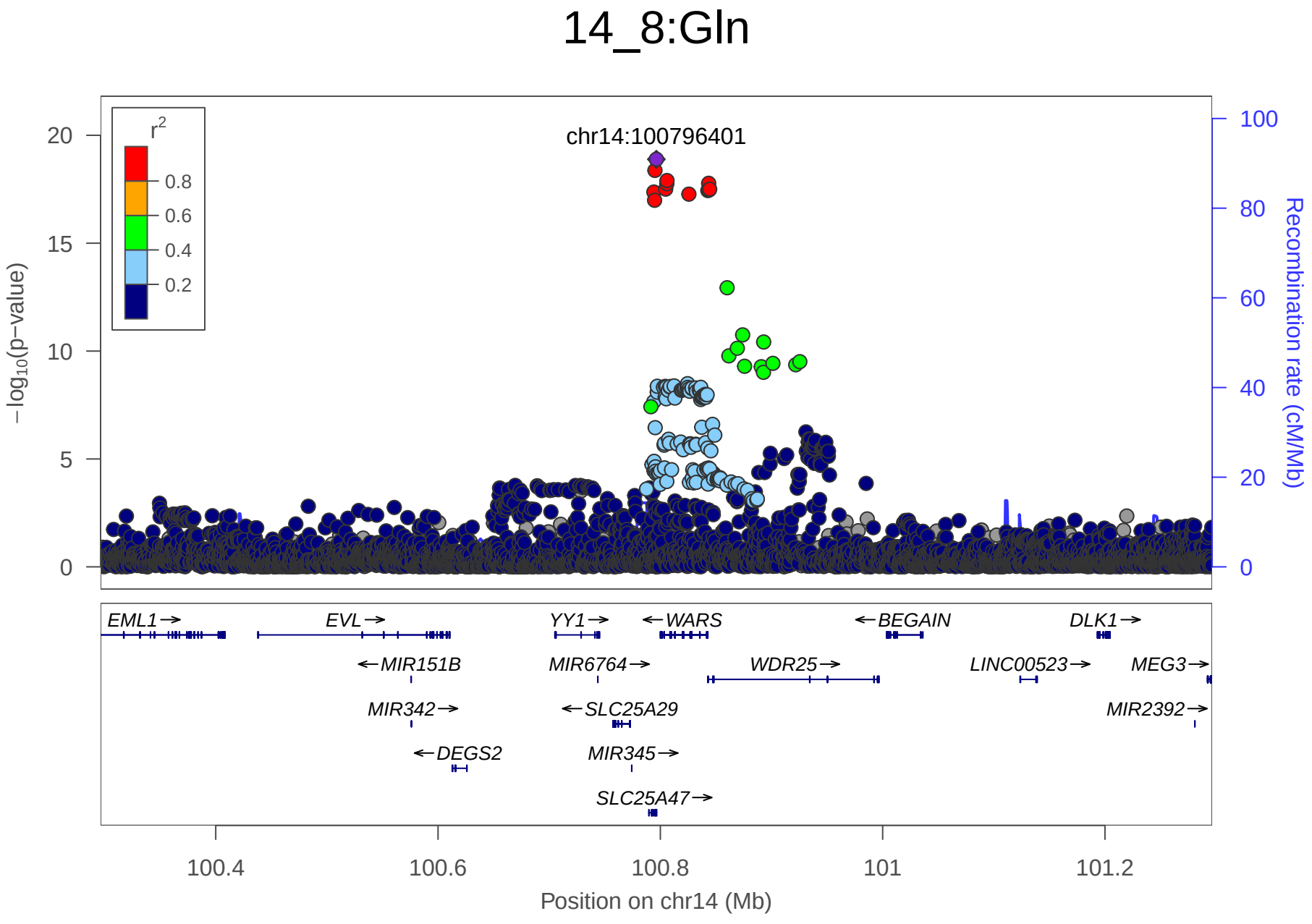

14_3:Phe
chr14:55425913
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
GMFB
SAMD4A
GCH1
WDHD1
LGALS3
FBXO34
TBPL2
CGRRF1
MIR4308
SOCS4
DLGAP5
ATG14
MAPK1IP1L
55
55.2
55.4
55.6
55.8
Position on chr14 (Mb)

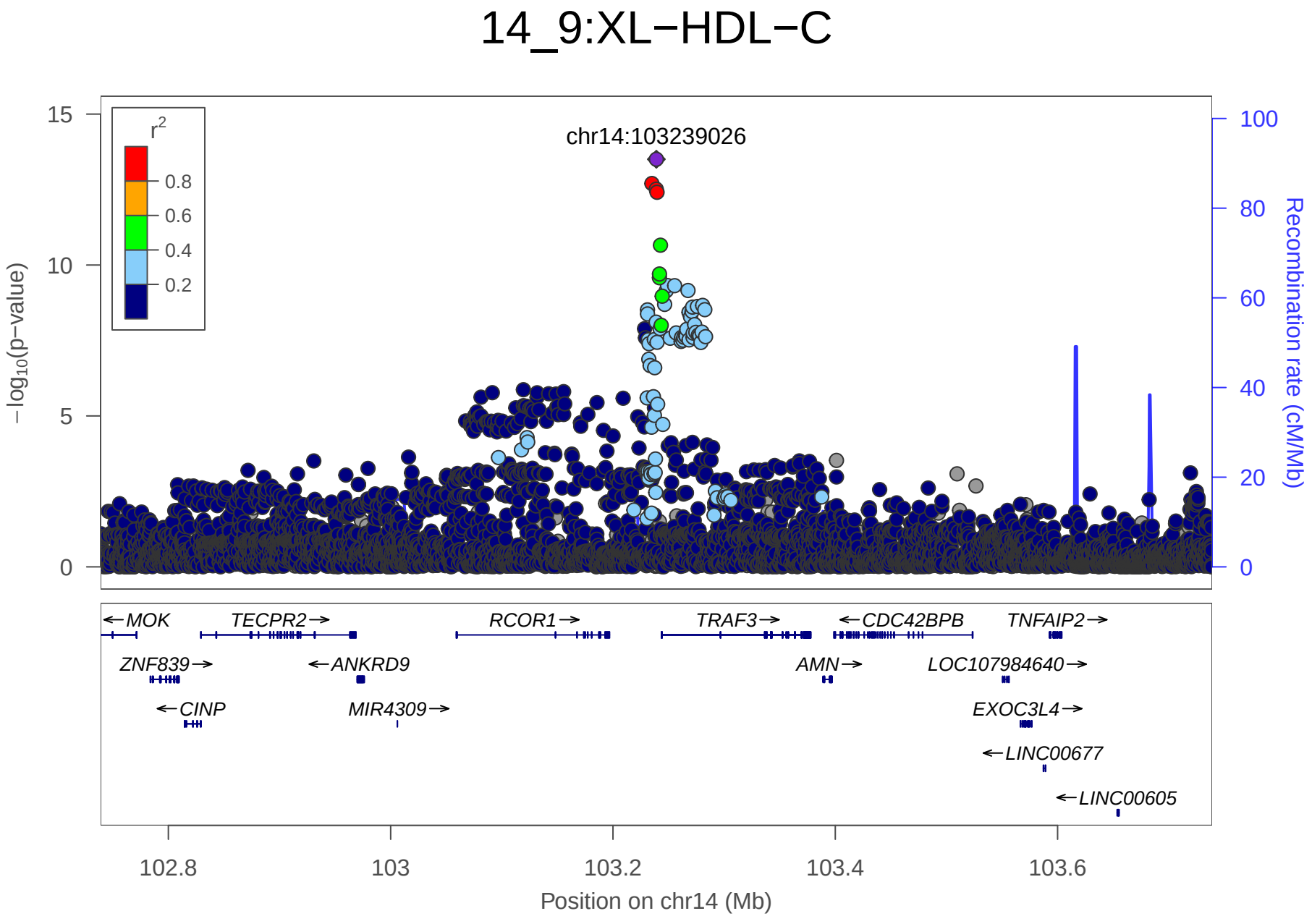

14_4:SM
r2
0.8
0.6
0.4
0.2
chr14:64232220
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
RHOJ
PPP2R5E
WDR89
SYNE2
GPHB5
SGPP1
MIR548H1
ESR2
63.8
64
64.2
64.4
64.6
Position on chr14 (Mb)


14_5:S−LDL−PL_percent
chr14:70845670
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SMOC1
SLC8A3
COX16
ADAM21
MED6
LINC01269
SNORD169
LOC646548
SYNJ2BP−COX16
ADAM20
TTC9
MAP3K9
ADAM21P1
SYNJ2BP
LOC101928075
ADAM20P1
Position on chr14 (Mb)

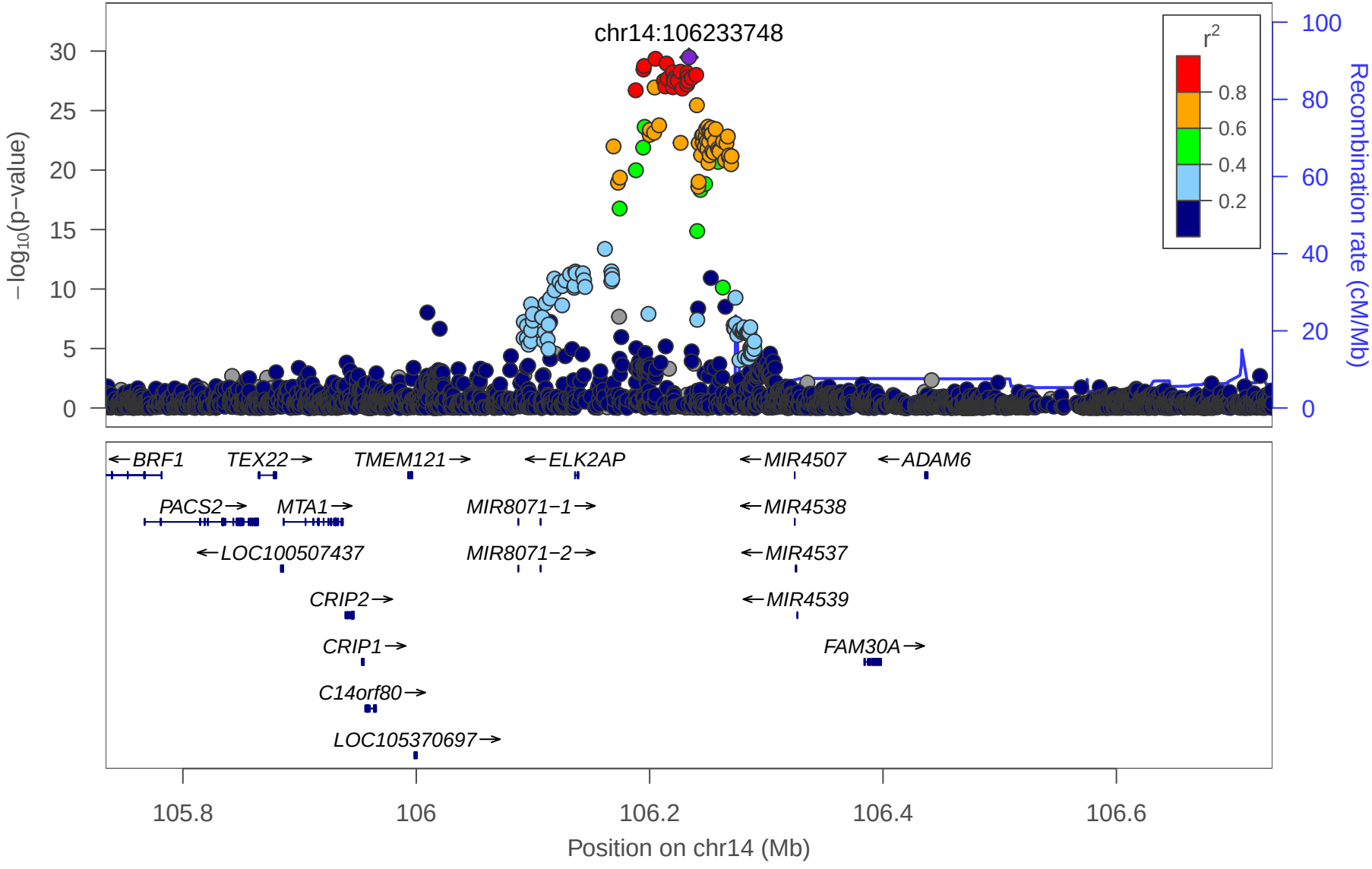

14_6:Ala
chr14:75343877
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SYNDIG1L
AREL1
YLPM1
DLST
EIF2B2
NEK9
FOS
NPC2
FCF1
PROX2
PGF
MLH3
TMED10
LINC01220
MIR4709
RPS6KL1
ACYP1
ISCA2
ZC2HC1C
LTBP2
75
75.2
75.4
75.6
75.8
Position on chr14 (Mb)

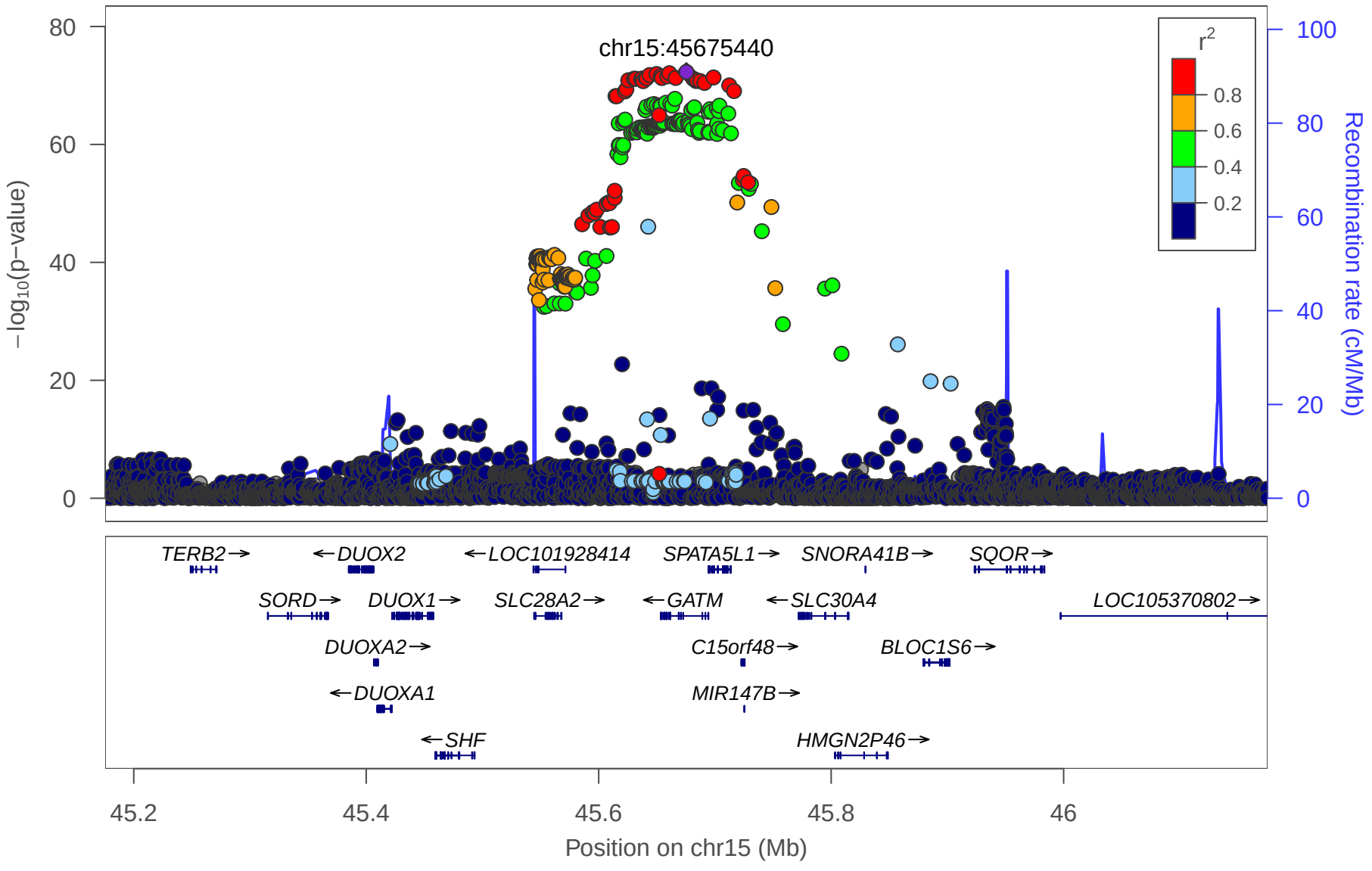

14_7:GlycA
chr14:94838142
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FAM181A−AS1
IFI27L1
PPP4R4
SERPINA2
SERPINA12
GSC
FAM181A
OTUB2
SERPINA10
SERPINA11
SERPINA5
DIGIT
ASB2
DDX24
SERPINA6
SERPINA9
SERPINA3
MIR4506
IFI27
SERPINA1
SERPINA4
LINC00521
IFI27L2
SERPINA13P
Position on chr14 (Mb)

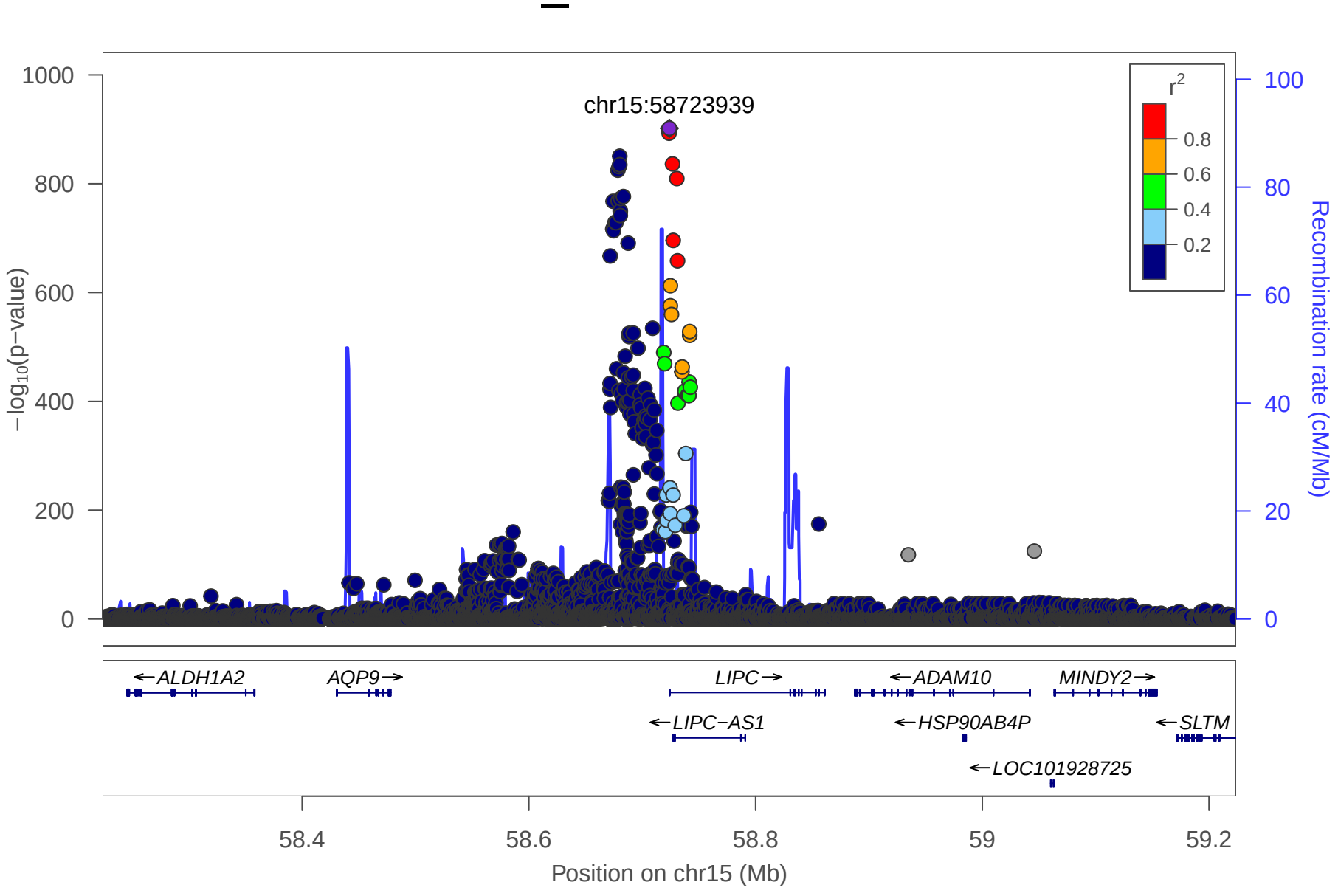

14_8:Gln
chr14:100796401
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
EML1
EVL
YY1
WARS
BEGAIN
DLK1
MIR151B
MIR6764
WDR25
LINC00523
MEG3
MIR342
SLC25A29
MIR2392
DEGS2
MIR345
SLC25A47
Position on chr14 (Mb)

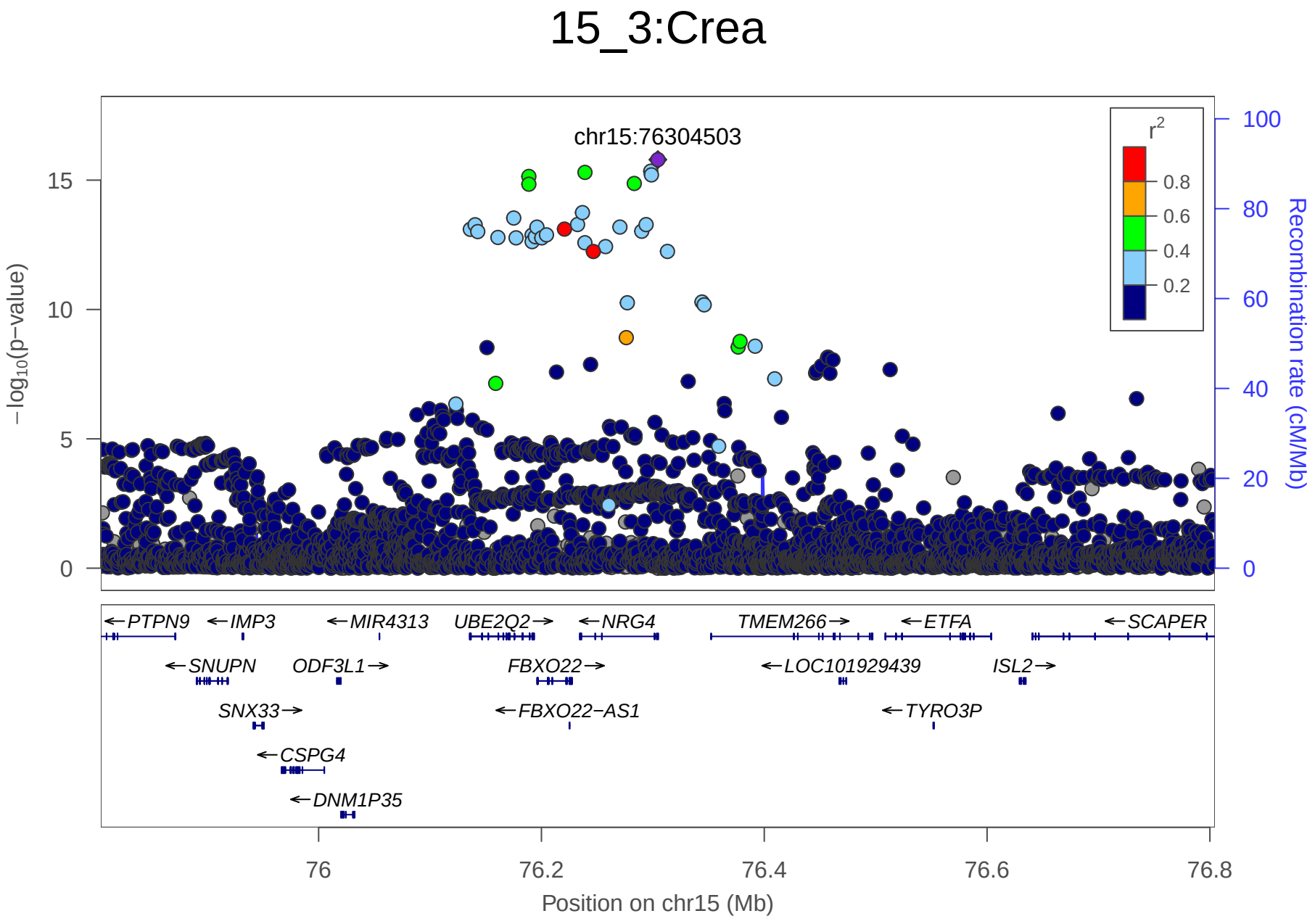

14_9:XL−HDL−C
chr14:103239026
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
MOK
TECPR2
RCOR1
TRAF3
CDC42BPB
TNFAIP2
ZNF839
ANKRD9
AMN
LOC107984640
CINP
MIR4309
EXOC3L4
LINC00677
LINC00605
Position on chr14 (Mb)

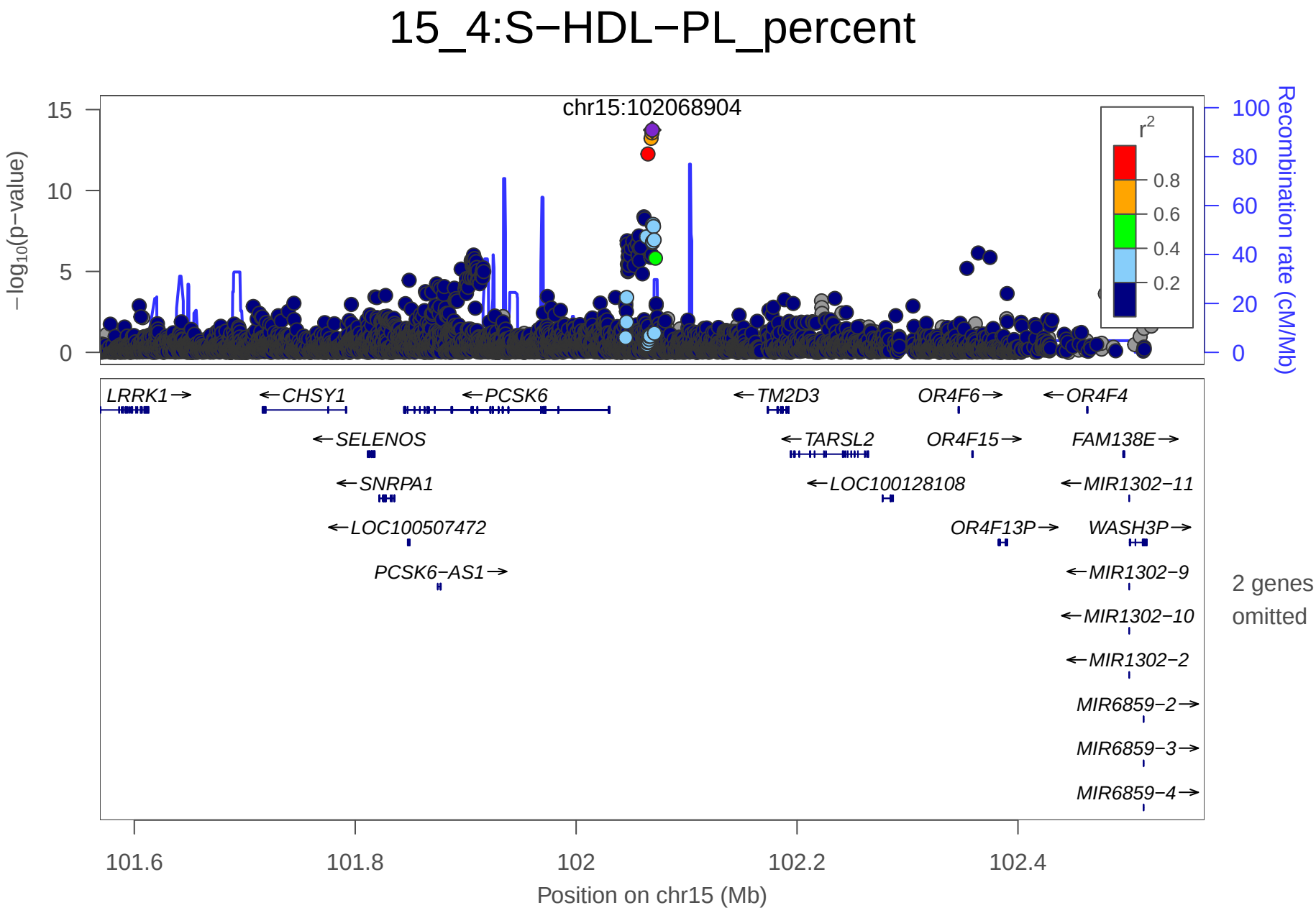
14_10:LDL−D

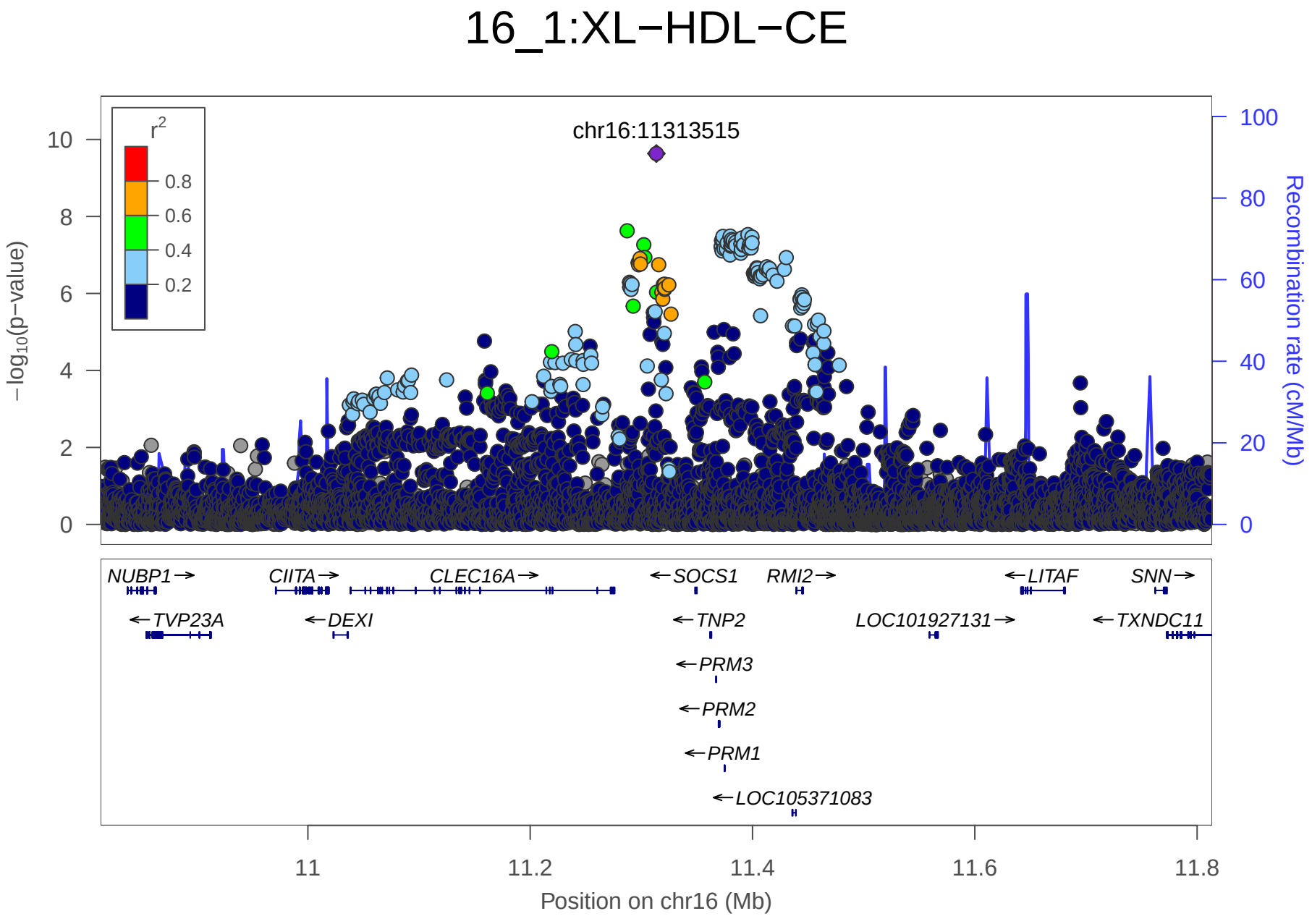

chr14:106233748
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
BRF1
TEX22
TMEM121
ELK2AP
MIR4507
ADAM6
PACS2
MTA1
MIR8071−1
MIR4538
LOC100507437
MIR8071−2
MIR4537
CRIP2
MIR4539
CRIP1
FAM30A
C14orf80
LOC105370697
105.8
106
106.2
106.4
106.6
Position on chr14 (Mb)


15_1:Crea
chr15:45675440
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
80
60
40
20
0
100
80
60
40
20
0
TERB2→
←DUOX2
←LOC101928414
SPATA5L1→
SNORA41B→
SQOR→
SORD→
DUOX1→
SLC28A2→
←GATM
←SLC30A4
LOC105370802→
DUOXA2→
C15orf48→
BLOC1S6→
←DUOXA1
MIR147B→
←SHF
HMGN2P46→
45.2
45.4
45.6
45.8
46
Position on chr15 (Mb)

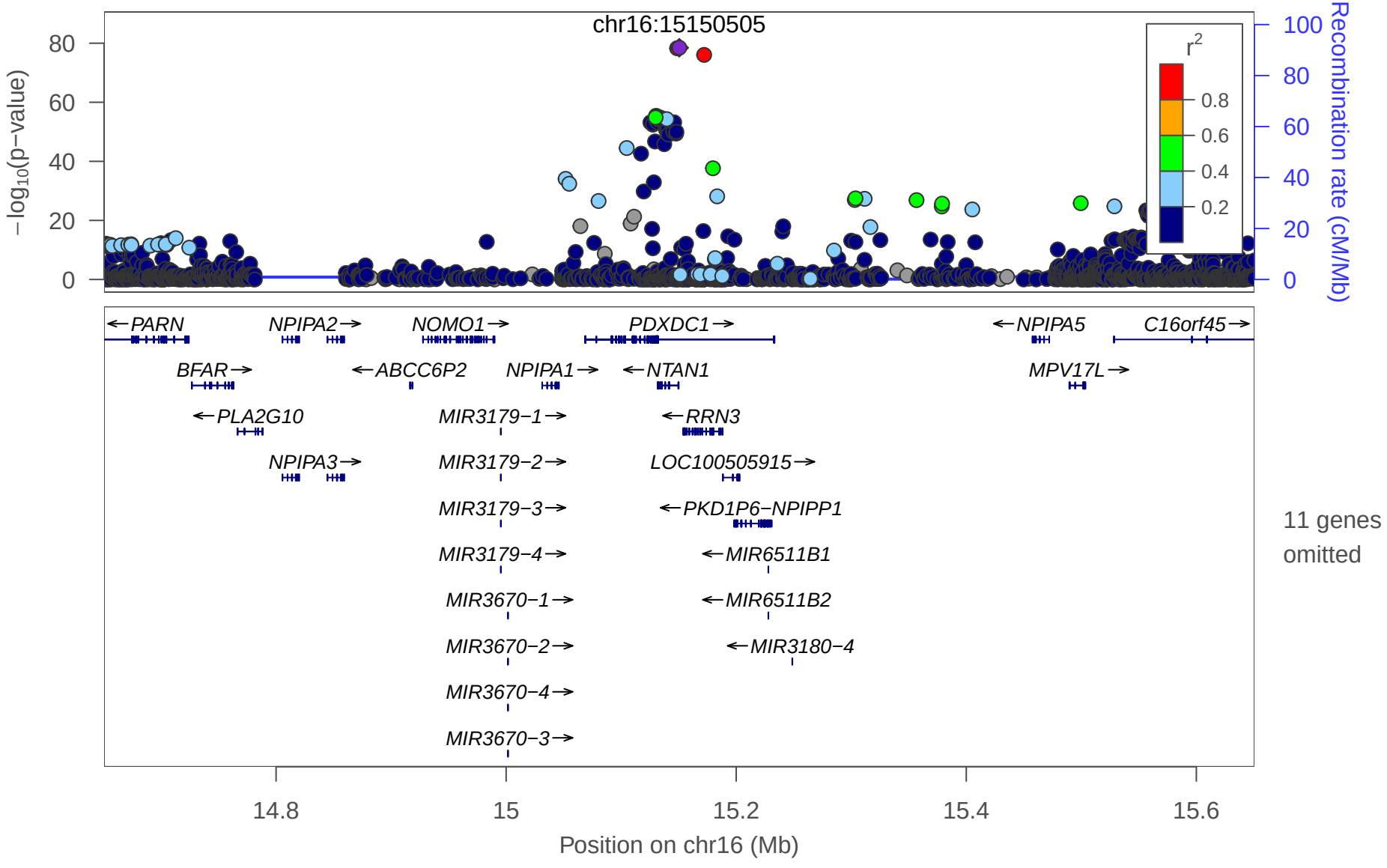

15_2:L−HDL−TG
chr15:58723939
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
1000
800
600
400
200
0
100
80
60
40
20
0
←ALDH1A2
AQP9→
LIPC→
←ADAM10
MINDY2→
←LIPC−AS1
←HSP90AB4P
←SLTM
←LOC101928725
58.4
58.6
58.8
59
59.2
Position on chr15 (Mb)

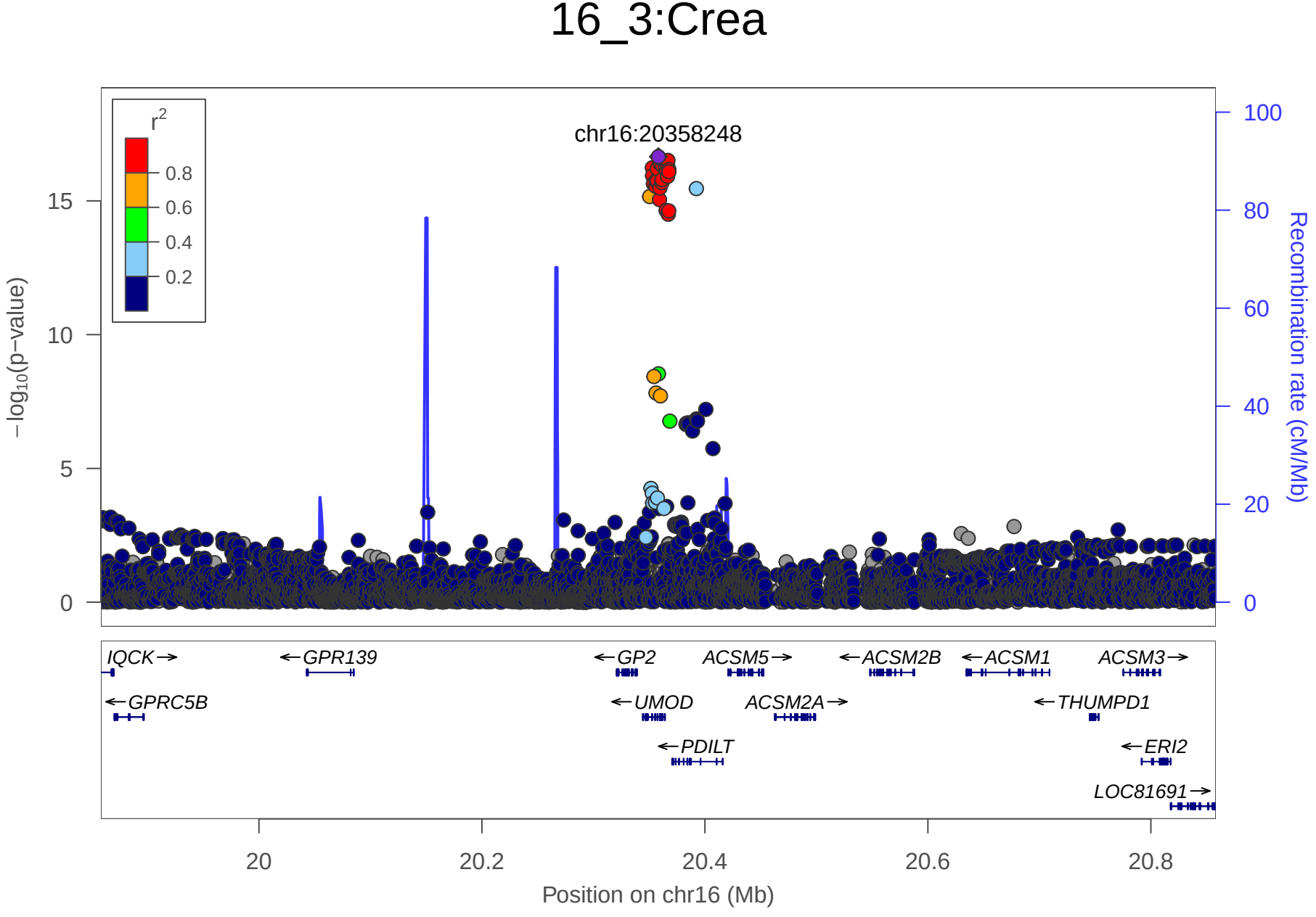

15_3:Crea
chr15:76304503
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
PTPN9
IMP3
MIR4313
UBE2Q2
NRG4
TMEM266
ETFA
SCAPER
SNUPN
ODF3L1
FBXO22
LOC101929439
ISL2
SNX33
FBXO22−AS1
TYRO3P
CSPG4
DNM1P35
76
76.2
76.4
76.6
76.8
Position on chr15 (Mb)


15_4:S−HDL−PL_percent
chr15:102068904
−log10(p−value)
Recombination rate (cM/Mb)
r2
0.8
0.6
0.4
0.2
LRRK1
CHSY1
PCSK6
TM2D3
OR4F6
OR4F4
SELENOS
TARSL2
OR4F15
FAM138E
SNRPA1
LOC100128108
MIR1302−11
LOC100507472
OR4F13P
WASH3P
PCSK6−AS1
MIR1302−9
MIR1302−10
MIR1302−2
MIR6859−2
MIR6859−3
MIR6859−4
2 genes omitted
Position on chr15 (Mb)

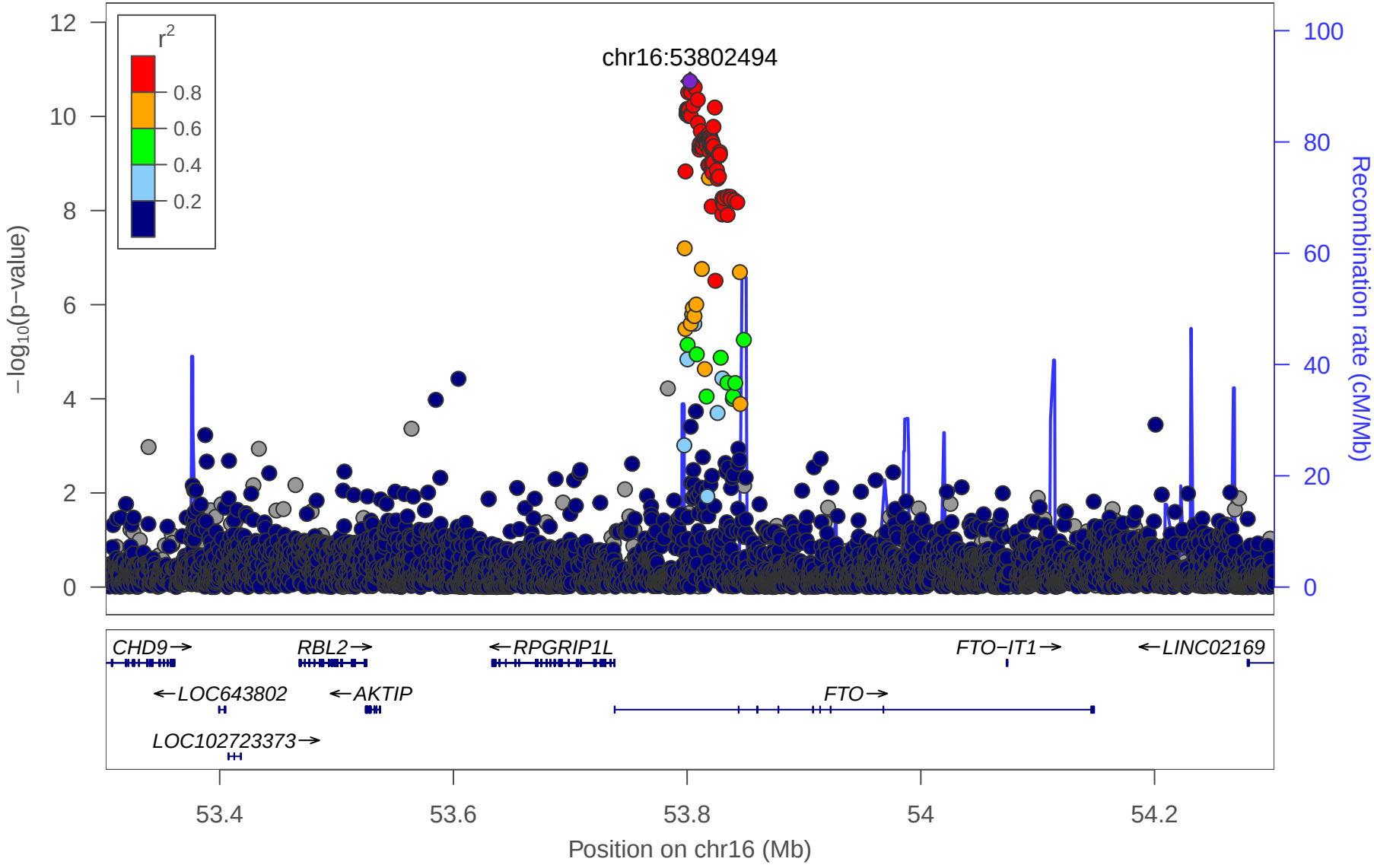

16_1:XL−HDL−CE
chr16:11313515
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
NUBP1
CIITA
CLEC16A
SOCS1
RMI2
LITAF
SNN
TVP23A
DEXI
TNP2
LOC101927131
TXNDC11
PRM3
PRM2
PRM1
LOC105371083
Position on chr16 (Mb)

16_2:UnsatDeg

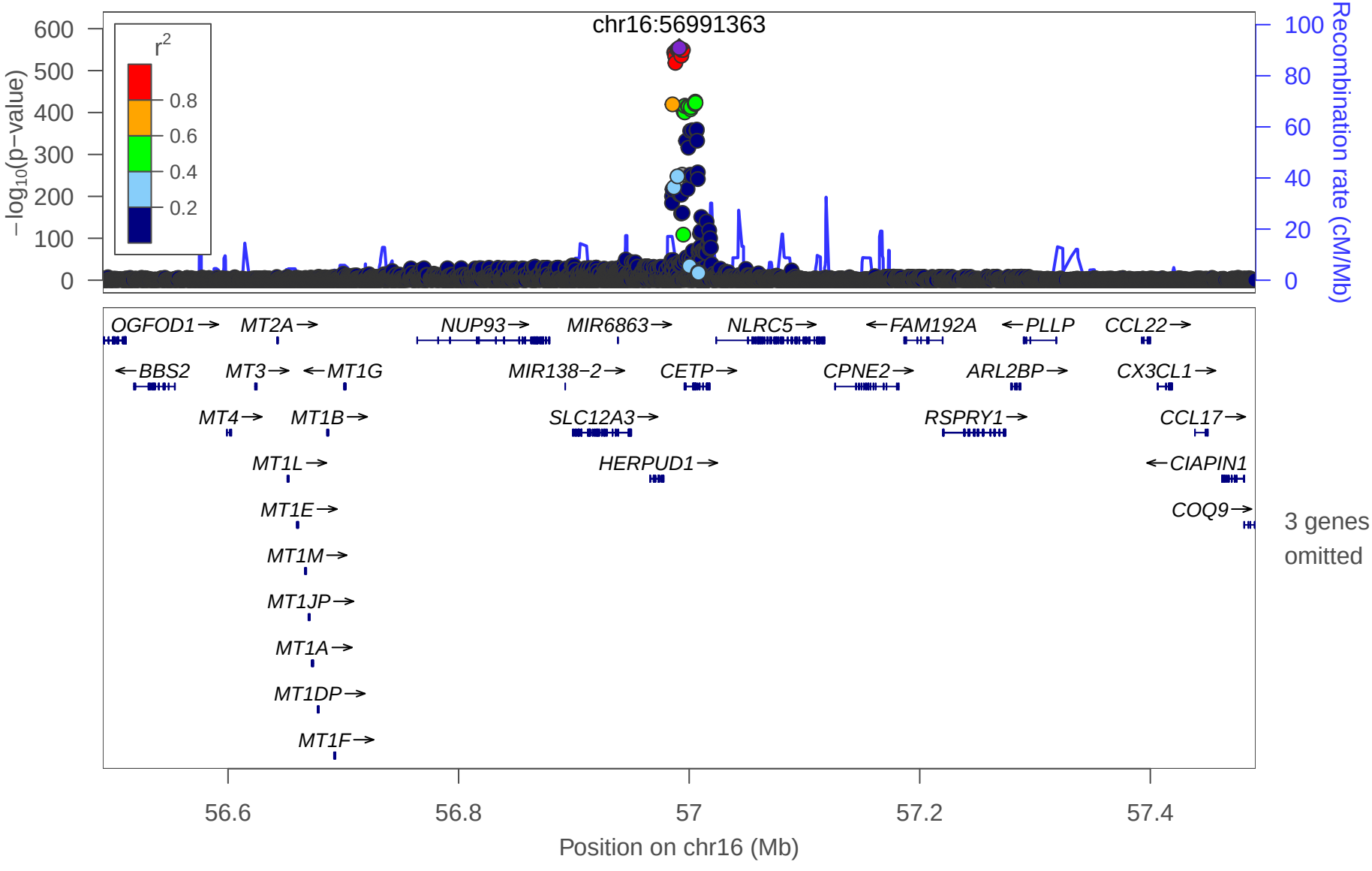


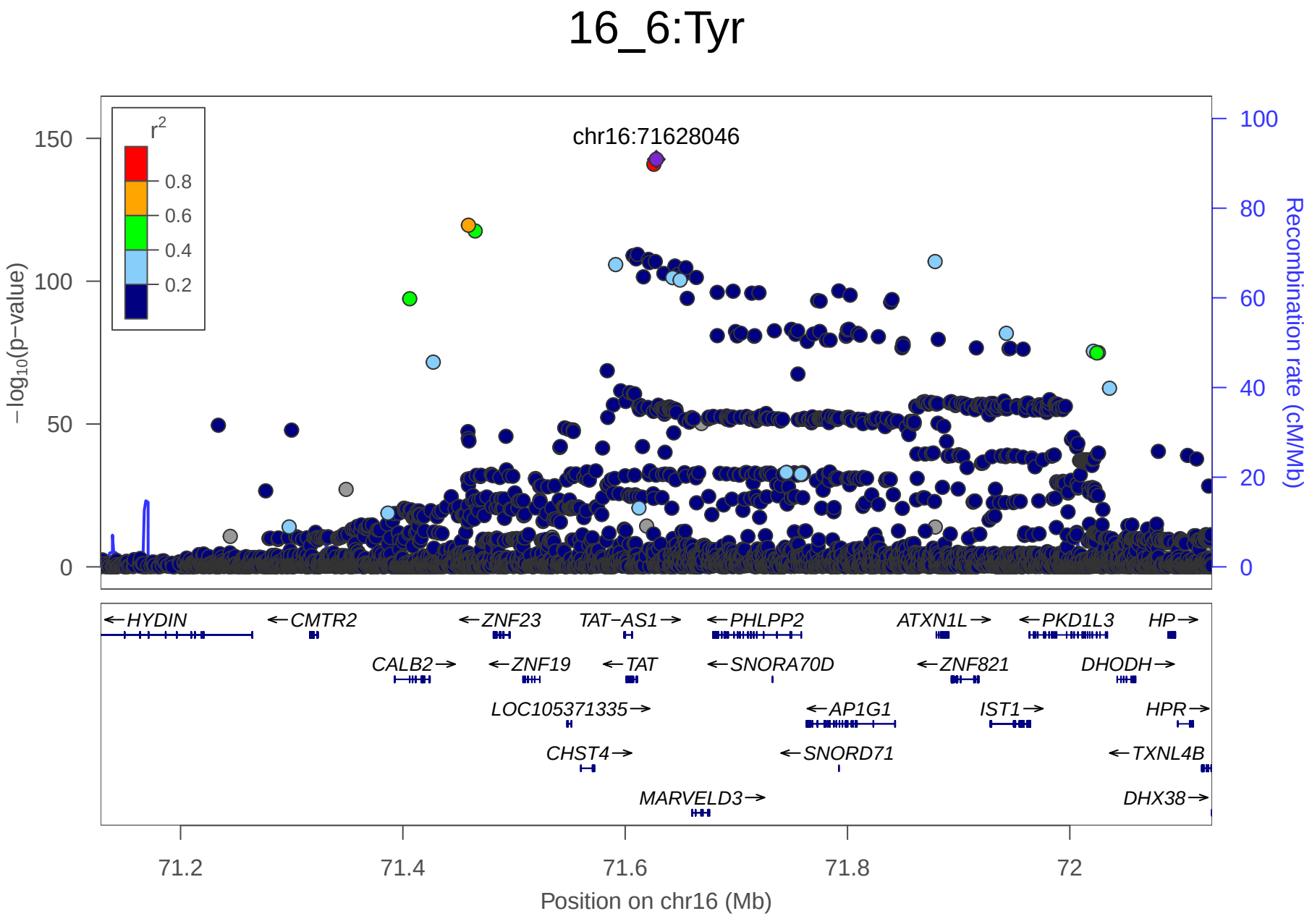

16_3:Crea
chr16:20358248
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
IQCK
GPR139
GP2
ACSM5
ACSM2B
ACSM1
ACSM3
GPRC5B
UMOD
ACSM2A
THUMPD1
PDILT
ERI2
LOC81691
Position on chr16 (Mb)

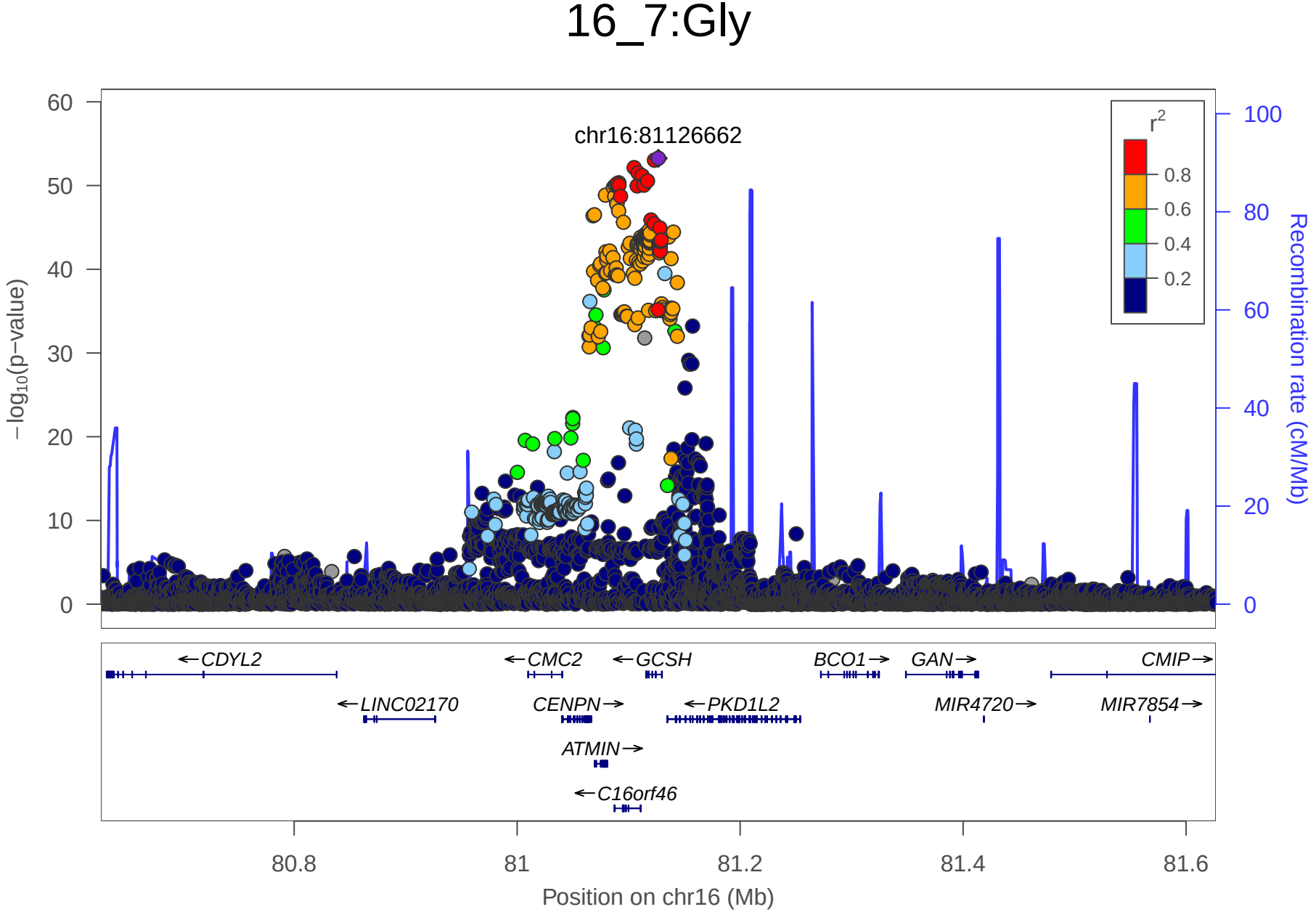
16_4:S−VLDL−PL_percent

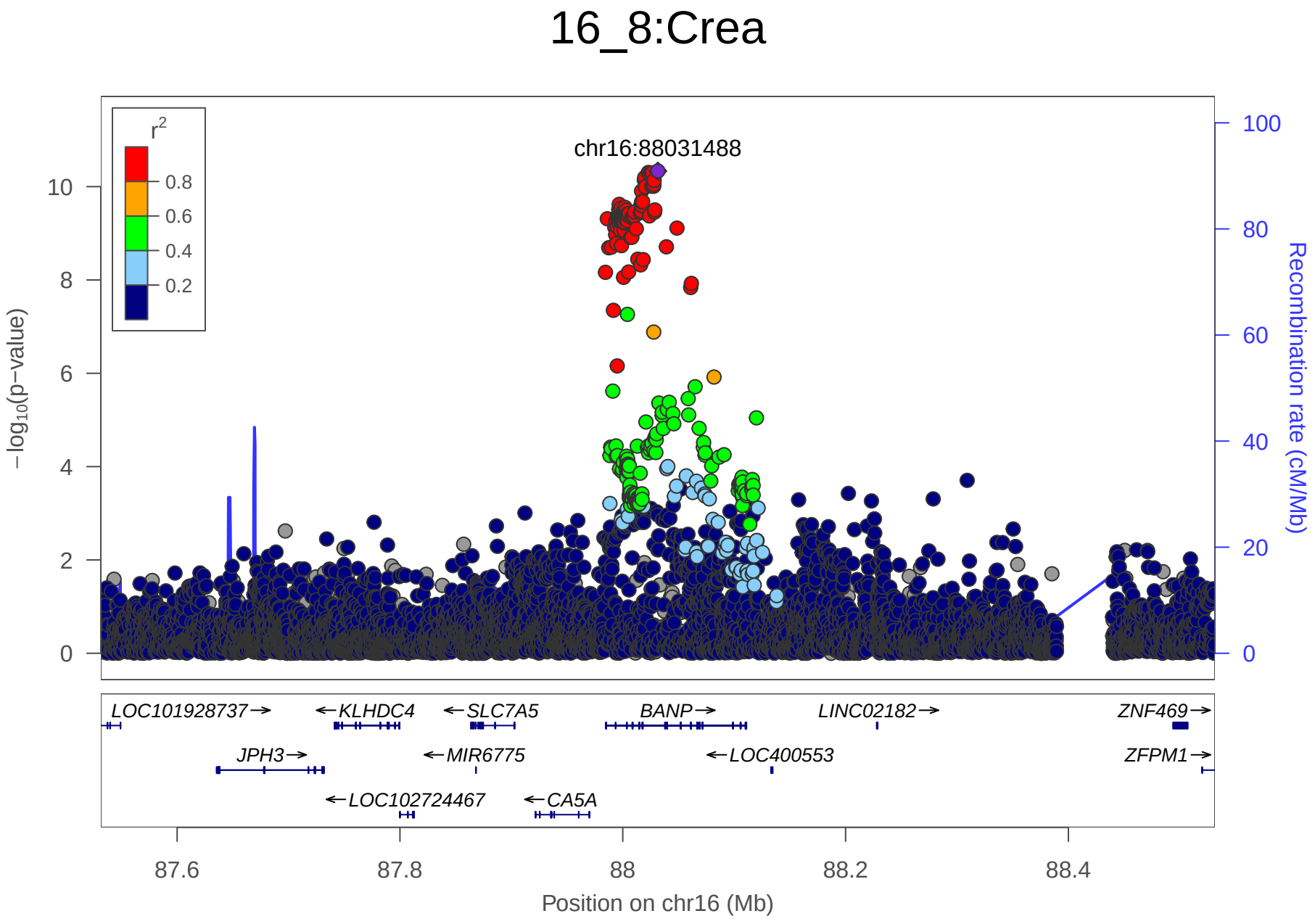


16_5:HDL−C

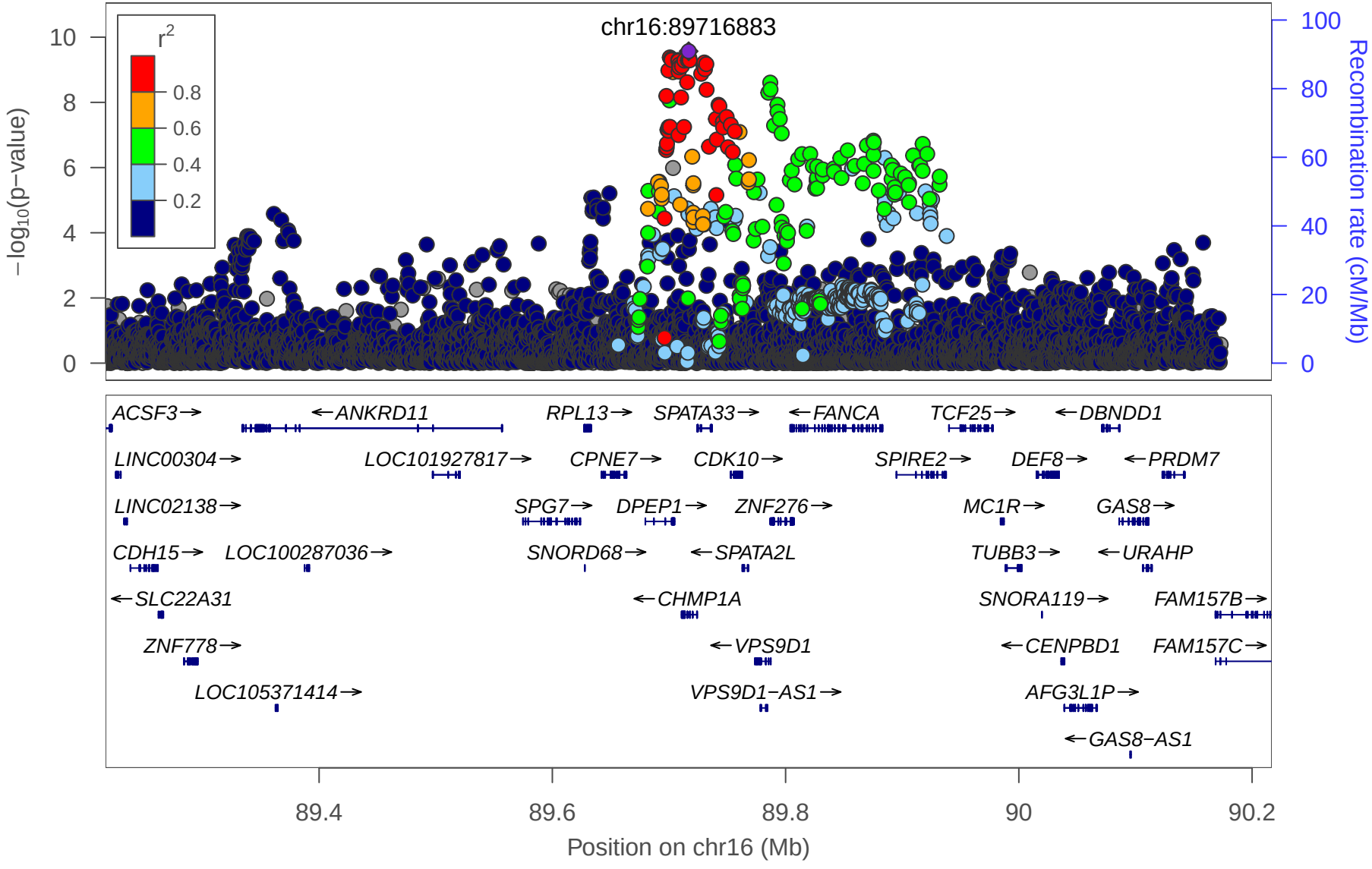

chr16:56991363
r²
0.8
0.6
0.4
0.2
−log10(p−value)
600
500
400
300
200
100
0
100
80
60
40
20
0
Recombination rate (cM/Mb)
OGFOD1→
MT2A→
NUP93→
MIR6863→
NLRC5→
←FAM192A
←PLLP
CCL22→
←BBS2
MT3→
←MT1G
MIR138−2→
CETP→
CPNE2→
ARL2BP→
CX3CL1→
MT4→
MT1B→
SLC12A3→
RSPRY1→
CCL17→
MT1L→
HERPUD1→
←CIAPIN1
MT1E→
COQ9→
MT1M→
MT1JP→
MT1A→
MT1DP→
MT1F→
3 genes
omitted
56.6
56.8
57
57.2
57.4
Position on chr16 (Mb)

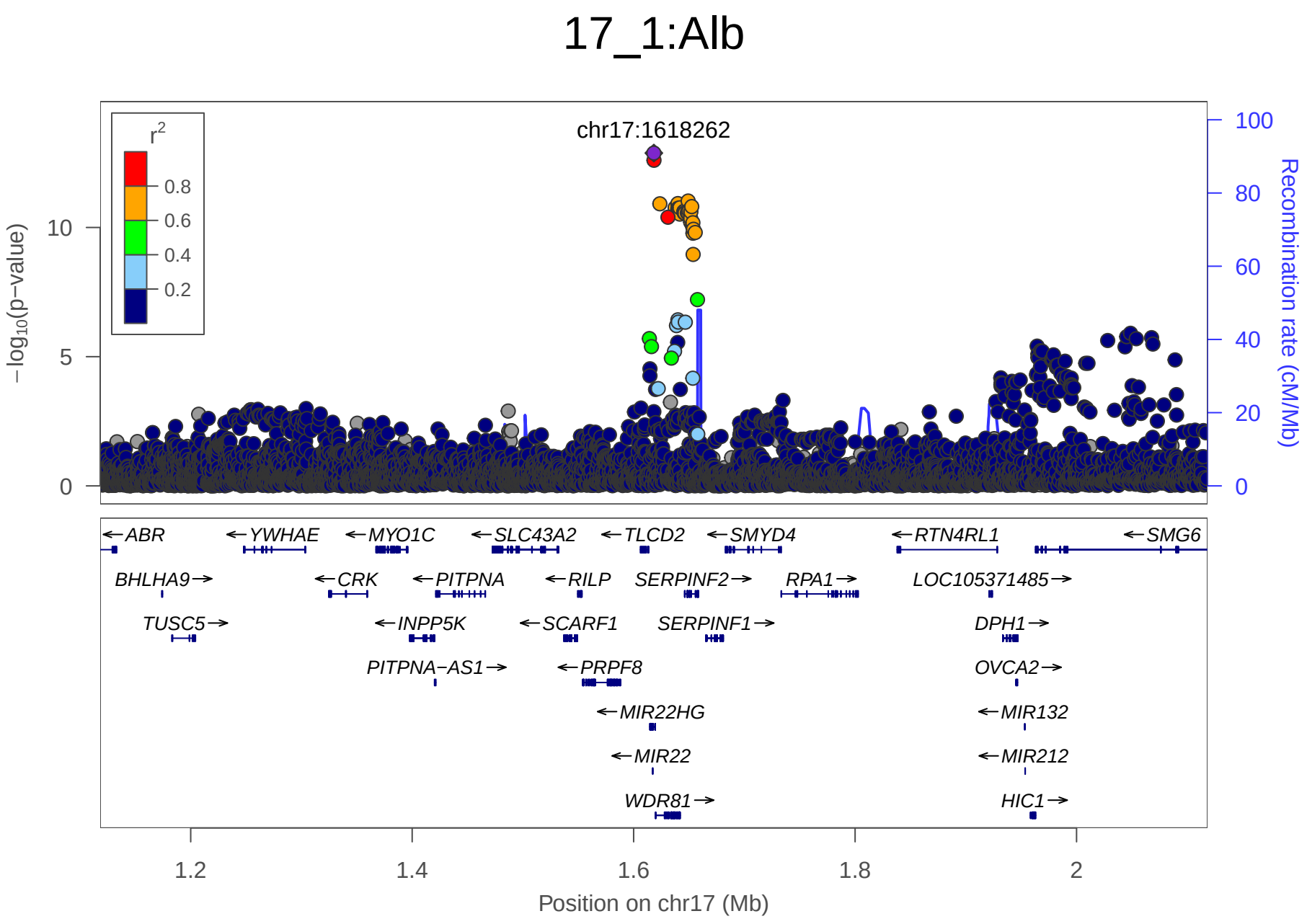

16_6:Tyr
chr16:71628046
r2
0.8
0.6
0.4
0.2
150
100
50
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←HYDIN
←CMTR2
←ZNF23
TAT−AS1→
←PHLPP2
ATXN1L→
←PKD1L3
HP→
CALB2→
←ZNF19
←TAT
←SNORA70D
←ZNF821
DHODH→
LOC105371335→
←AP1G1
IST1→
HPR→
CHST4→
←SNORD71
←TXNL4B
MARVELD3→
DHX38→
71.2
71.4
71.6
71.8
72
Position on chr16 (Mb)


16_7:Gly
chr16:81126662
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CDYL2
CMC2
GCSH
BCO1
GAN
CMIP
LINC02170
CENPN
PKD1L2
MIR4720
MIR7854
ATMIN
C16orf46
Position on chr16 (Mb)

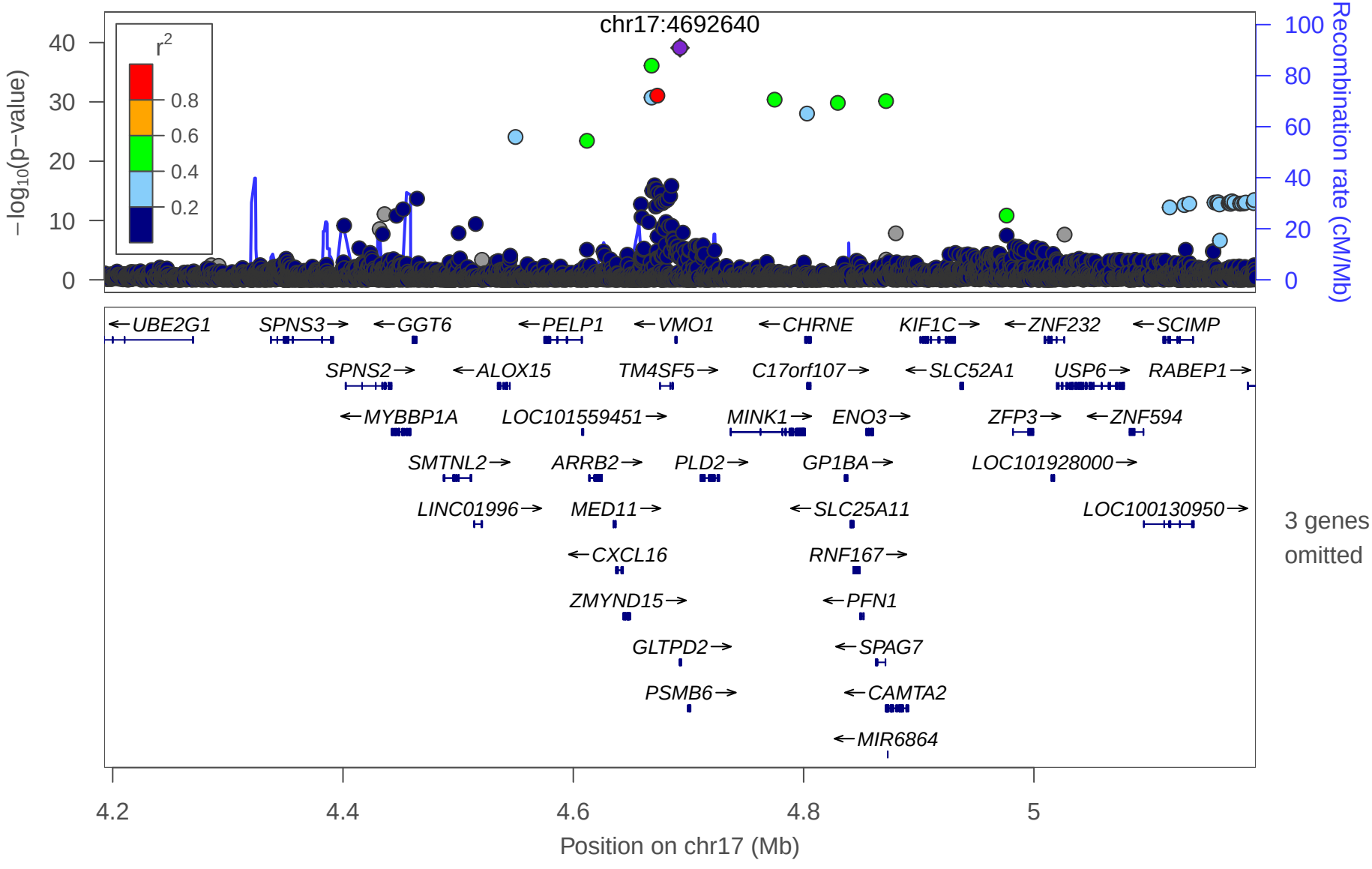

16_8:Crea
chr16:88031488
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LOC101928737
KLHDC4
SLC7A5
BANP
LINC02182
ZNF469
JPH3
MIR6775
LOC400553
ZFPM1
LOC102724467
CA5A
Position on chr16 (Mb)

16_9:Crea

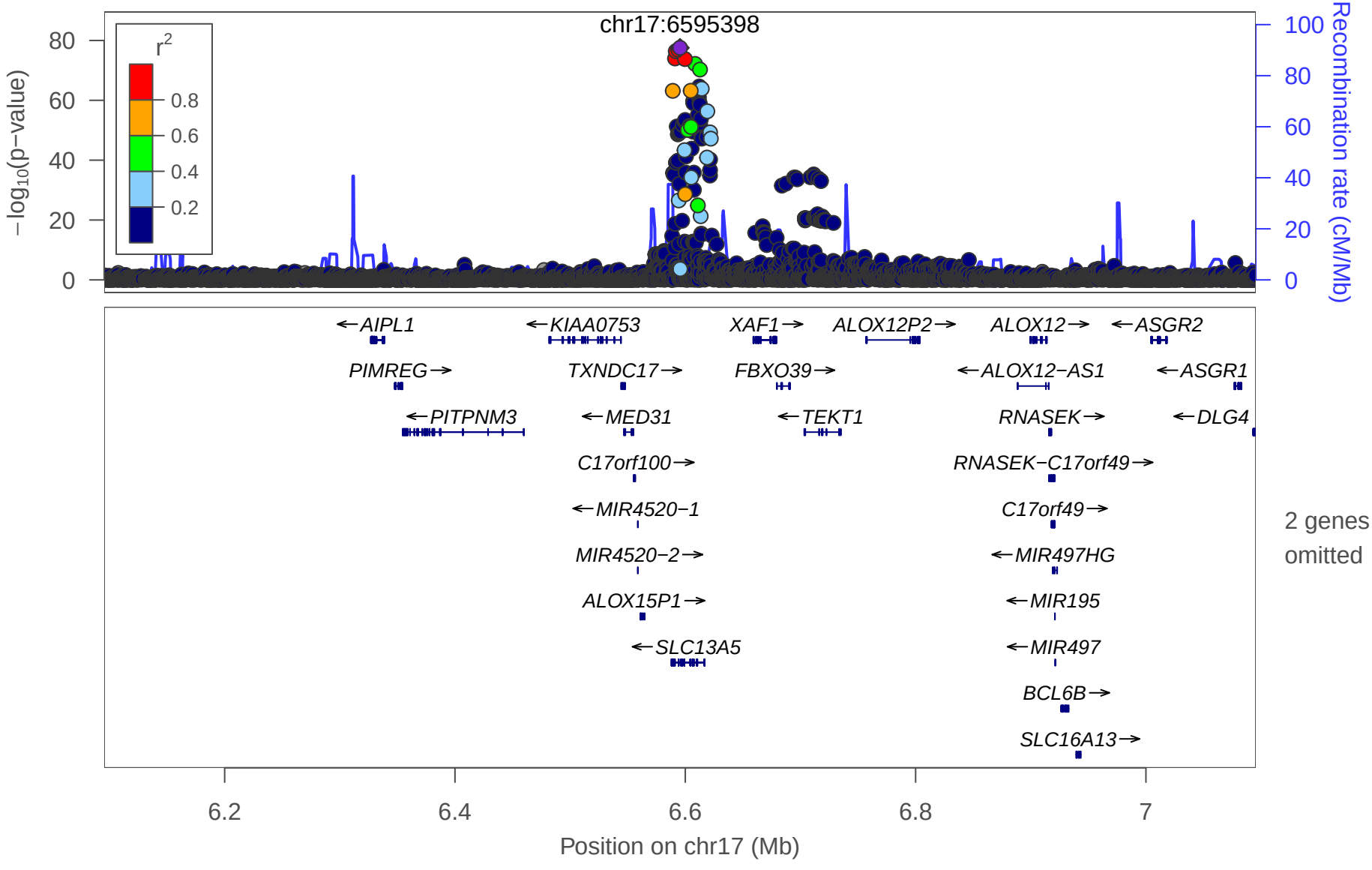

chr16:89716883
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ACSF3→
←ANKRD11
RPL13→
SPATA33→
←FANCA
TCF25→
←DBNDD1
LINC00304→
LOC101927817→
CPNE7→
CDK10→
SPIRE2→
DEF8→
←PRDM7
LINC02138→
SPG7→
DPEP1→
ZNF276→
MC1R→
GAS8→
CDH15→
LOC100287036→
SNORD68→
←SPATA2L
TUBB3→
←URAHP
←SLC22A31
←CHMP1A
SNORA119→
FAM157B→
ZNF778→
←VPS9D1
←CENPBD1
FAM157C→
LOC105371414→
VPS9D1−AS1→
AFG3L1P→
←GAS8−AS1
89.4
89.6
89.8
90
90.2
Position on chr16 (Mb)

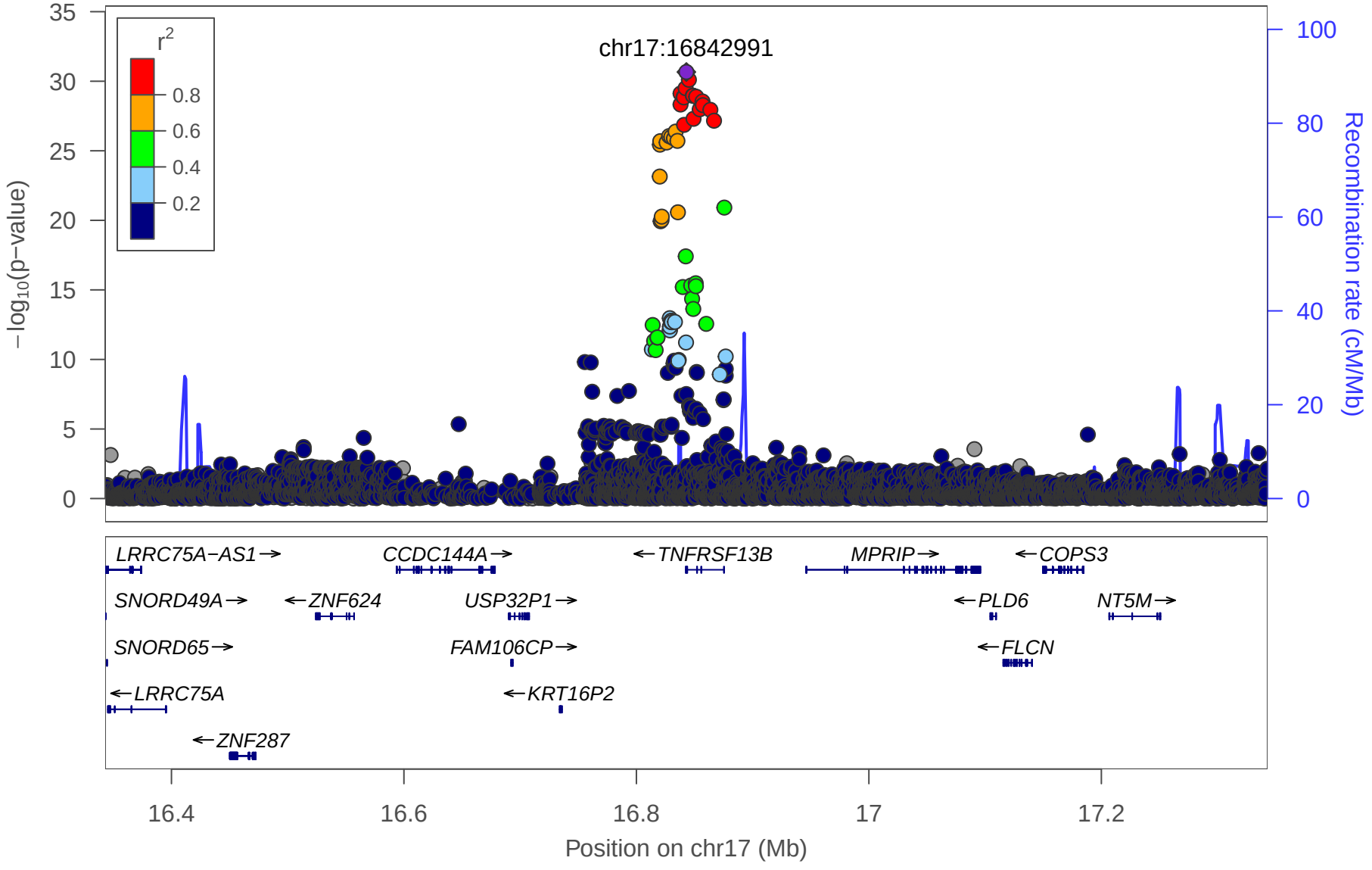

17_1:Alb
chr17:1618262
r2
0.8
0.6
0.4
0.2
−log10(p−value)
10
5
0
100
80
60
40
20
0
Recombination rate (cM/Mb)
←ABR
←YWHAE
←MYO1C
←SLC43A2
←TLCD2
←SMYD4
←RTN4RL1
←SMG6
BHLHA9→
←CRK
←PITPNA
←RILP
SERPINF2→
RPA1→
LOC105371485→
TUSC5→
←INPP5K
←SCARF1
SERPINF1→
DPH1→
PITPNA−AS1→
←PRPF8
OVCA2→
←MIR22HG
←MIR132
←MIR22
←MIR212
WDR81→
HIC1→
1.2
1.4
1.6
1.8
2
Position on chr17 (Mb)

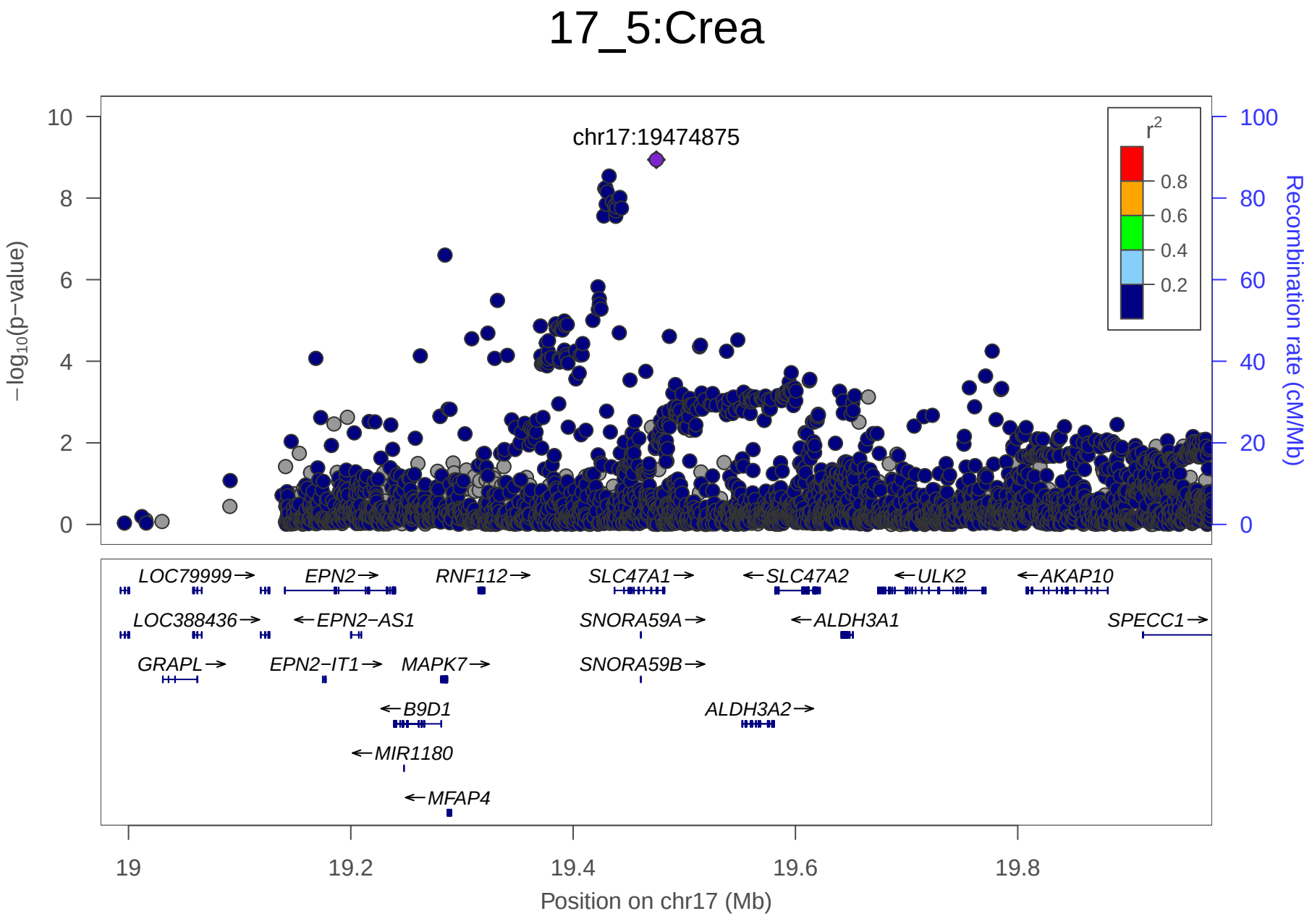
17_2:IDL−TG

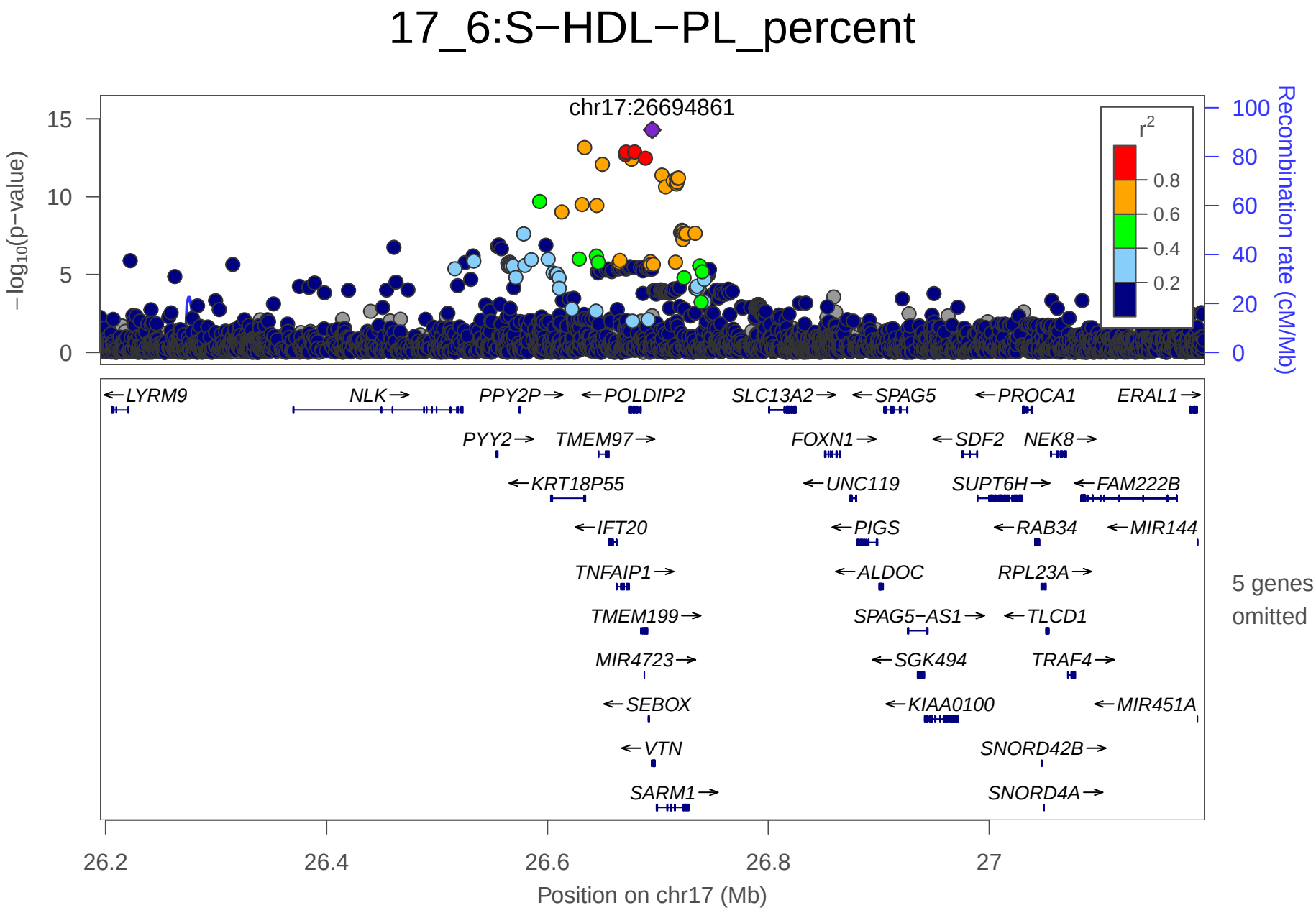

chr17:4692640
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
UBE2G1
SPNS3
GGT6
PELP1
VMO1
CHRNE
KIF1C
ZNF232
SCIMP
SPNS2
ALOX15
TM4SF5
C17orf107
SLC52A1
USP6
RABEP1
MYBBP1A
LOC101559451
MINK1
ENO3
ZFP3
ZNF594
SMTNL2
ARRB2
PLD2
GP1BA
LOC101928000
LINC01996
MED11
SLC25A11
LOC100130950
CXCL16
RNF167
ZMYND15
PFN1
GLTPD2
SPAG7
PSMB6
CAMTA2
MIR6864
3 genes omitted
Position on chr17 (Mb)

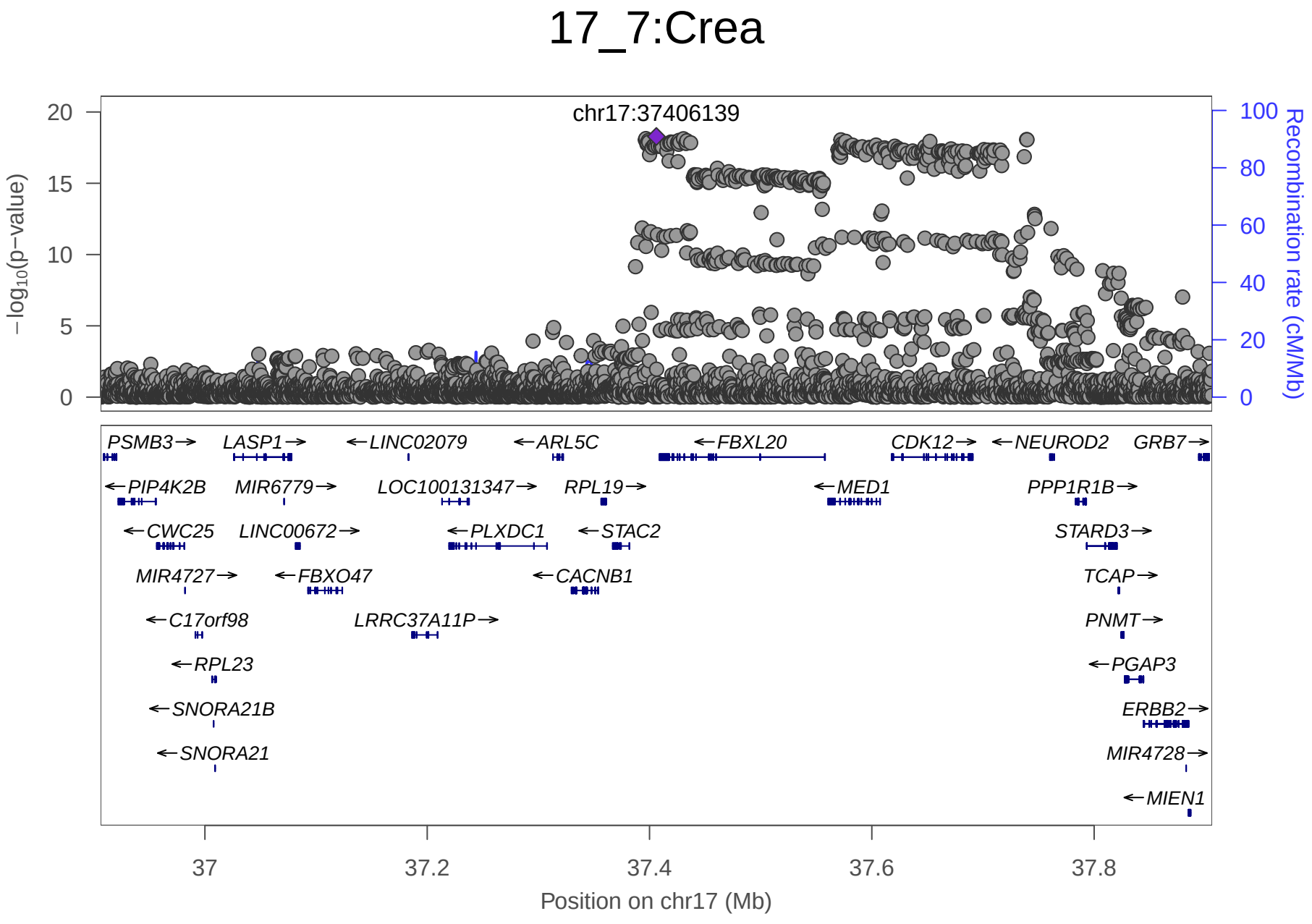
17_3:Cit

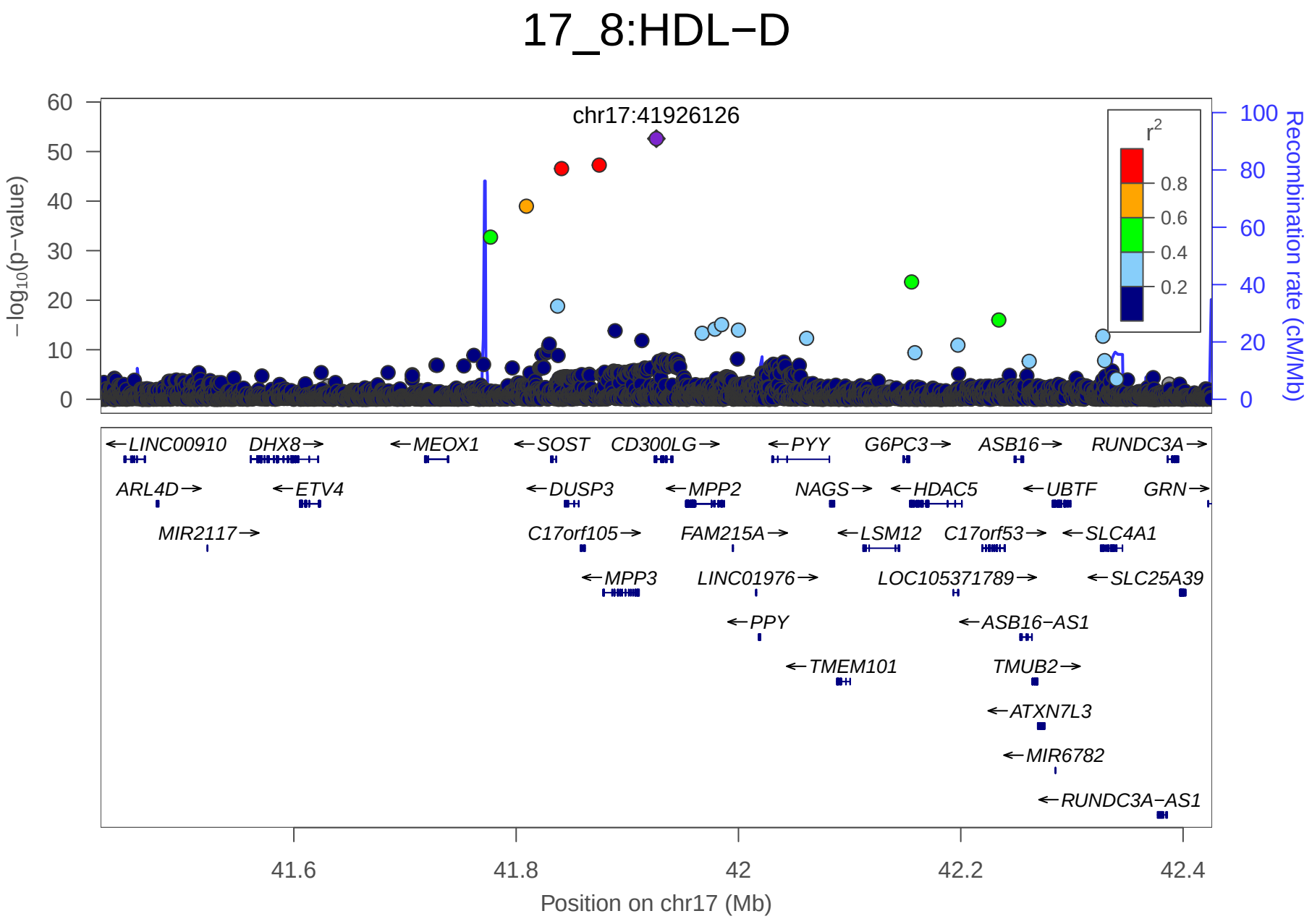

chr17:6595398
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
AIPL1
KIAA0753
XAF1
ALOX12P2
ALOX12
ASGR2
PIMREG
TXNDC17
FBXO39
ALOX12−AS1
ASGR1
PITPNM3
MED31
TEKT1
RNASEK
DLG4
C17orf100
RNASEK−C17orf49
MIR4520−1
C17orf49
MIR4520−2
MIR497HG
ALOX15P1
MIR195
SLC13A5
MIR497
BCL6B
SLC16A13
2 genes omitted
Position on chr17 (Mb)


17_4:LDL−D
chr17:16842991
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LRRC75A−AS1
CCDC144A
TNFRSF13B
MPRIP
COPS3
SNORD49A
ZNF624
USP32P1
PLD6
NT5M
SNORD65
FAM106CP
FLCN
LRRC75A
KRT16P2
ZNF287
Position on chr17 (Mb)

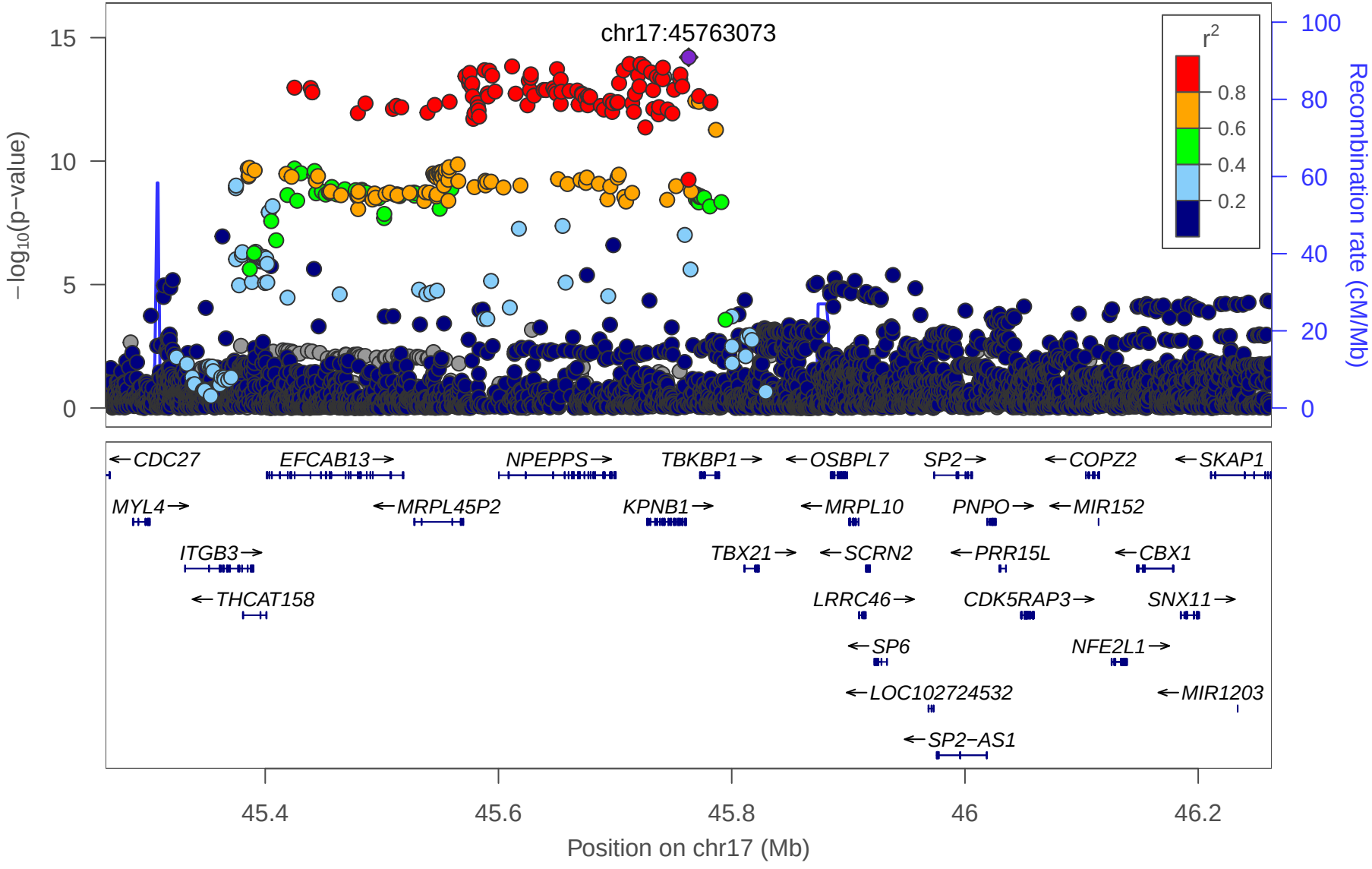

17_5:Crea
chr17:19474875
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LOC79999
EPN2
RNF112
SLC47A1
SLC47A2
ULK2
AKAP10
LOC388436
EPN2−AS1
SNORA59A
ALDH3A1
SPECC1
GRAPL
EPN2−IT1
MAPK7
SNORA59B
B9D1
ALDH3A2
MIR1180
MFAP4
Position on chr17 (Mb)

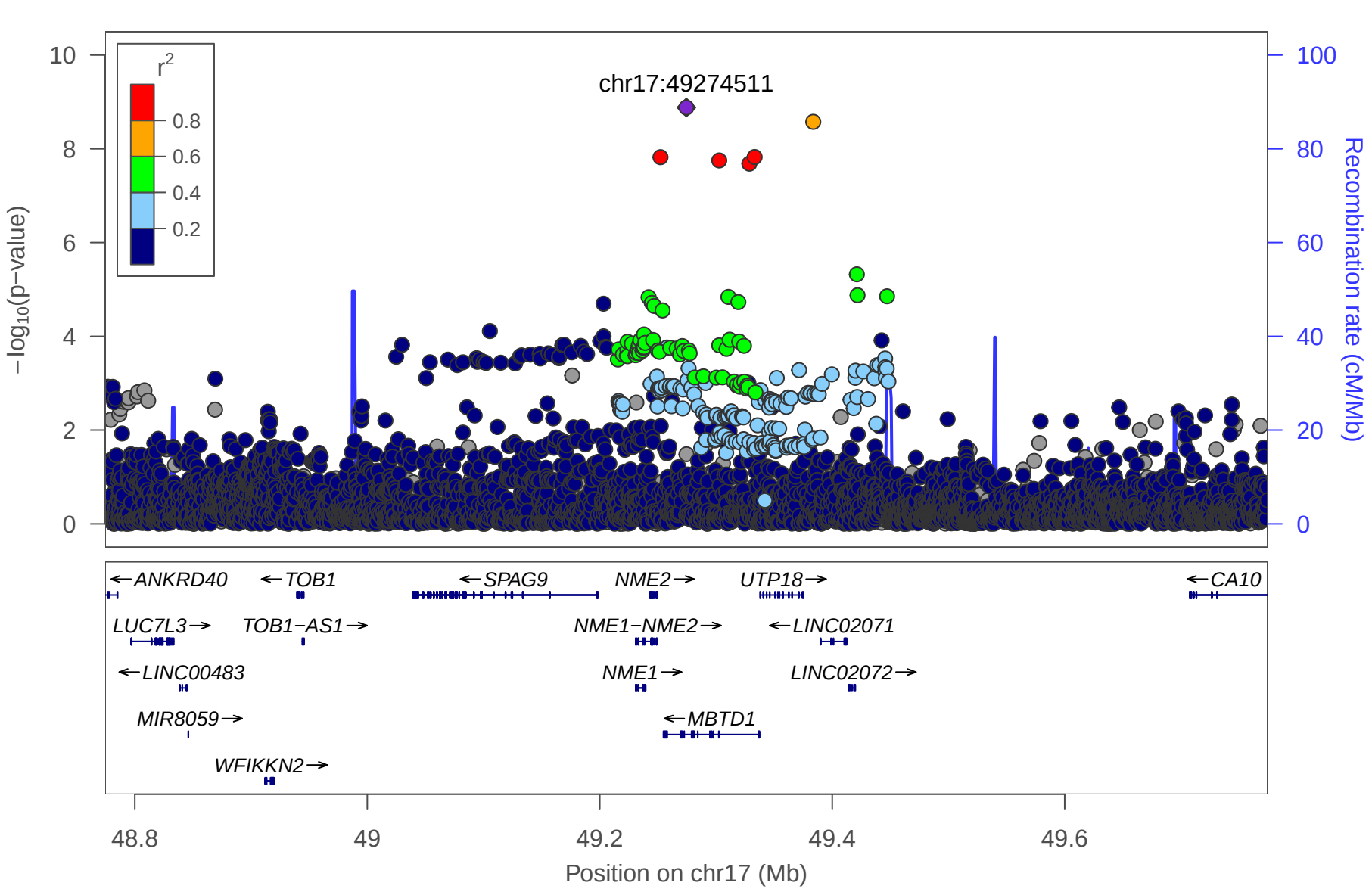

17_6:S−HDL−PL_percent
chr17:26694861
−log10(p−value)
Recombination rate (cM/Mb)
r2
0.8
0.6
0.4
0.2
LYRM9
NLK
PPY2P
POLDIP2
SLC13A2
SPAG5
PROCA1
ERAL1
PYY2
TMEM97
FOXN1
SDF2
NEK8
KRT18P55
UNC119
SUPT6H
FAM222B
IFT20
PIGS
RAB34
MIR144
TNFAIP1
ALDOC
RPL23A
TMEM199
SPAG5−AS1
TLCD1
MIR4723
SGK494
TRAF4
SEBOX
KIAA0100
MIR451A
VTN
SNORD42B
SARM1
SNORD4A
5 genes omitted
Position on chr17 (Mb)

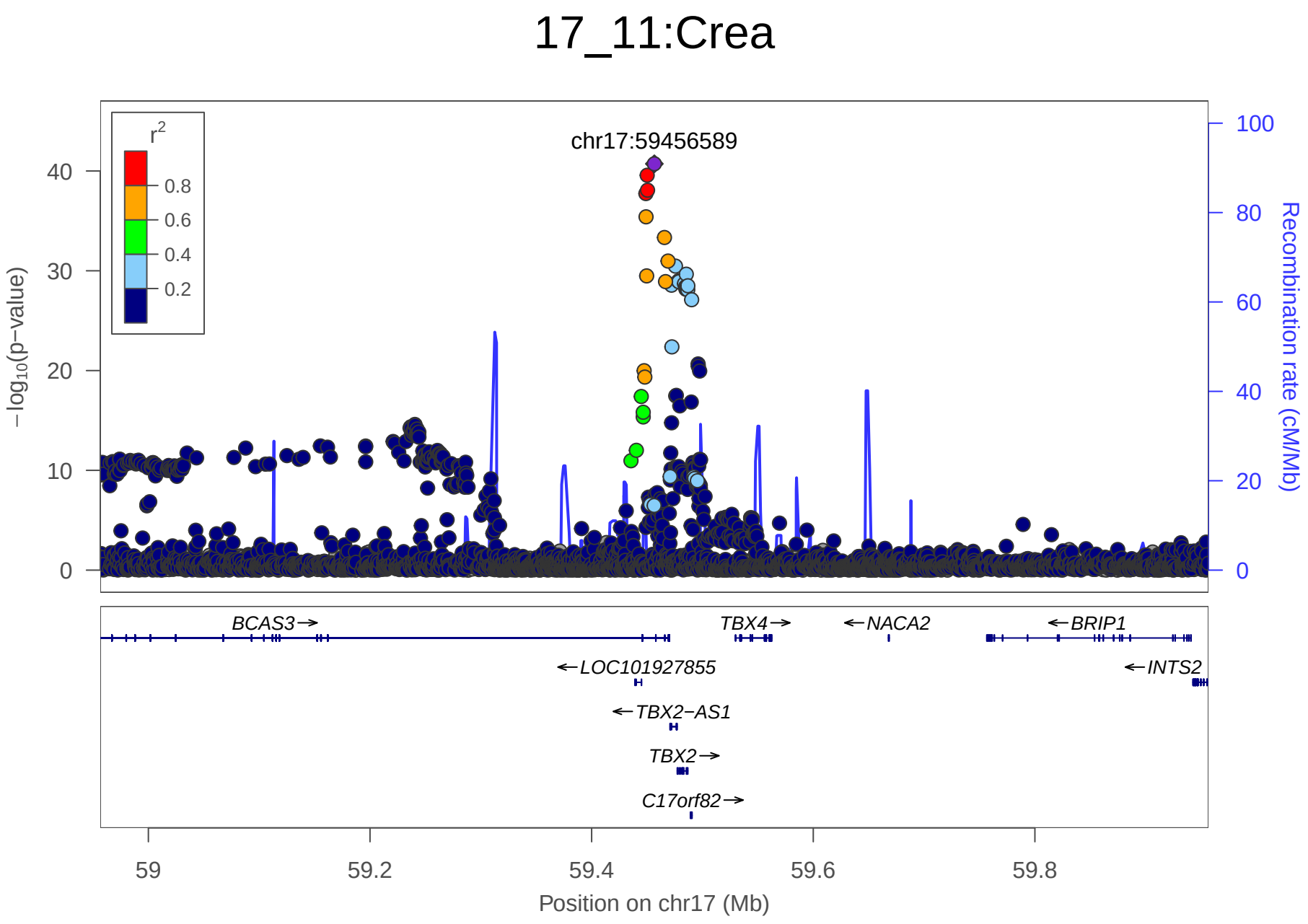

17_7:Crea
chr17:37406139
−log10(p−value)
Recombination rate (cM/Mb)
PSMB3
LASP1
LINC02079
ARL5C
FBXL20
CDK12
NEUROD2
GRB7
PIP4K2B
MIR6779
LOC100131347
RPL19
MED1
PPP1R1B
CWC25
LINC00672
PLXDC1
STAC2
STARD3
MIR4727
FBXO47
CACNB1
TCAP
C17orf98
LRRC37A11P
PNMT
RPL23
PGAP3
SNORA21B
ERBB2
SNORA21
MIR4728
MIEN1
Position on chr17 (Mb)

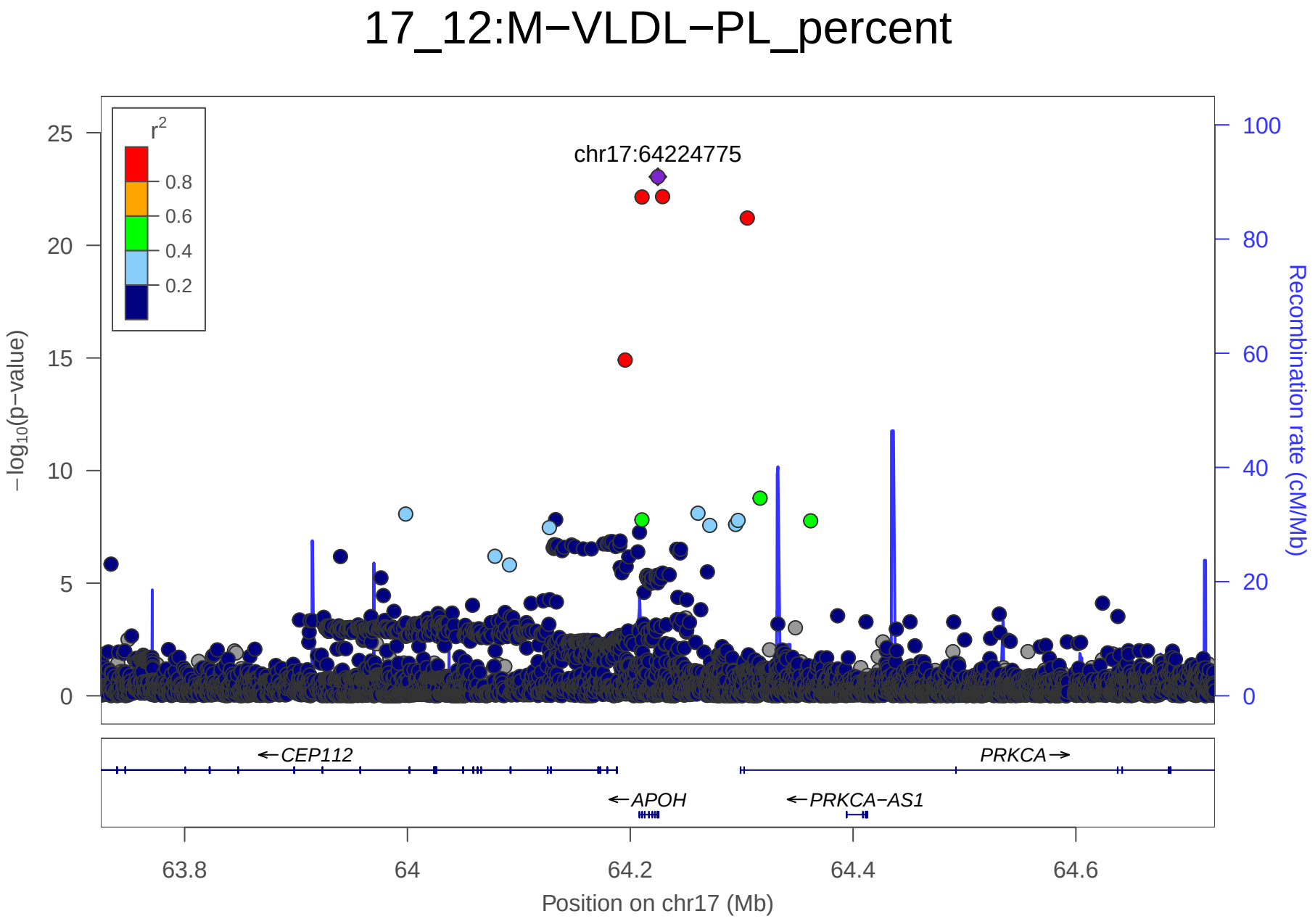

17_8:HDL−D
chr17:41926126
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
60
50
40
30
20
10
0
100
80
60
40
20
0
←LINC00910
DHX8→
←MEOX1
←SOST
CD300LG→
←PYY
G6PC3→
ASB16→
RUNDC3A→
ARL4D→
←ETV4
←DUSP3
←MPP2
NAGS→
←HDAC5
←UBTF
GRN→
MIR2117→
C17orf105→
FAM215A→
←LSM12
C17orf53→
←SLC4A1
←MPP3
LINC01976→
LOC105371789→
←SLC25A39
←PPY
←ASB16−AS1
←TMEM101
TMUB2→
←ATXN7L3
←MIR6782
←RUNDC3A−AS1
41.6
41.8
42
42.2
42.4
Position on chr17 (Mb)

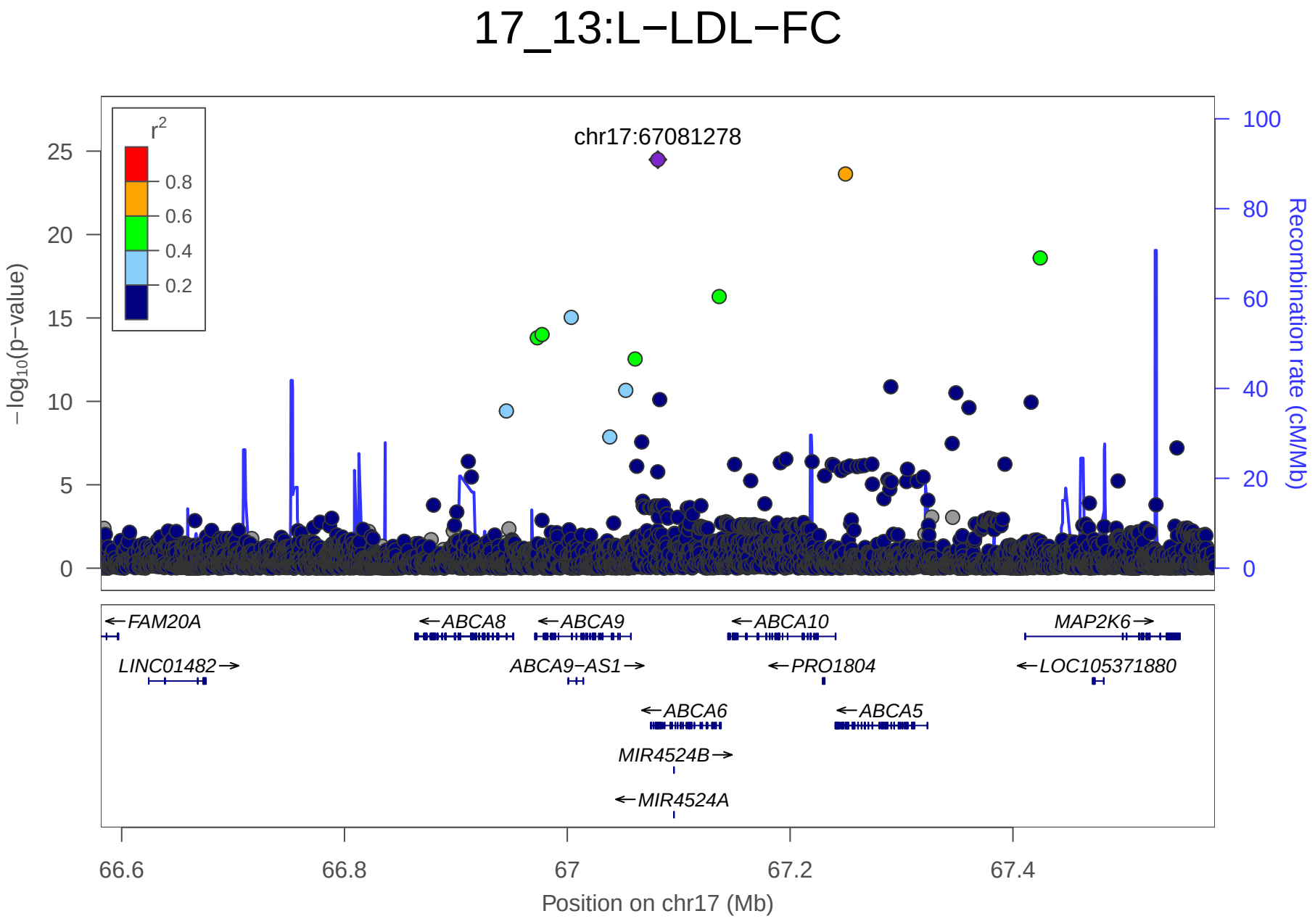
17_9:L−LDL−FC


chr17:45763073
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
CDC27
EFCAB13
NPEPPS
TBKBP1
OSBPL7
SP2
COPZ2
SKAP1
MYL4
MRPL45P2
KPNB1
MRPL10
PNPO
MIR152
ITGB3
TBX21
SCRN2
PRR15L
CBX1
THCAT158
LRRC46
CDK5RAP3
SNX11
SP6
NFE2L1
LOC102724532
MIR1203
SP2−AS1
45.4
45.6
45.8
46
46.2
Position on chr17 (Mb)

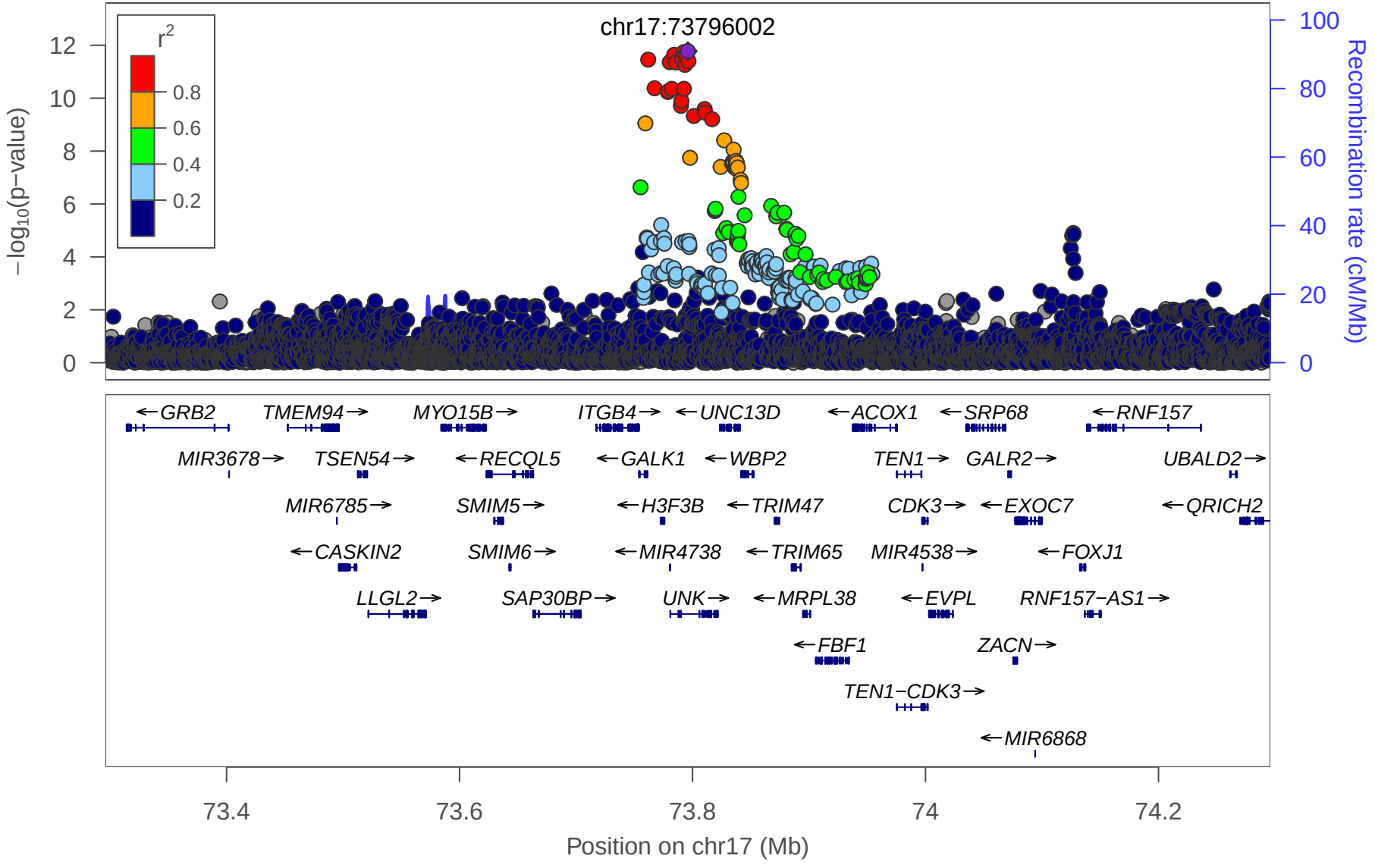

17_10:S−LDL−FC_percent
chr17:49274511
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ANKRD40
TOB1
SPAG9
NME2
UTP18
CA10
LUC7L3
TOB1−AS1
NME1−NME2
LINC02071
LINC00483
NME1
LINC02072
MIR8059
MBTD1
WFIKKN2
48.8
49
49.2
49.4
49.6
Position on chr17 (Mb)

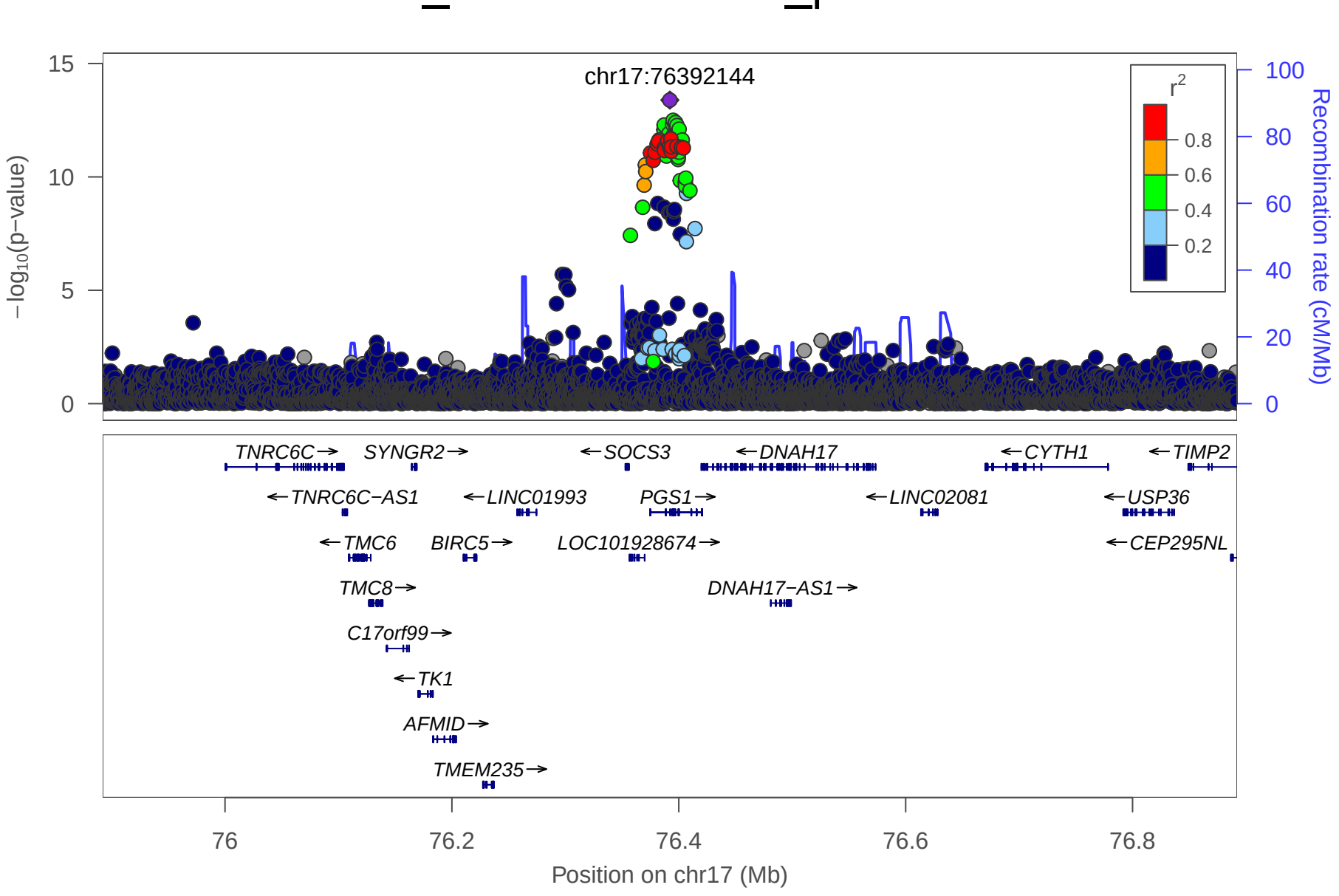

17_11:Crea
chr17:59456589
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
BCAS3
TBX4
NACA2
BRIP1
LOC101927855
INTS2
TBX2−AS1
TBX2
C17orf82
Position on chr17 (Mb)

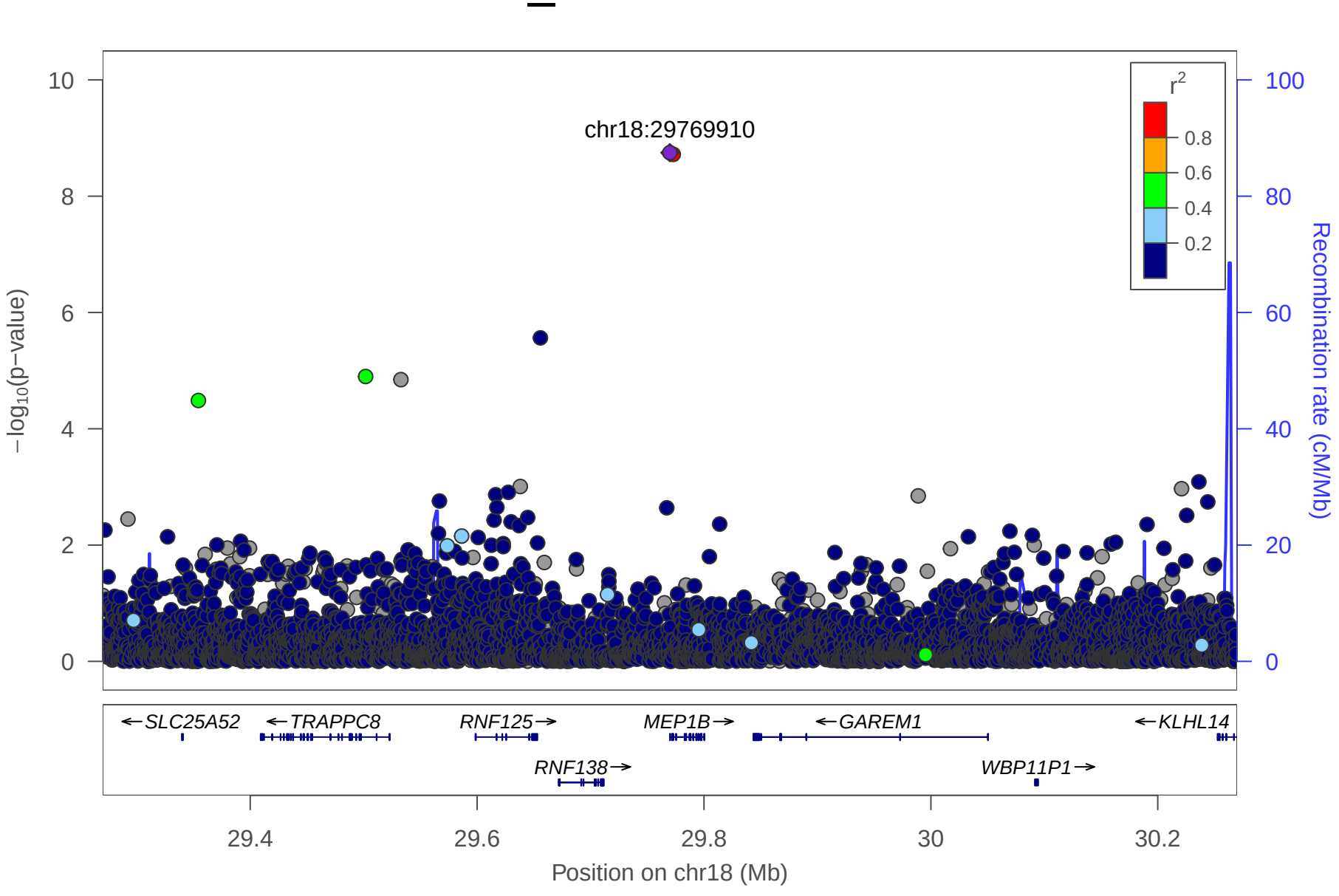

17_12:M−VLDL−PL_percent
chr17:64224775
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
25
20
15
10
5
0
100
80
60
40
20
0
←CEP112
PRKCA→
←APOH
←PRKCA−AS1
63.8
64
64.2
64.4
64.6
Position on chr17 (Mb)

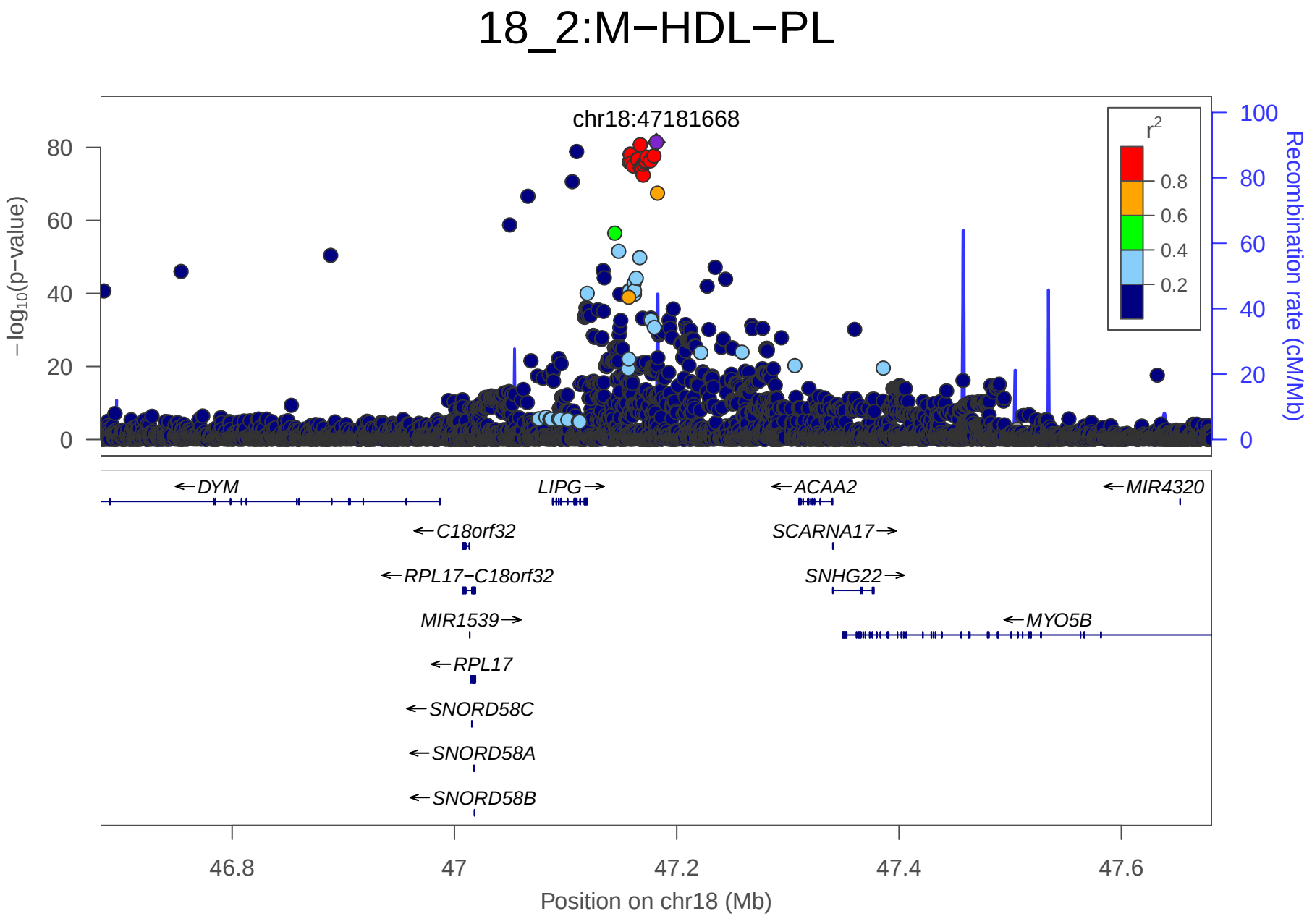

17_13:L−LDL−FC
chr17:67081278
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FAM20A
ABCA8
ABCA9
ABCA10
MAP2K6
LINC01482
ABCA9−AS1
PRO1804
LOC105371880
ABCA6
ABCA5
MIR4524B
MIR4524A
Position on chr17 (Mb)

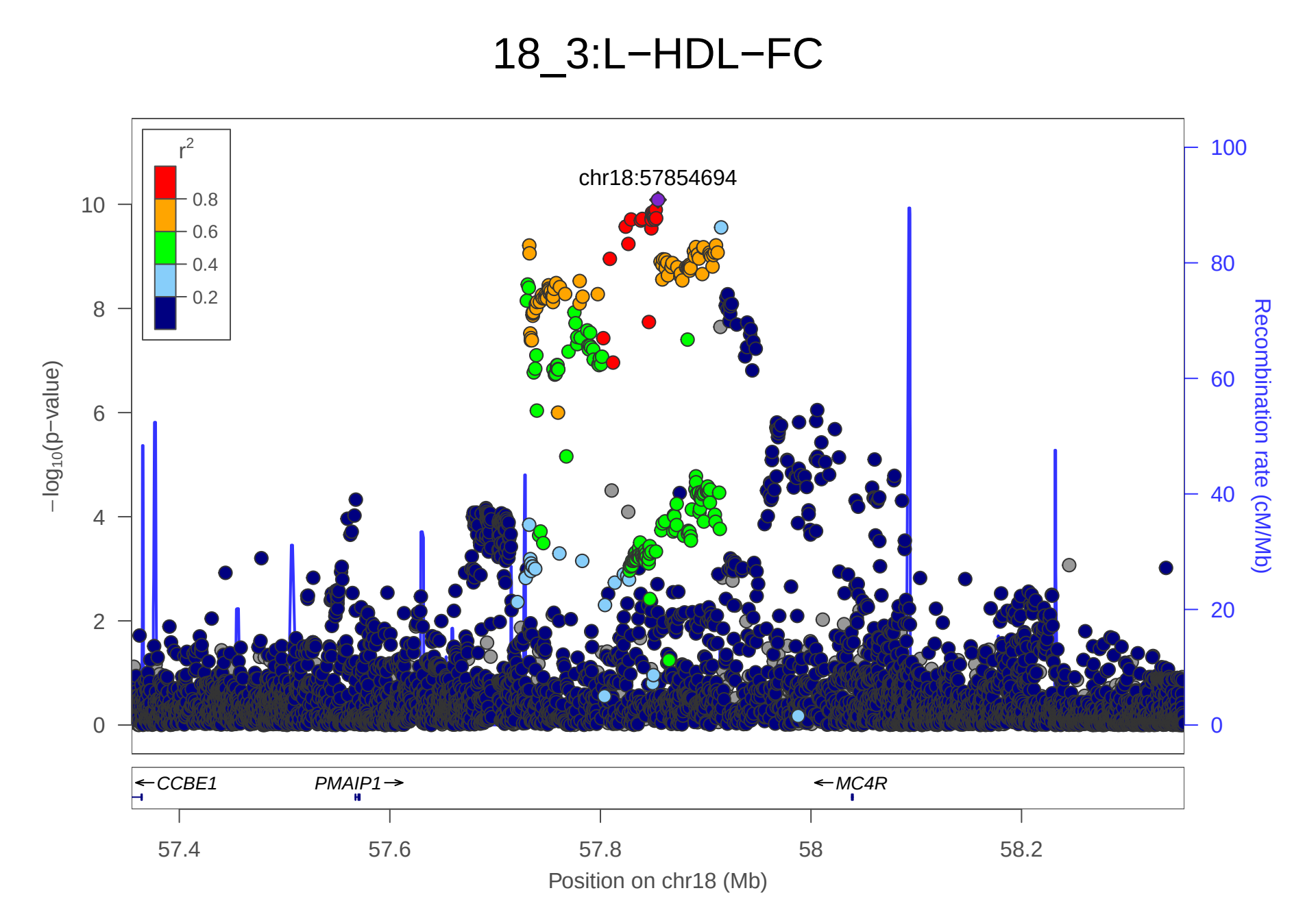
17_14:ApoBbyApoA1

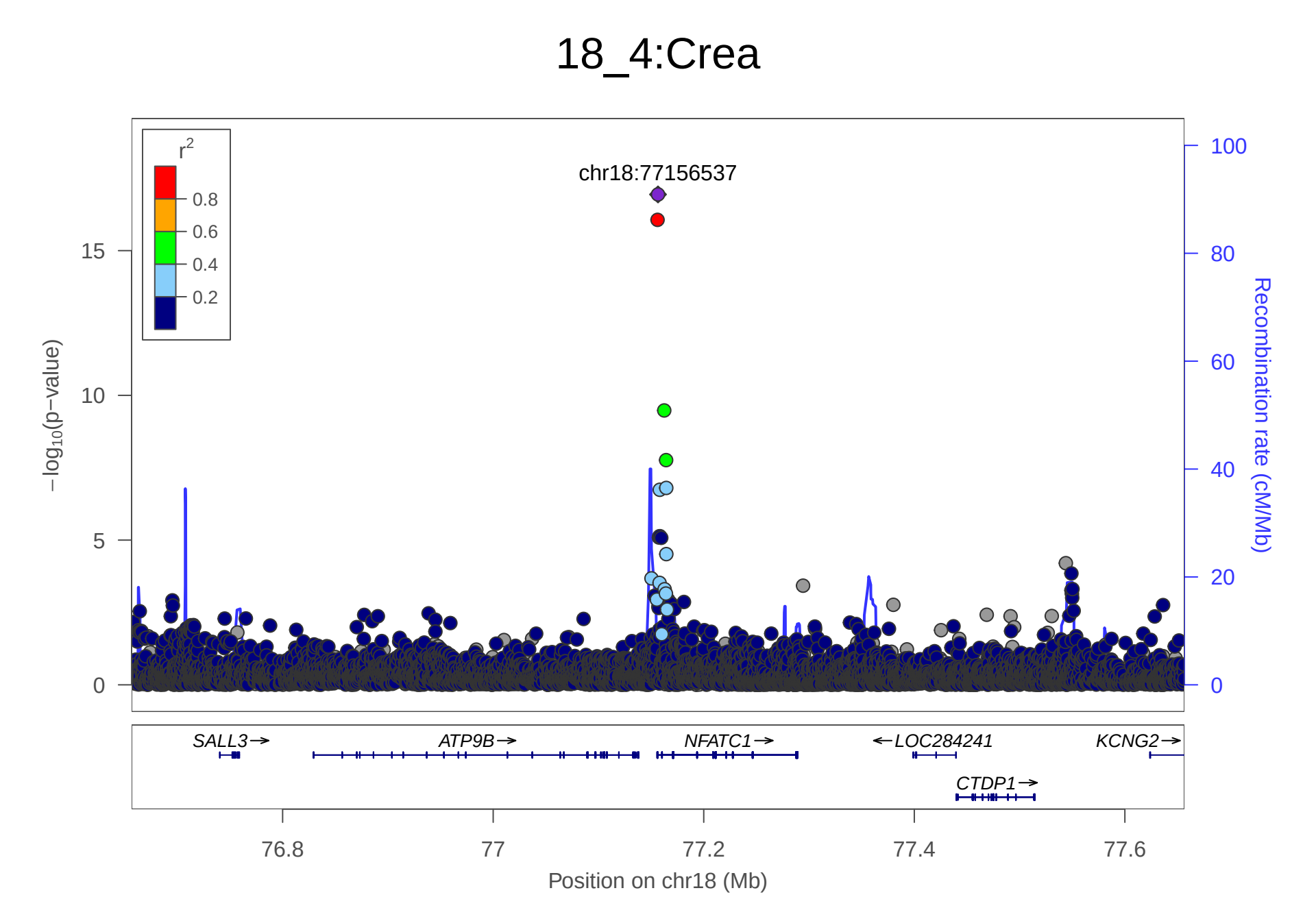


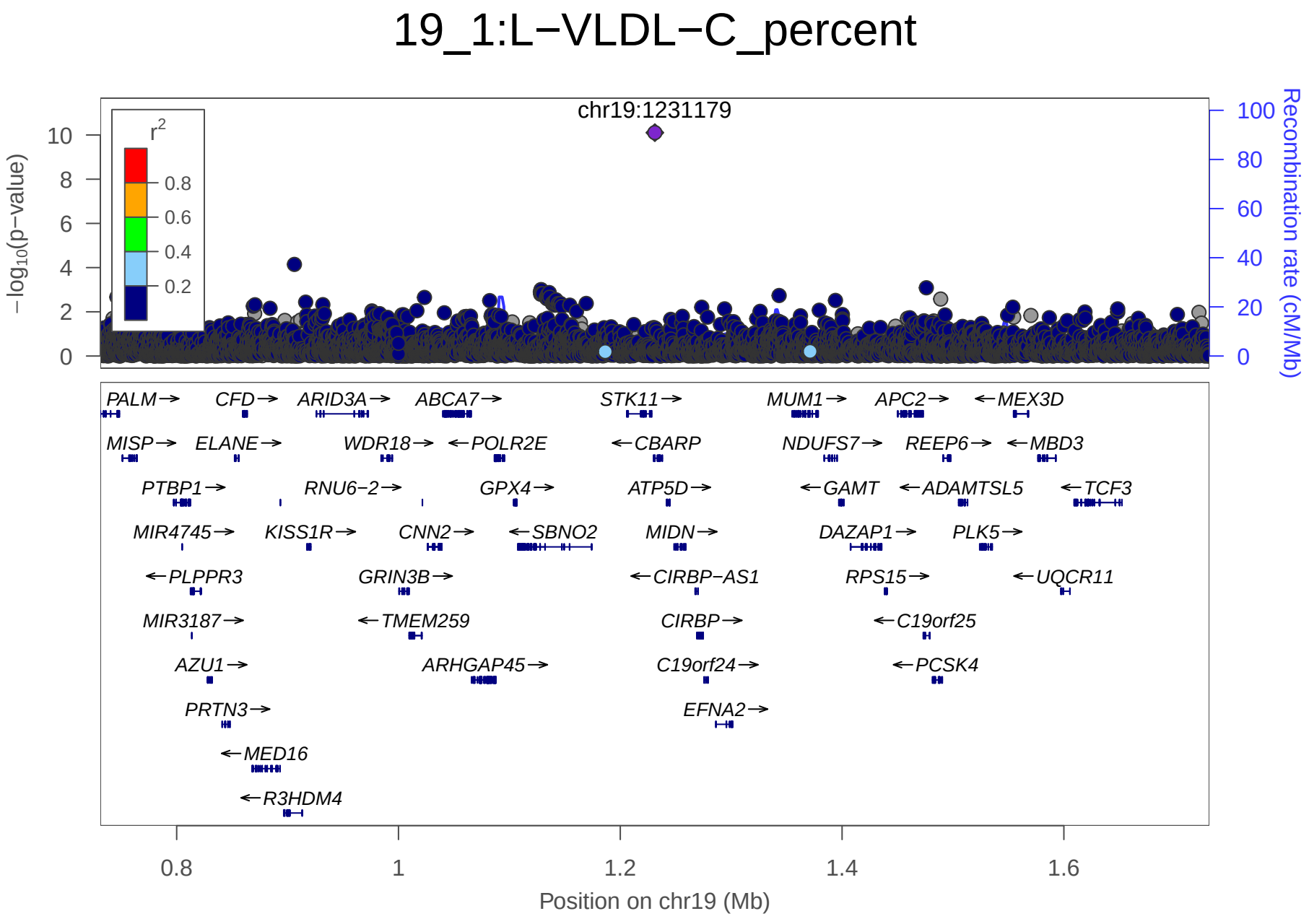

17_15:S−VLDL−CE_percent
chr17:76392144
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
TNRC6C→
SYNGR2→
←SOCS3
←DNAH17
←CYTH1
←TIMP2
←TNRC6C−AS1
←LINC01993
PGS1→
←LINC02081
←USP36
←TMC6
BIRC5→
LOC101928674→
←CEP295NL
TMC8→
DNAH17−AS1→
C17orf99→
←TK1
AFMID→
TMEM235→
76
76.2
76.4
76.6
76.8
Position on chr17 (Mb)

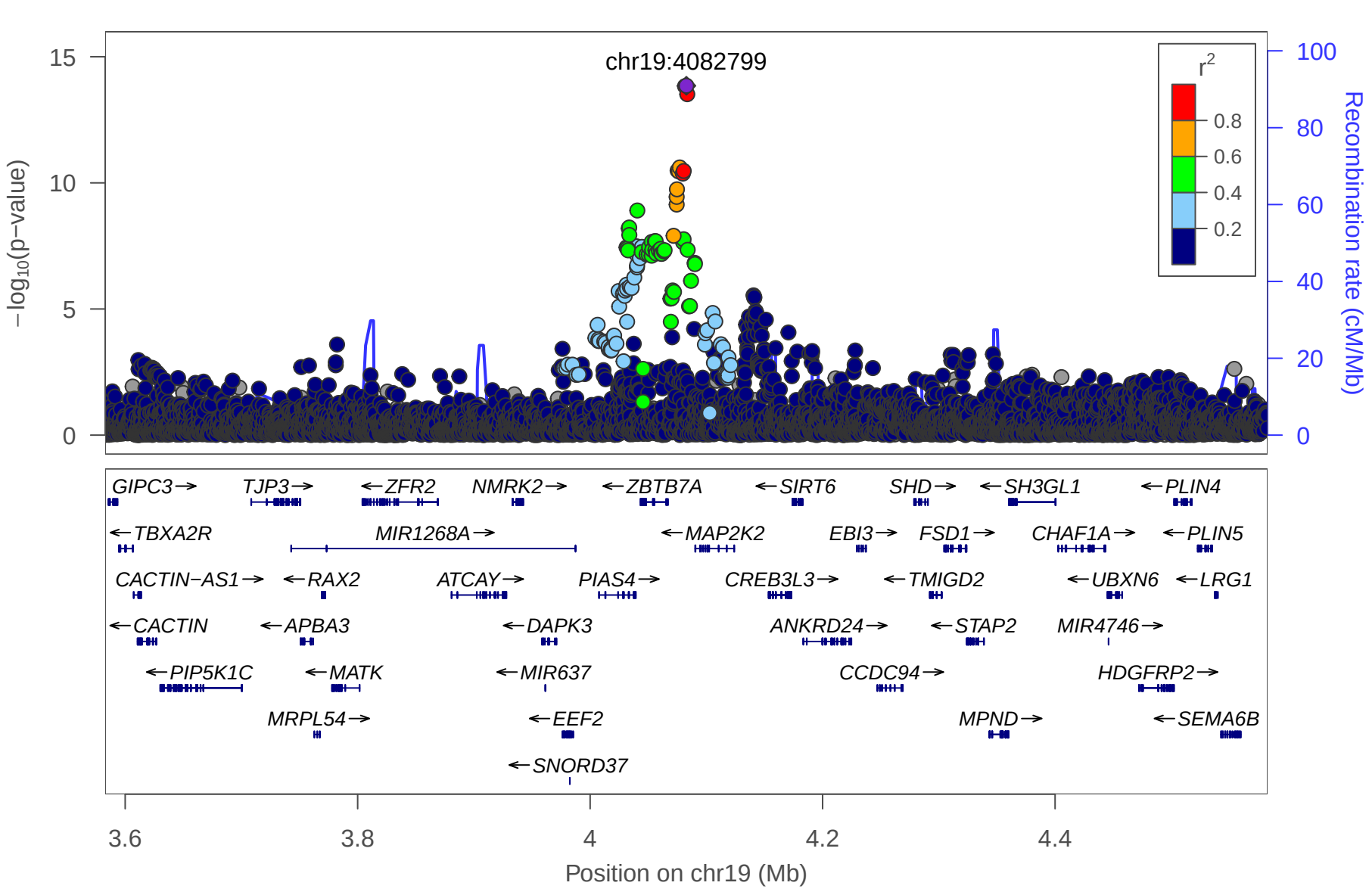

18_1:S−VLDL−TG
chr18:29769910
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SLC25A52
TRAPPC8
RNF125
MEP1B
GAREM1
KLHL14
RNF138
WBP11P1
Position on chr18 (Mb)


18_2:M−HDL−PL
chr18:47181668
−log10(p−value)
Recombination rate (cM/Mb)
r2
0.8
0.6
0.4
0.2
DYM
LIPG
ACAA2
MIR4320
C18orf32
SCARNA17
RPL17−C18orf32
SNHG22
MIR1539
MYO5B
RPL17
SNORD58C
SNORD58A
SNORD58B
46.8
47
47.2
47.4
47.6
Position on chr18 (Mb)

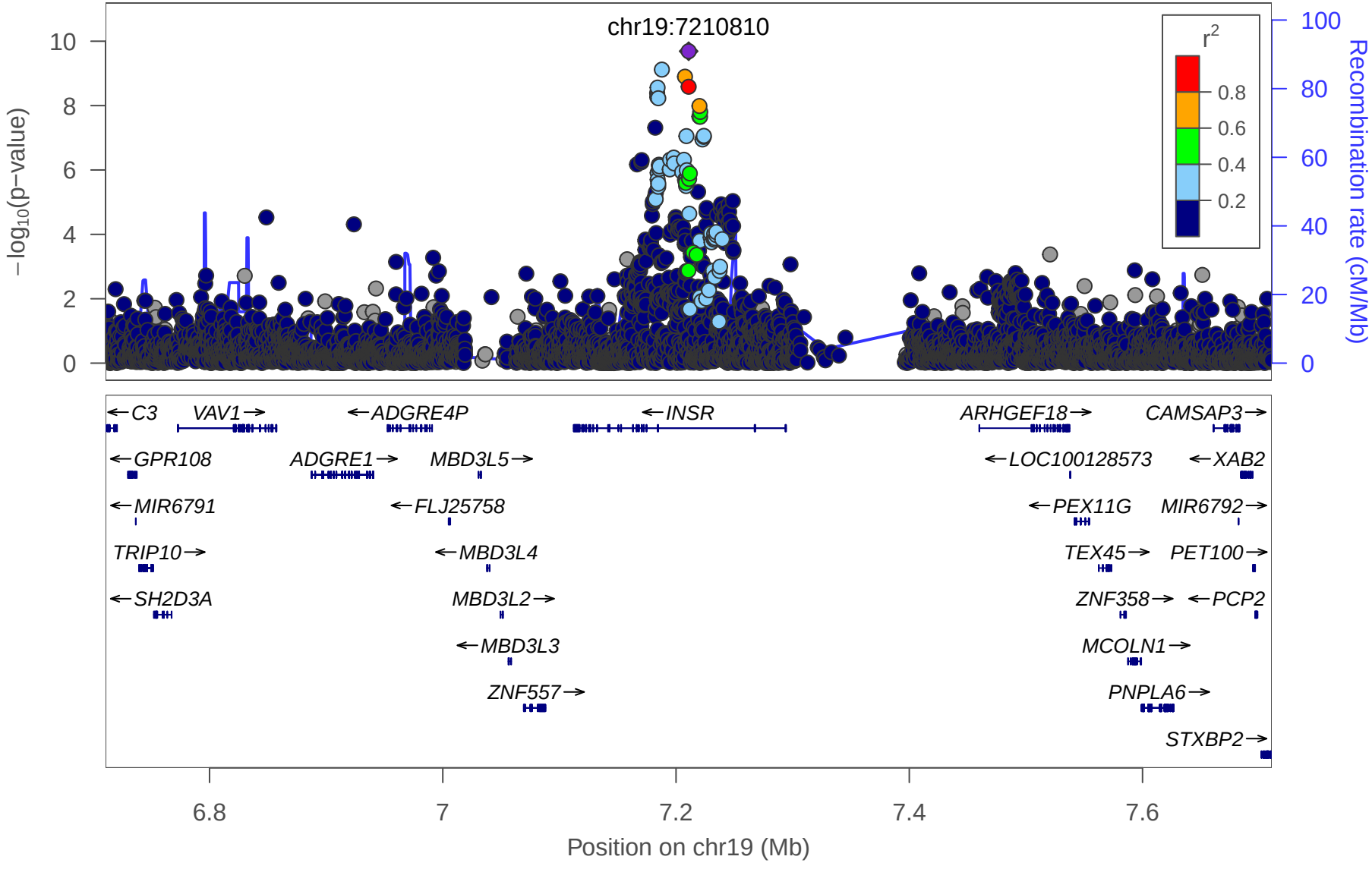

18_3:L−HDL−FC
chr18:57854694
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CCBE1
PMAIP1
MC4R
Position on chr18 (Mb)


18_4:Crea
r2
0.8
0.6
0.4
0.2
chr18:77156537
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
SALL3→
ATP9B→
NFATC1→
←LOC284241
KCNG2→
CTDP1→
76.8
77
77.2
77.4
77.6
Position on chr18 (Mb)

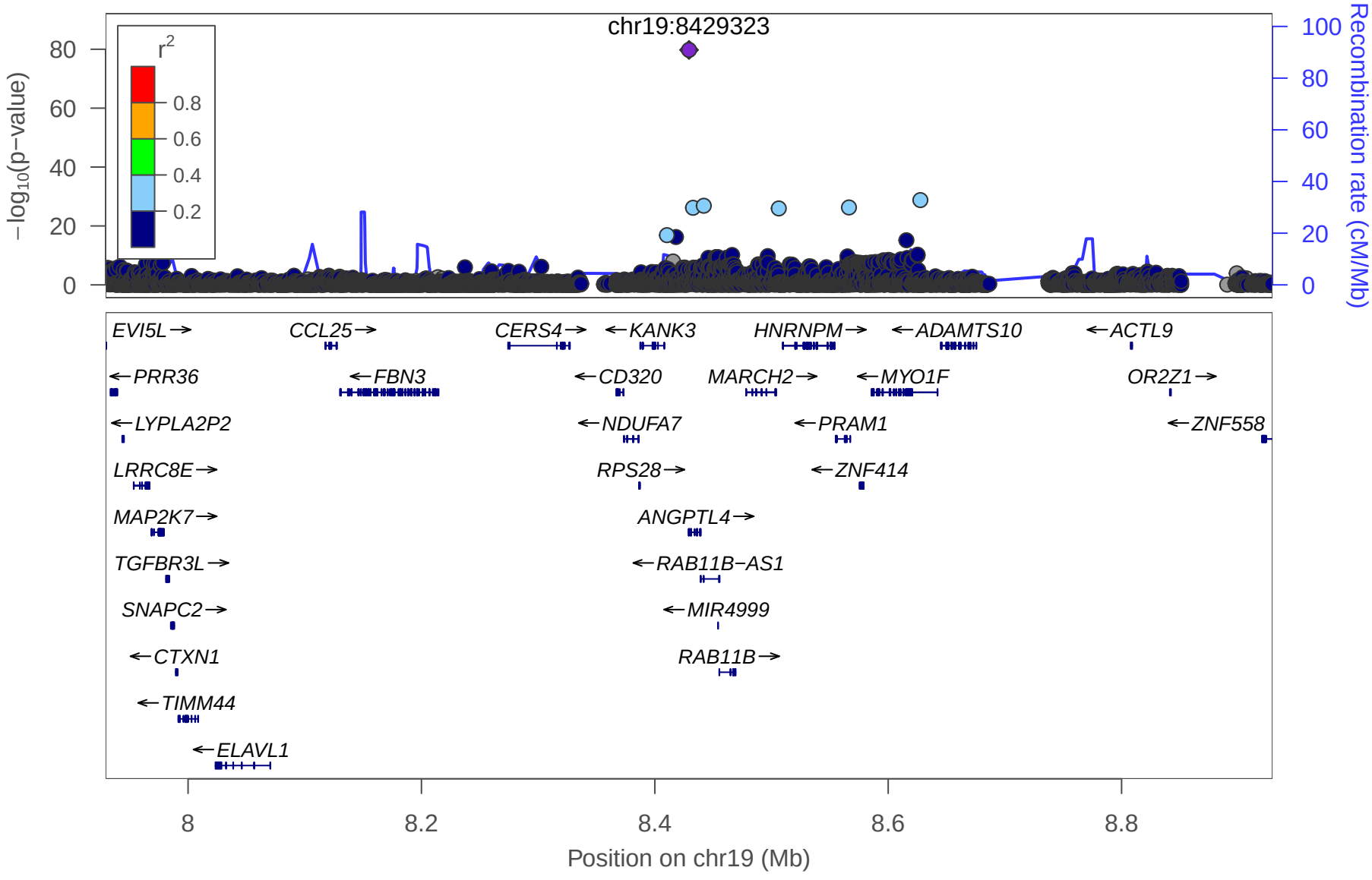

19_1:L−VLDL−C_percent
chr19:1231179
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PALM→ CFD→ ARID3A→ ABCA7→ STK11→ MUM1→ APC2→ ←MEX3D
MISP→ ELANE→ WDR18→ ←POLR2E ←CBARP NDUFS7→ REEP6→ ←MBD3
PTBP1→ RNU6−2→ GPX4→ ATP5D→ ←GAMT ←ADAMTSL5 ←TCF3
MIR4745→ KISS1R→ CNN2→ ←SBNO2 MIDN→ DAZAP1→ PLK5→
←PLPPR3 GRIN3B→ ←CIRBP−AS1 RPS15→ ←UQCR11
MIR3187→ ←TMEM259 CIRBP→ ←C19orf25
AZU1→ ARHGAP45→ C19orf24→ ←PCSK4
PRTN3→ EFNA2→
←MED16
←R3HDM4
Position on chr19 (Mb)


19_2:LDL−D
chr19:4082799
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
GIPC3→
TJP3→
←ZFR2
NMRK2→
←ZBTB7A
←SIRT6
SHD→
←SH3GL1
←PLIN4
←TBXA2R
MIR1268A→
←MAP2K2
EBI3→
FSD1→
CHAF1A→
←PLIN5
CACTIN−AS1→
←RAX2
ATCAY→
PIAS4→
CREB3L3→
←TMIGD2
←UBXN6
←LRG1
←CACTIN
←APBA3
←DAPK3
ANKRD24→
←STAP2
MIR4746→
←PIP5K1C
←MATK
←MIR637
CCDC94→
HDGFRP2→
MRPL54→
←EEF2
MPND→
←SEMA6B
←SNORD37
3.6
3.8
4
4.2
4.4
Position on chr19 (Mb)

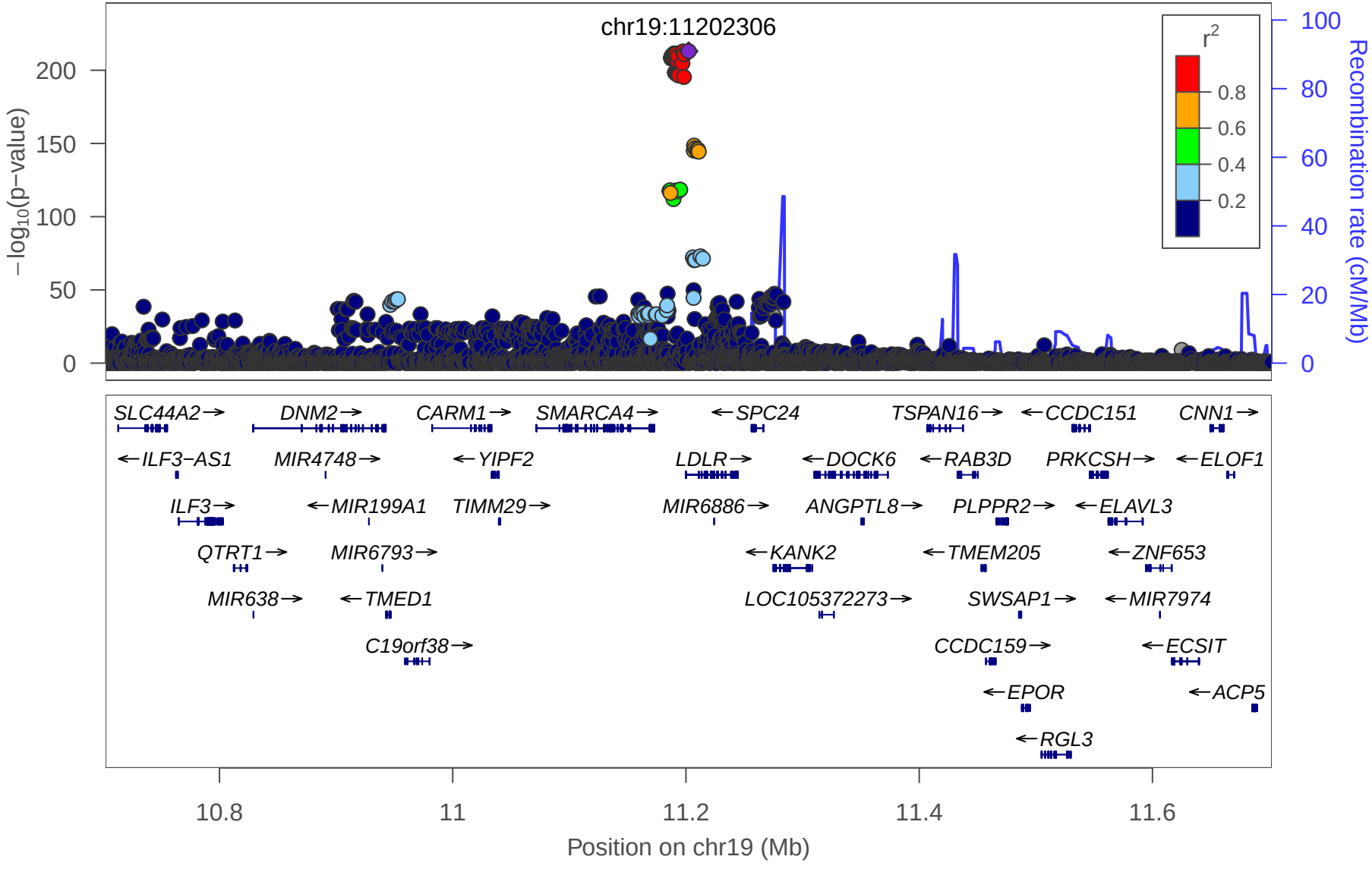
19_3:Ile


chr19:7210810
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
C3
VAV1
ADGRE4P
INSR
ARHGEF18
CAMSAP3
GPR108
ADGRE1
MBD3L5
LOC100128573
XAB2
MIR6791
FLJ25758
PEX11G
MIR6792
TRIP10
MBD3L4
TEX45
PET100
SH2D3A
MBD3L2
ZNF358
PCP2
MBD3L3
MCOLN1
ZNF557
PNPLA6
STXBP2
Position on chr19 (Mb)

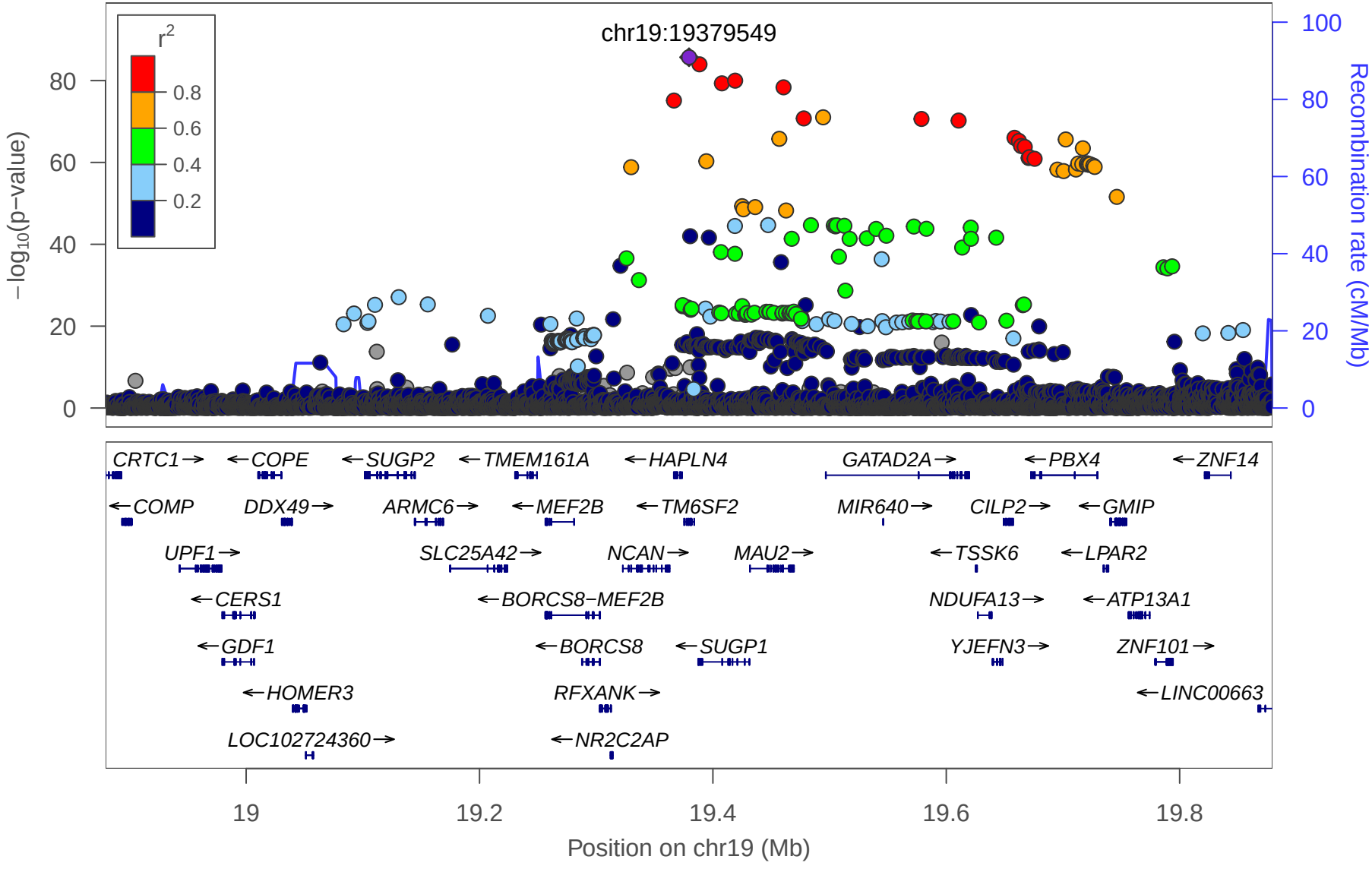
19_4:S−VLDL−TG

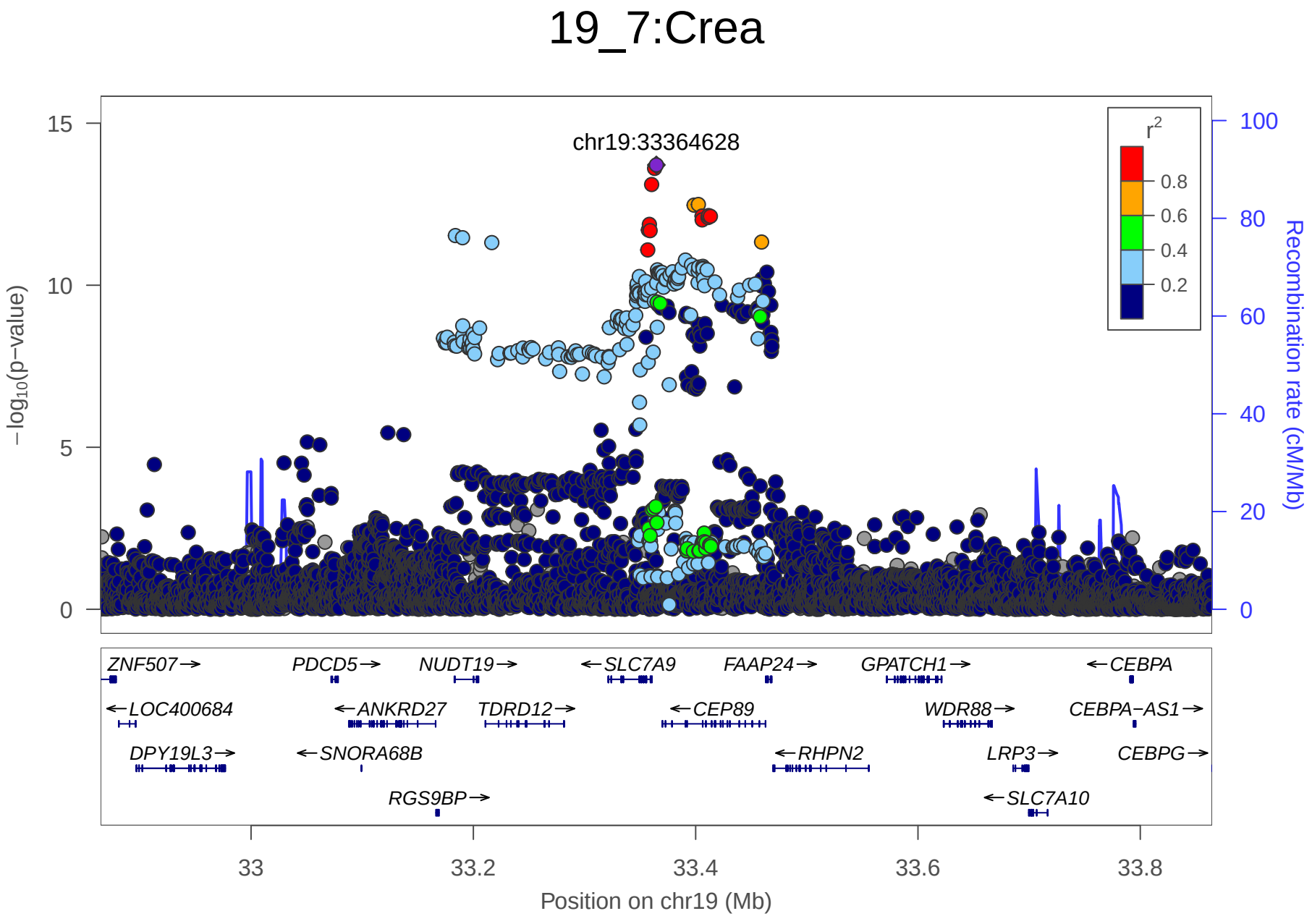

chr19:8429323
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
EVI5L→
CCL25→
CERS4→
←KANK3
HNRNPM→
←ADAMTS10
←ACTL9
←PRR36
←FBN3
←CD320
MARCH2→
←MYO1F
OR2Z1→
←LYPLA2P2
←NDUFA7
←PRAM1
←ZNF558
LRRC8E→
RPS28→
←ZNF414
MAP2K7→
ANGPTL4→
TGFBR3L→
←RAB11B−AS1
SNAPC2→
←MIR4999
←CTXN1
RAB11B→
←TIMM44
←ELAVL1
Position on chr19 (Mb)

19_5:L−LDL−C

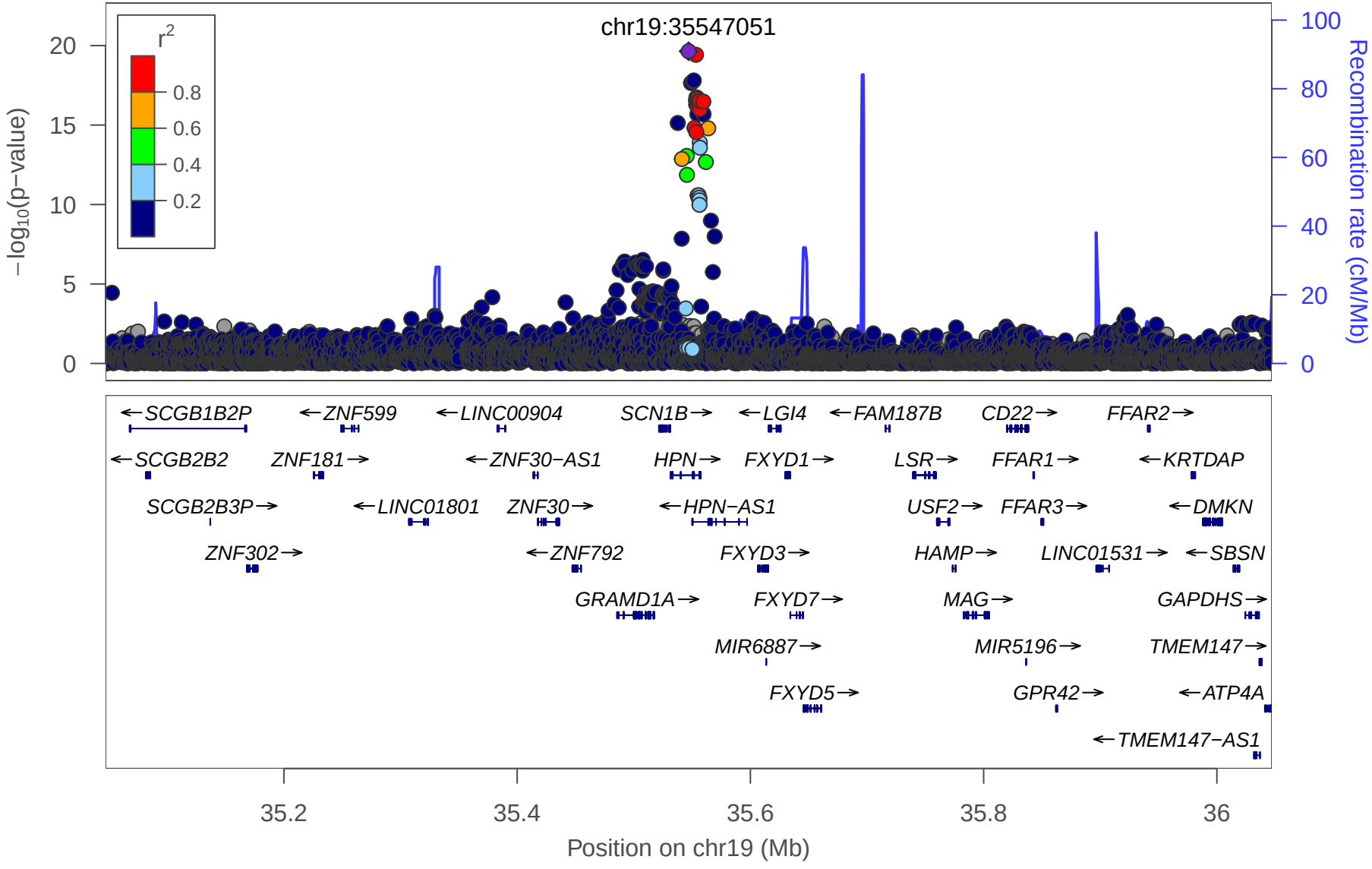

chr19:11202306
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SLC44A2→
DNM2→
CARM1→
SMARCA4→
←SPC24
TSPAN16→
←CCDC151
CNN1→
←ILF3−AS1
MIR4748→
←YIPF2
LDLR→
←DOCK6
←RAB3D
PRKCSH→
←ELOF1
ILF3→
←MIR199A1
TIMM29→
MIR6886→
ANGPTL8→
PLPPR2→
←ELAVL3
QTRT1→
MIR6793→
←KANK2
←TMEM205
←ZNF653
MIR638→
←TMED1
LOC105372273→
SWSAP1→
←MIR7974
C19orf38→
CCDC159→
←ECSIT
←EPOR
←ACP5
←RGL3
Position on chr19 (Mb)

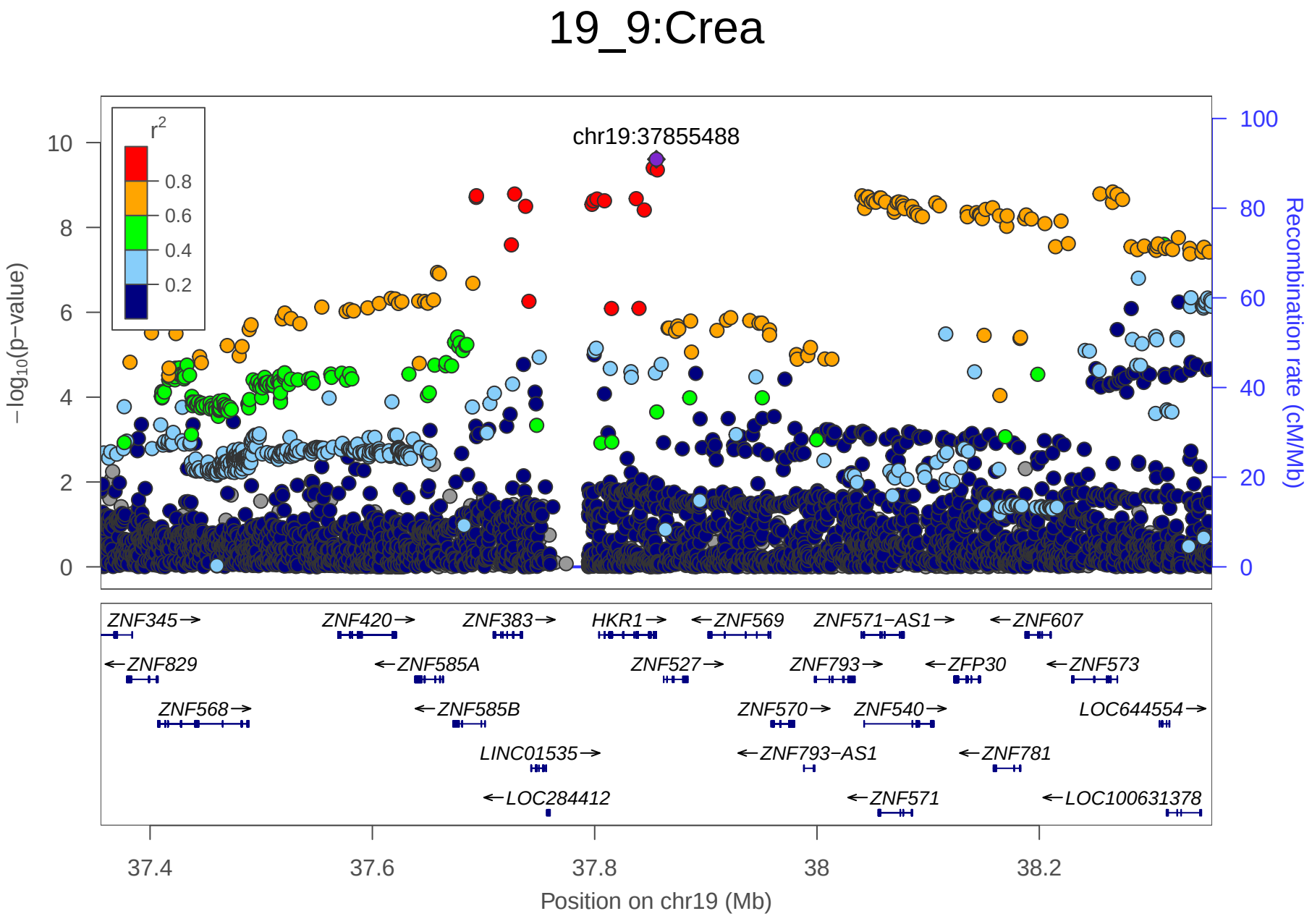
19_6:M−VLDL−CE


chr19:19379549
r²
0.8
0.6
0.4
0.2
−log₁₀(p−value)
Recombination rate (cM/Mb)
CRTC1→
←COPE
←SUGP2
←TMEM161A
←HAPLN4
GATAD2A→
←PBX4
←ZNF14
←COMP
DDX49→
ARMC6→
←MEF2B
←TM6SF2
MIR640→
CILP2→
←GMIP
UPF1→
SLC25A42→
NCAN→
MAU2→
←TSSK6
←LPAR2
←CERS1
←BORCS8−MEF2B
NDUFA13→
←ATP13A1
←GDF1
←BORCS8
←SUGP1
YJEFN3→
ZNF101→
←HOMER3
RFXANK→
←LINC00663
LOC102724360→
←NR2C2AP
Position on chr19 (Mb)

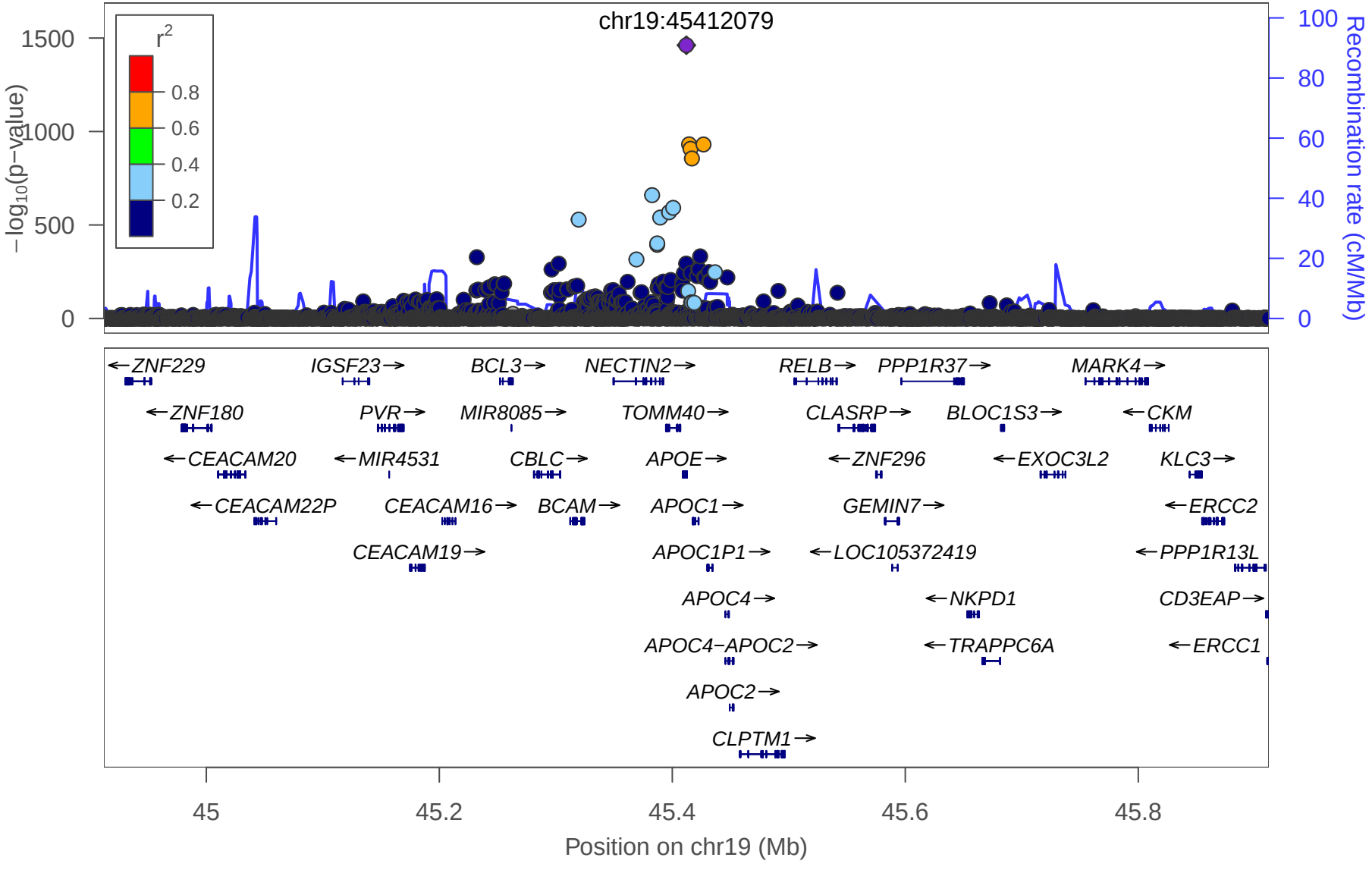

19_7:Crea
chr19:33364628
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
ZNF507→
PDCD5→
NUDT19→
←SLC7A9
FAAP24→
GPATCH1→
←CEBPA
←LOC400684
←ANKRD27
TDRD12→
←CEP89
WDR88→
CEBPA−AS1→
DPY19L3→
←SNORA68B
←RHPN2
LRP3→
CEBPG→
RGS9BP→
←SLC7A10
33
33.2
33.4
33.6
33.8
Position on chr19 (Mb)

19_8:Alb

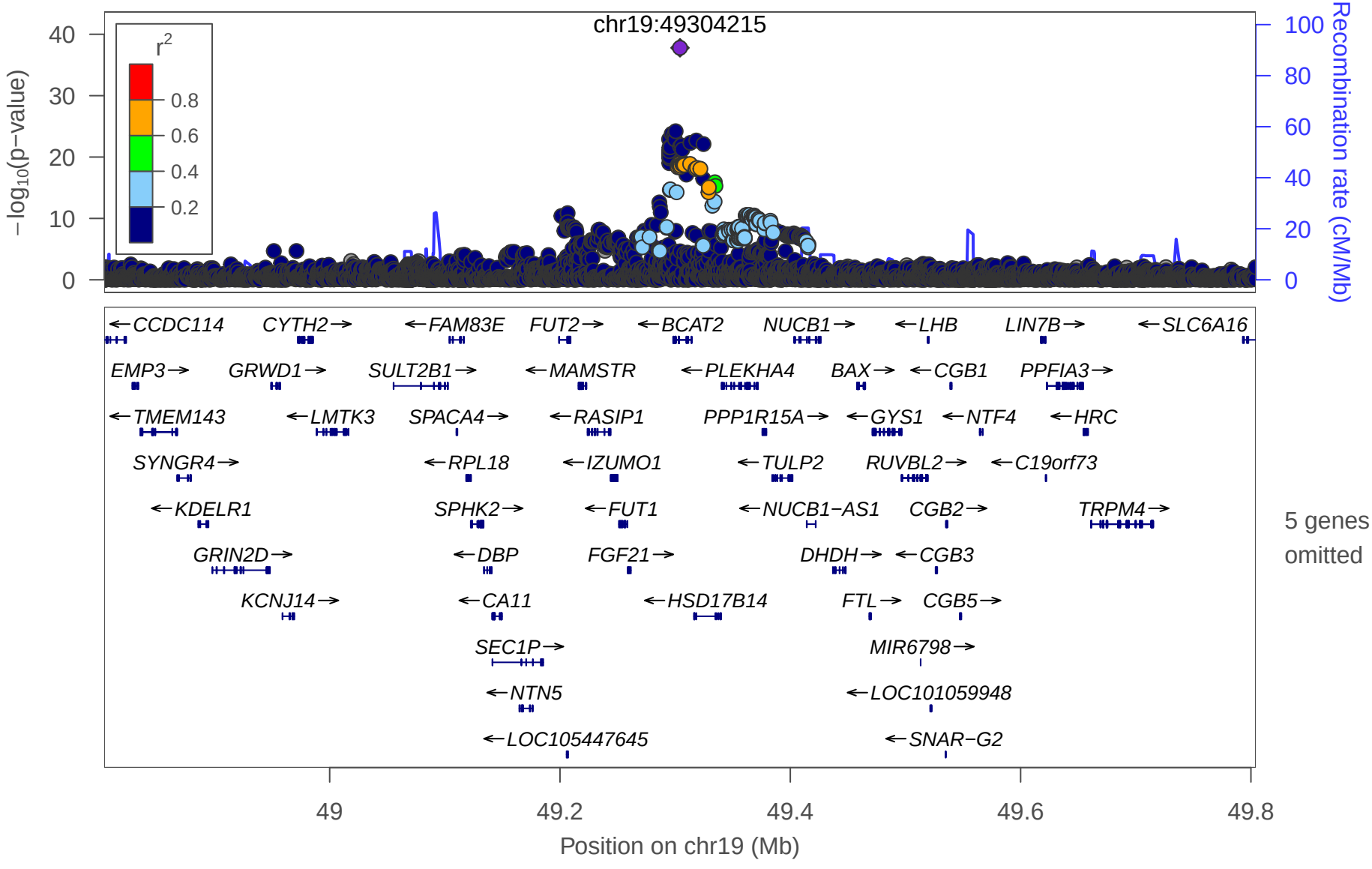

chr19:35547051
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SCGB1B2P
ZNF599
LINC00904
SCN1B
LGI4
FAM187B
CD22
FFAR2
SCGB2B2
ZNF181
ZNF30−AS1
HPN
FXYD1
LSR
FFAR1
KRTDAP
SCGB2B3P
LINC01801
ZNF30
HPN−AS1
USF2
FFAR3
DMKN
ZNF302
ZNF792
FXYD3
HAMP
LINC01531
SBSN
GRAMD1A
FXYD7
MAG
GAPDHS
MIR6887
MIR5196
TMEM147
FXYD5
GPR42
ATP4A
TMEM147−AS1
35.2
35.4
35.6
35.8
36
Position on chr19 (Mb)

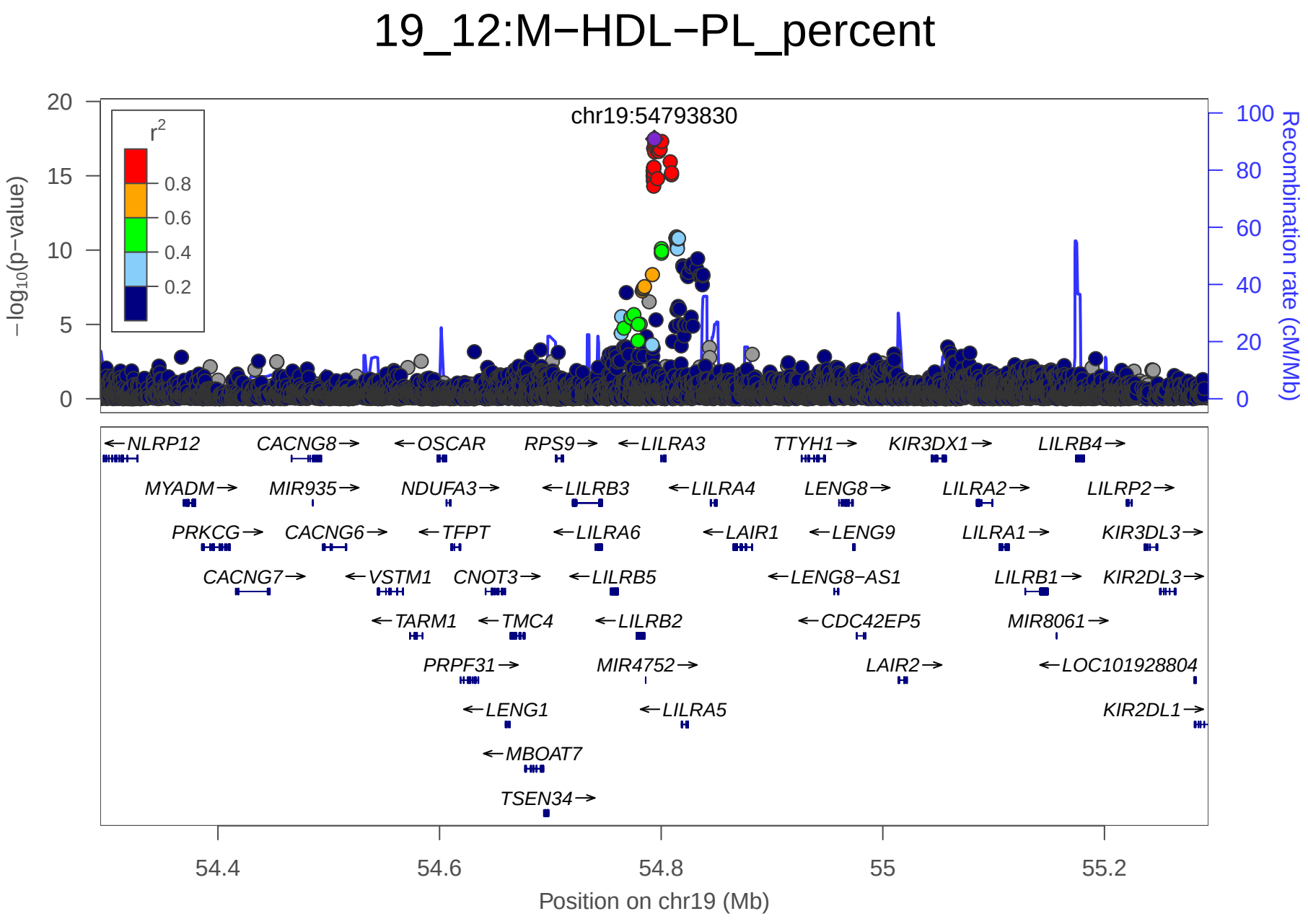

19_9:Crea
chr19:37855488
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ZNF345→
ZNF420→
ZNF383→
HKR1→
←ZNF569
ZNF571−AS1→
←ZNF607
←ZNF829
←ZNF585A
ZNF527→
ZNF793→
←ZFP30
←ZNF573
ZNF568→
←ZNF585B
ZNF570→
ZNF540→
LOC644554→
LINC01535→
←ZNF793−AS1
←ZNF781
←LOC284412
←ZNF571
←LOC100631378
37.4
37.6
37.8
38
38.2
Position on chr19 (Mb)

19_10:L−LDL−C_percent

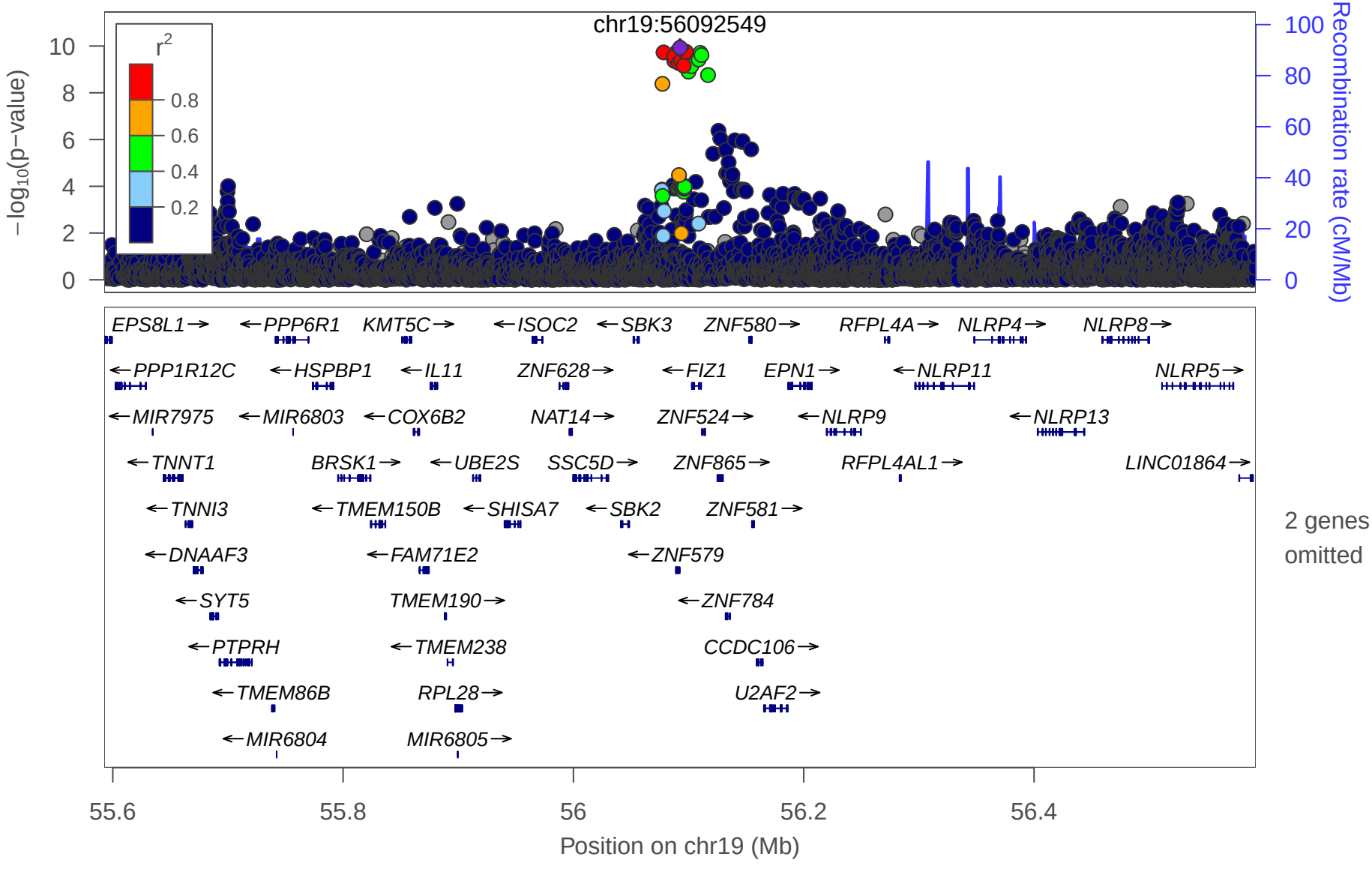


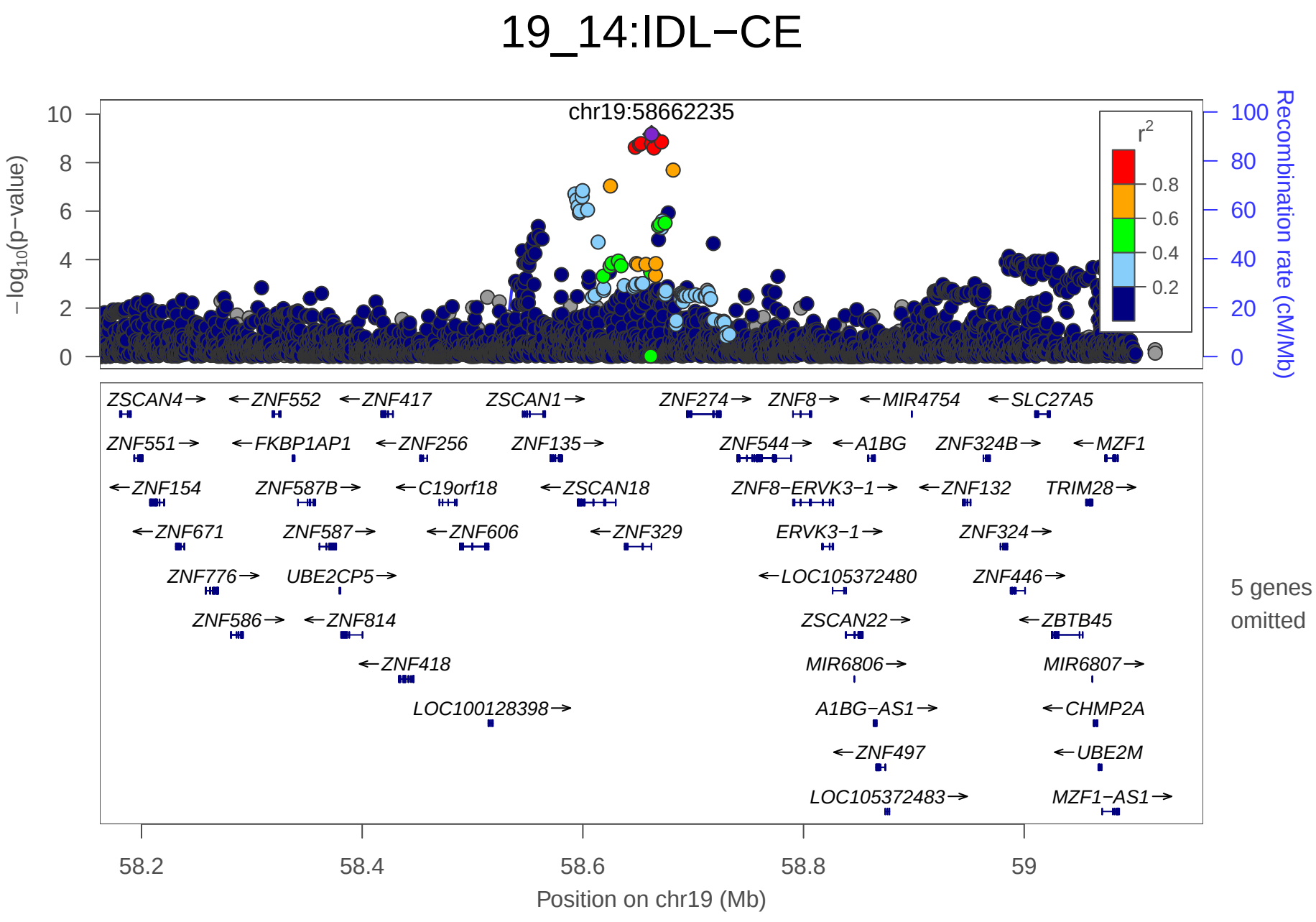
19_11:Val

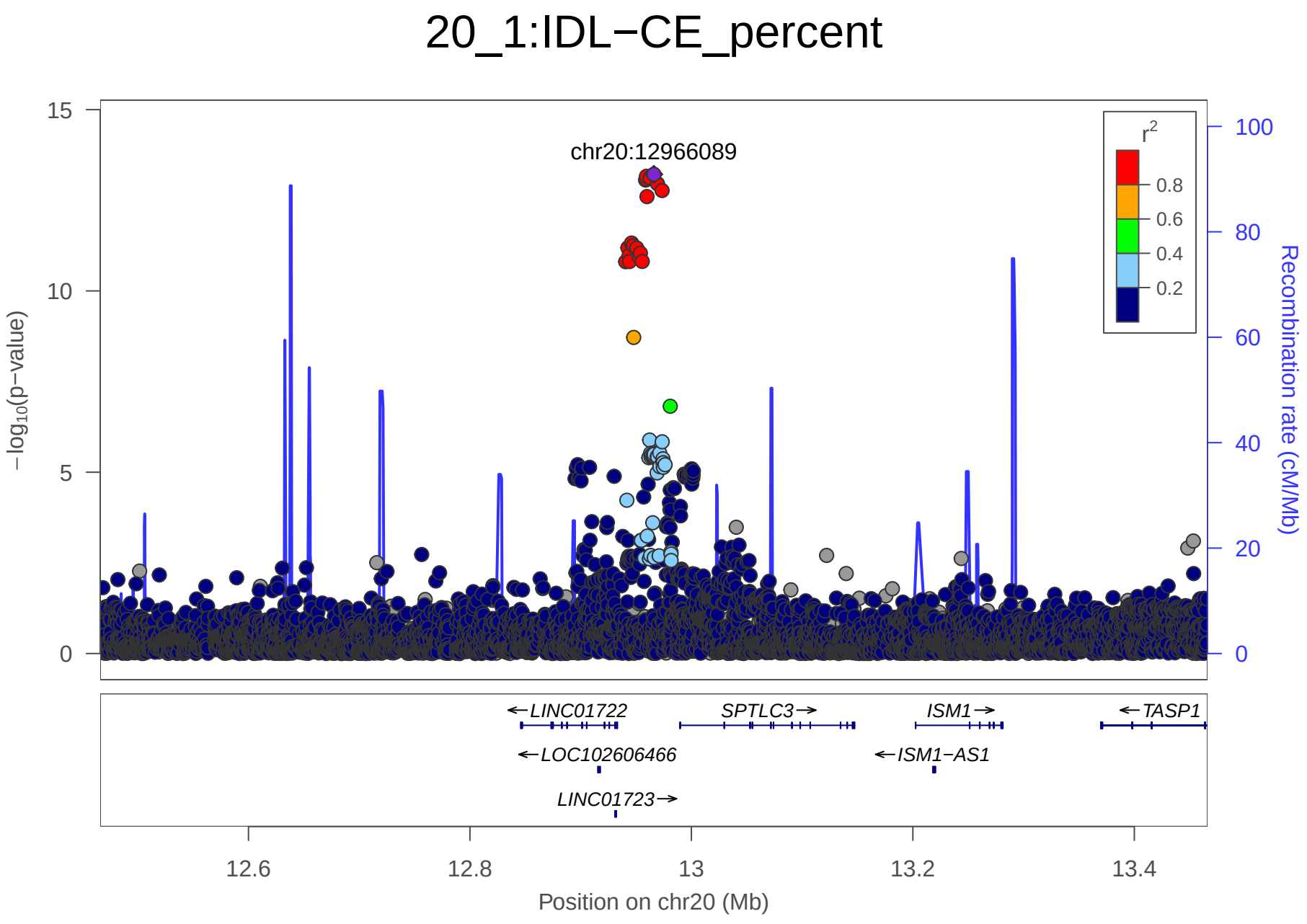

chr19:49304215
r²
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
CCDC114 CYTH2 FAM83E FUT2 BCAT2 NUCB1 LHB LIN7B SLC6A16
EMP3 GRWD1 SULT2B1 MAMSTR PLEKHA4 BAX CGB1 PPFIA3
TMEM143 LMTK3 SPACA4 RASIP1 PPP1R15A GYS1 NTF4 HRC
SYNGR4 RPL18 IZUMO1 TULP2 RUVBL2 C19orf73
KDELR1 SPHK2 FUT1 NUCB1−AS1 CGB2 TRPM4
GRIN2D DBP FGF21 DHDH CGB3
KCNJ14 CA11 HSD17B14 FTL CGB5
SEC1P MIR6798
NTN5 LOC101059948
LOC105447645 SNAR−G2
5 genes omitted
49 49.2 49.4 49.6 49.8
Position on chr19 (Mb)

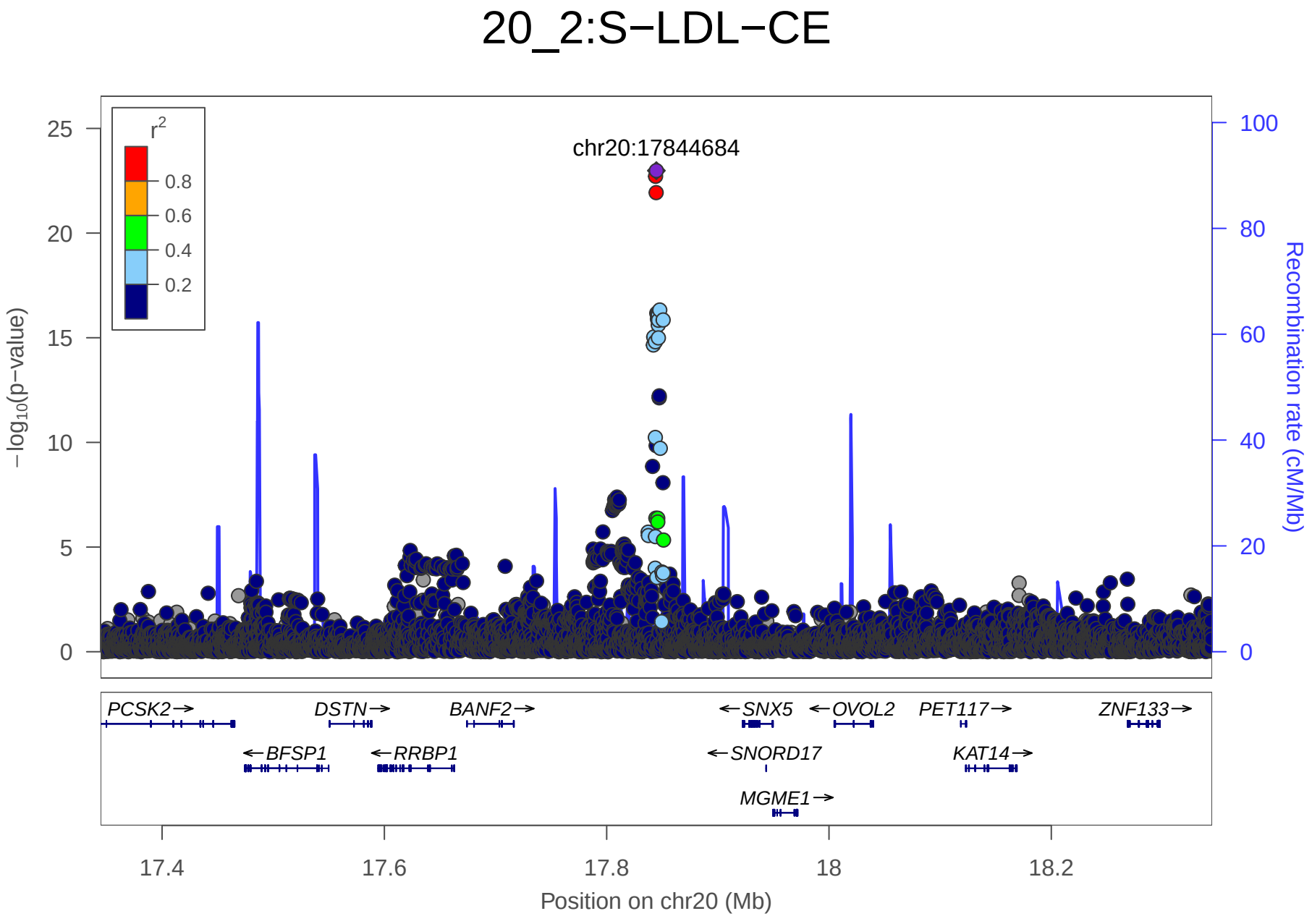

19_12:M−HDL−PL_percent
chr19:54793830
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
NLRP12
CACNG8
OSCAR
RPS9
LILRA3
TTYH1
KIR3DX1
LILRB4
MYADM
MIR935
NDUFA3
LILRB3
LILRA4
LENG8
LILRA2
LILRP2
PRKCG
CACNG6
TFPT
LILRA6
LAIR1
LENG9
LILRA1
KIR3DL3
CACNG7
VSTM1
CNOT3
LILRB5
LENG8−AS1
LILRB1
KIR2DL3
TARM1
TMC4
LILRB2
CDC42EP5
MIR8061
PRPF31
MIR4752
LAIR2
LOC101928804
LENG1
LILRA5
KIR2DL1
MBOAT7
TSEN34
Position on chr19 (Mb)

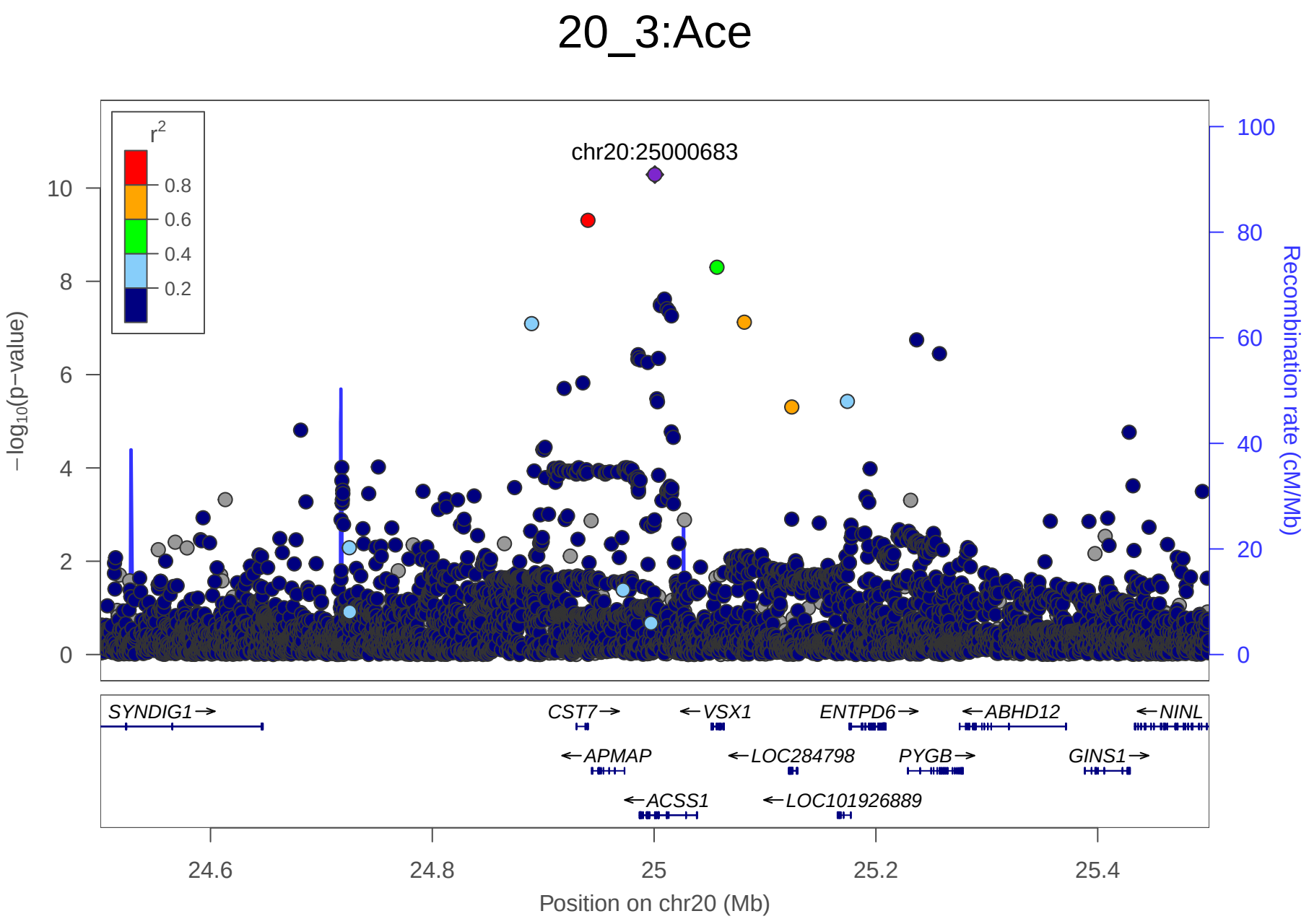
19_13:Serum−TG

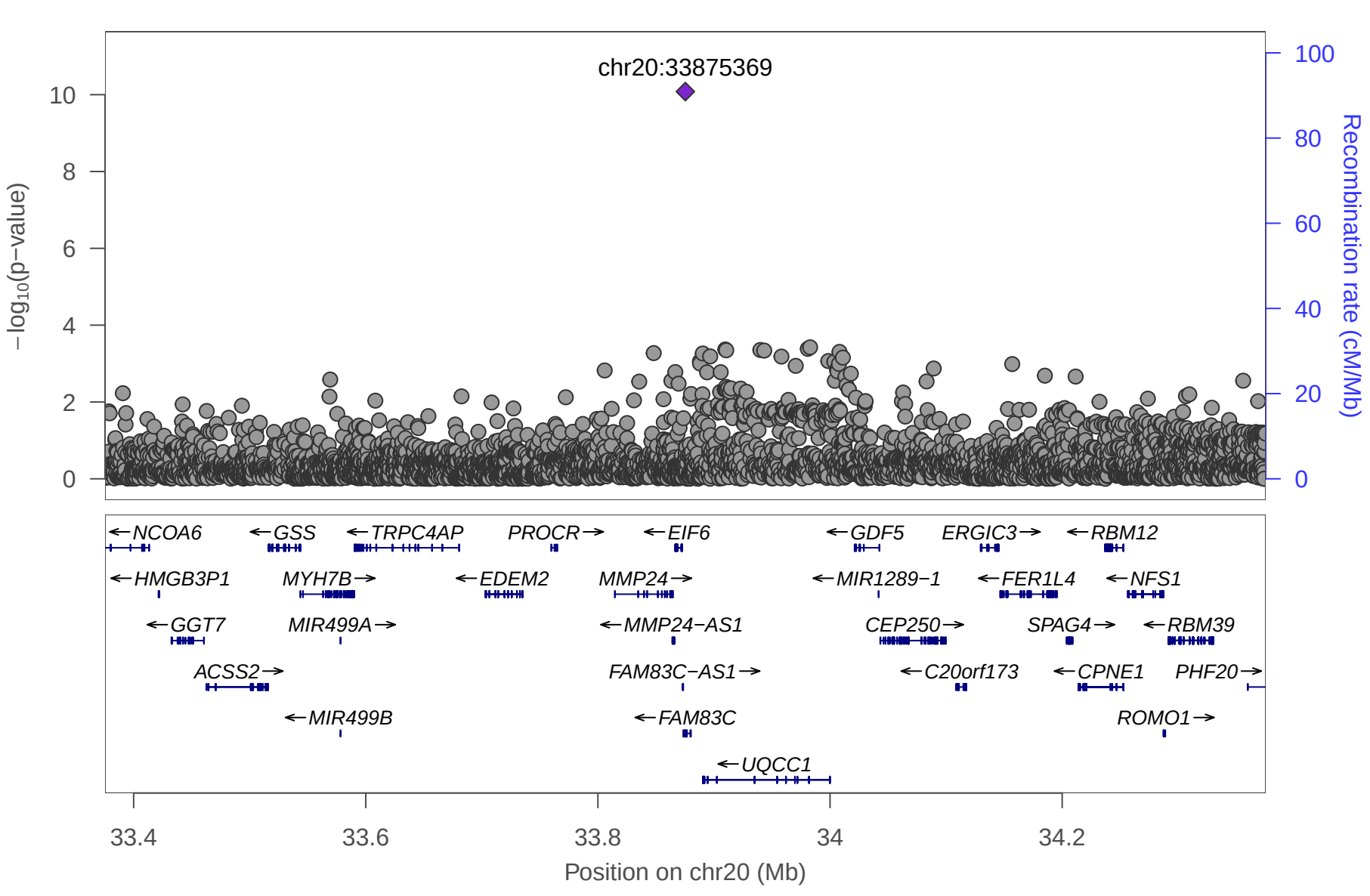


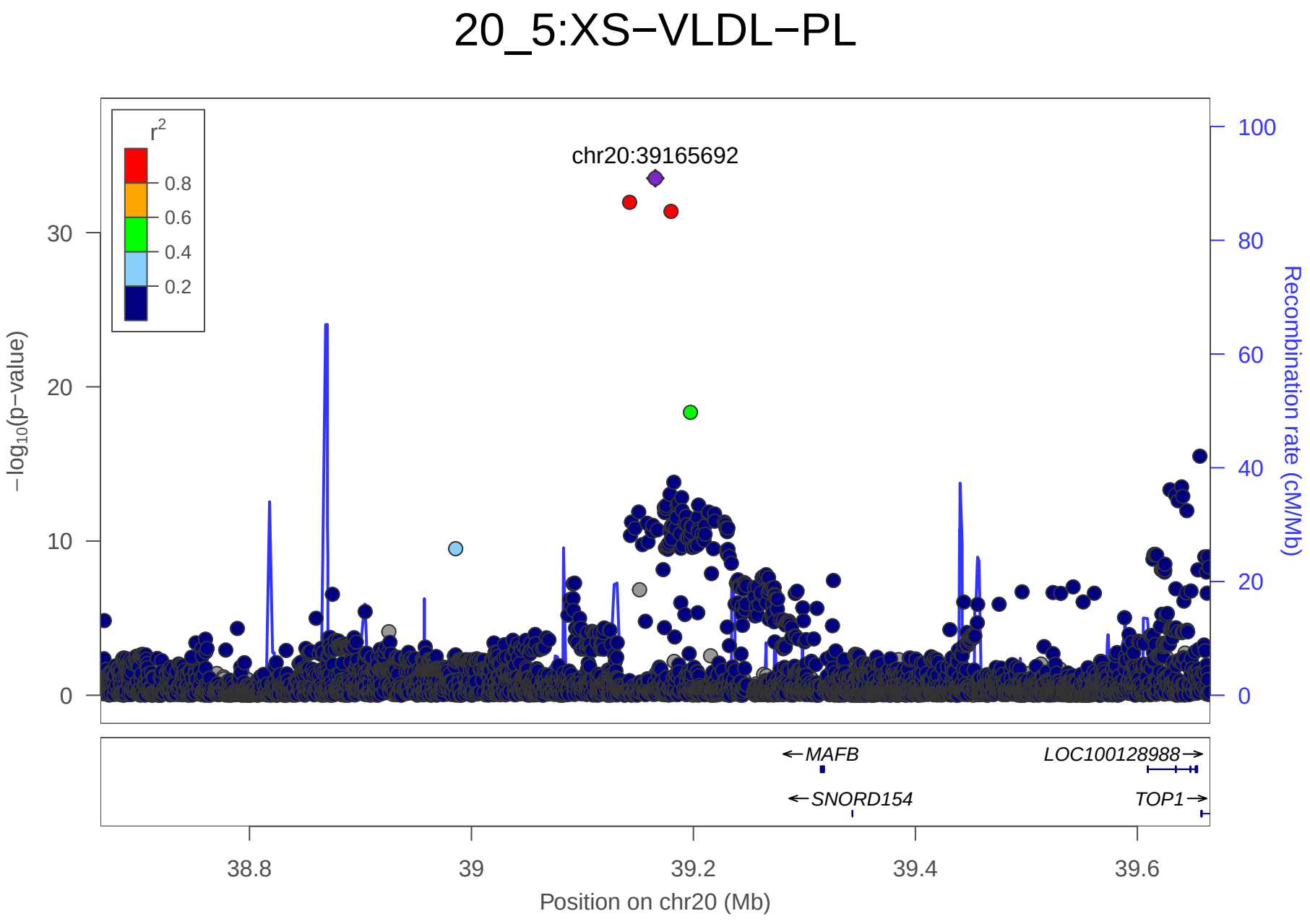

19_14:IDL−CE
chr19:58662235
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
ZSCAN4→ ←ZNF552 ←ZNF417 ZSCAN1→ ZNF274→ ZNF8→ ←MIR4754 ←SLC27A5
ZNF551→ ←FKBP1AP1 ←ZNF256 ZNF135→ ZNF544→ ←A1BG ZNF324B→ ←MZF1
←ZNF154 ZNF587B→ ←C19orf18 ←ZSCAN18 ZNF8−ERVK3−1→ ←ZNF132 TRIM28→
←ZNF671 ZNF587→ ←ZNF606 ←ZNF329 ERVK3−1→ ZNF324→
ZNF776→ UBE2CP5→ ←LOC105372480 ZNF446→
ZNF586→ ←ZNF814 ZSCAN22→ ←ZBTB45
←ZNF418 MIR6806→ MIR6807→
LOC100128398→ A1BG−AS1→ ←CHMP2A
←ZNF497 ←UBE2M
LOC105372483→ MZF1−AS1→
5 genes omitted
Position on chr19 (Mb)


20_1:IDL−CE_percent
chr20:12966089
r2
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
←LINC01722
SPTLC3→
ISM1→
←TASP1
←LOC102606466
←ISM1−AS1
LINC01723→
12.6
12.8
13
13.2
13.4
Position on chr20 (Mb)

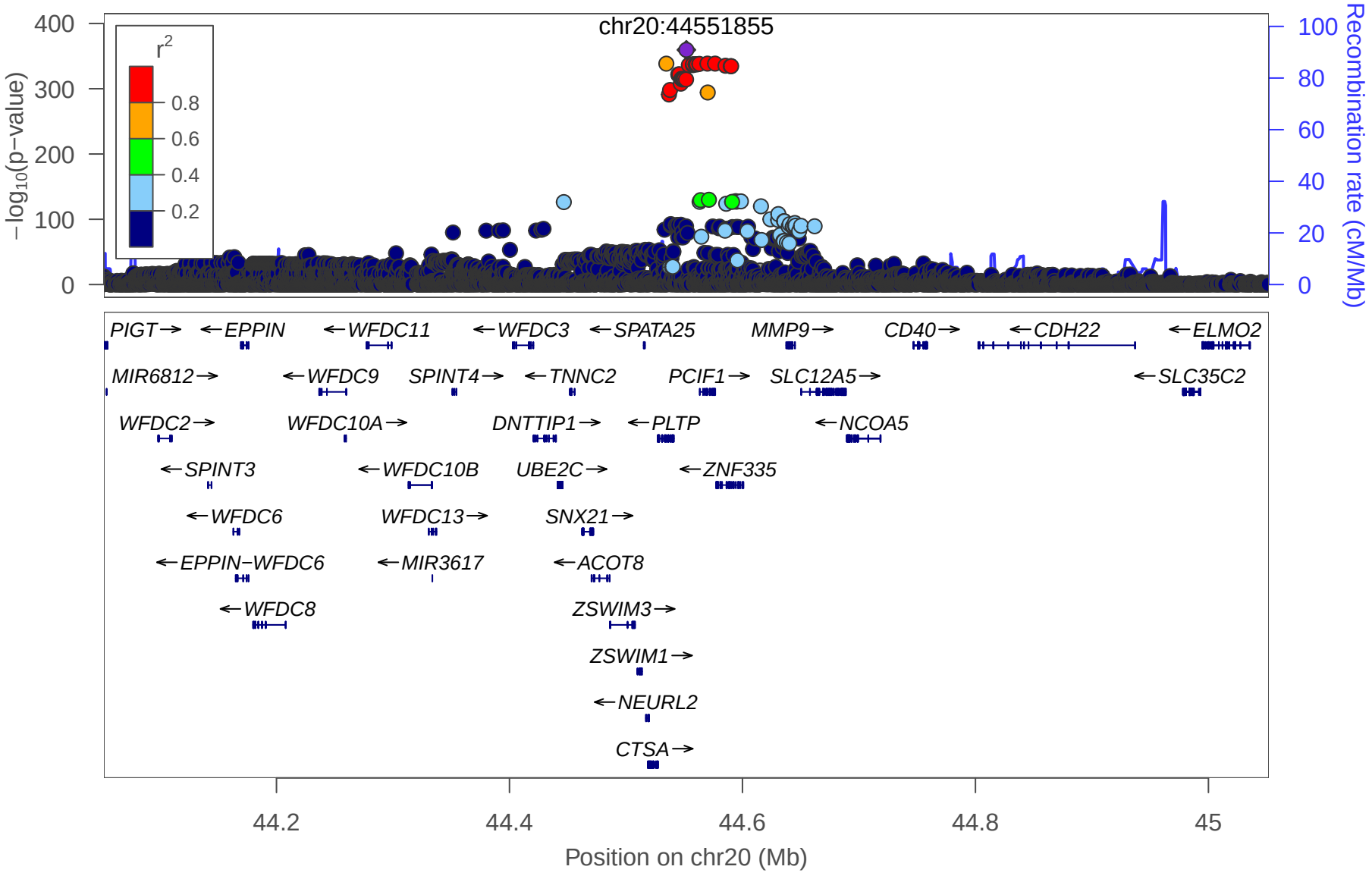

20_2:S−LDL−CE
chr20:17844684
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PCSK2
DSTN
BANF2
SNX5
OVOL2
PET117
ZNF133
BFSP1
RRBP1
SNORD17
KAT14
MGME1
Position on chr20 (Mb)

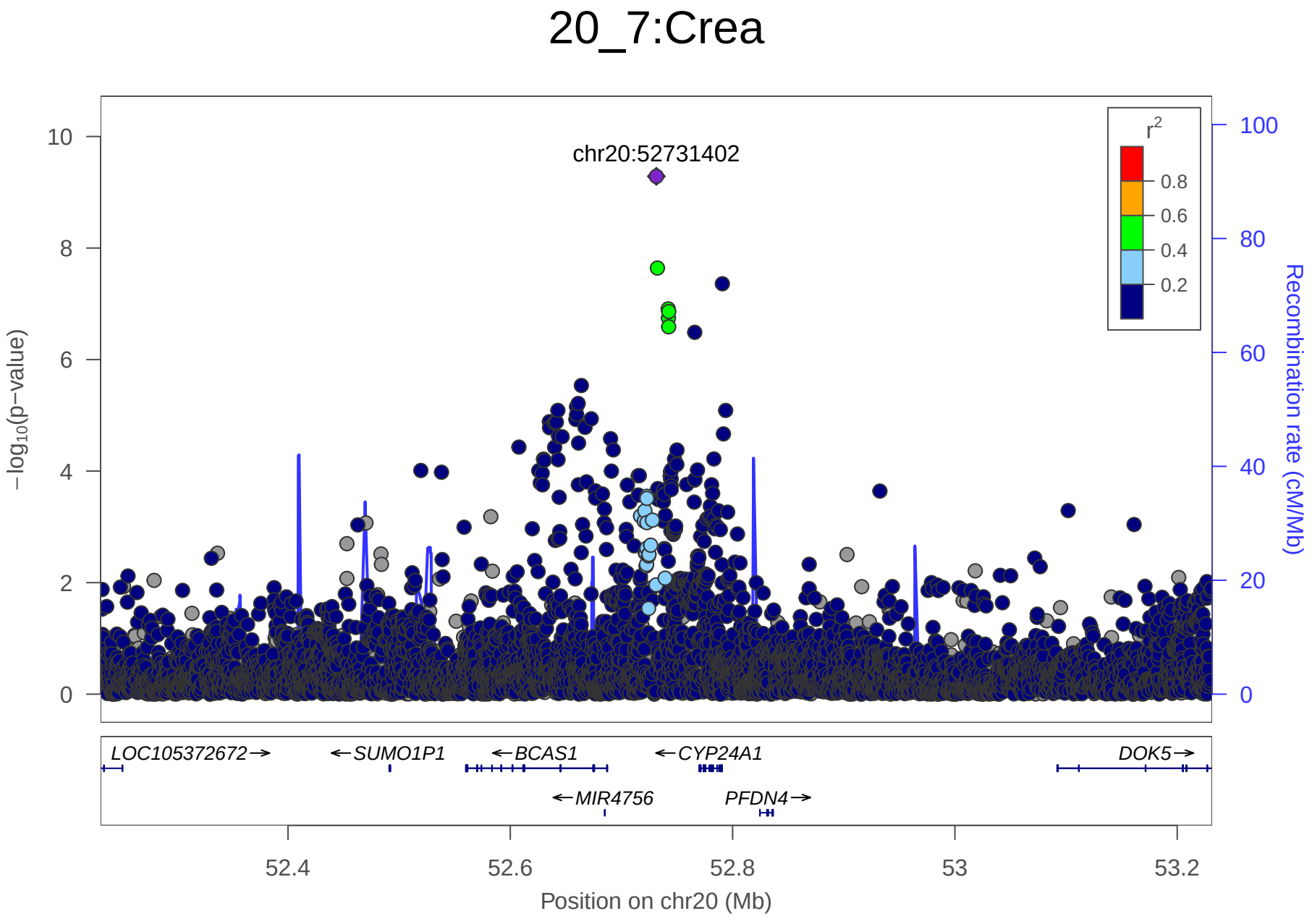

20_3:Ace
chr20:25000683
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
SYNDIG1
CST7
VSX1
ENTPD6
ABHD12
NINL
APMAP
LOC284798
PYGB
GINS1
ACSS1
LOC101926889
Position on chr20 (Mb)

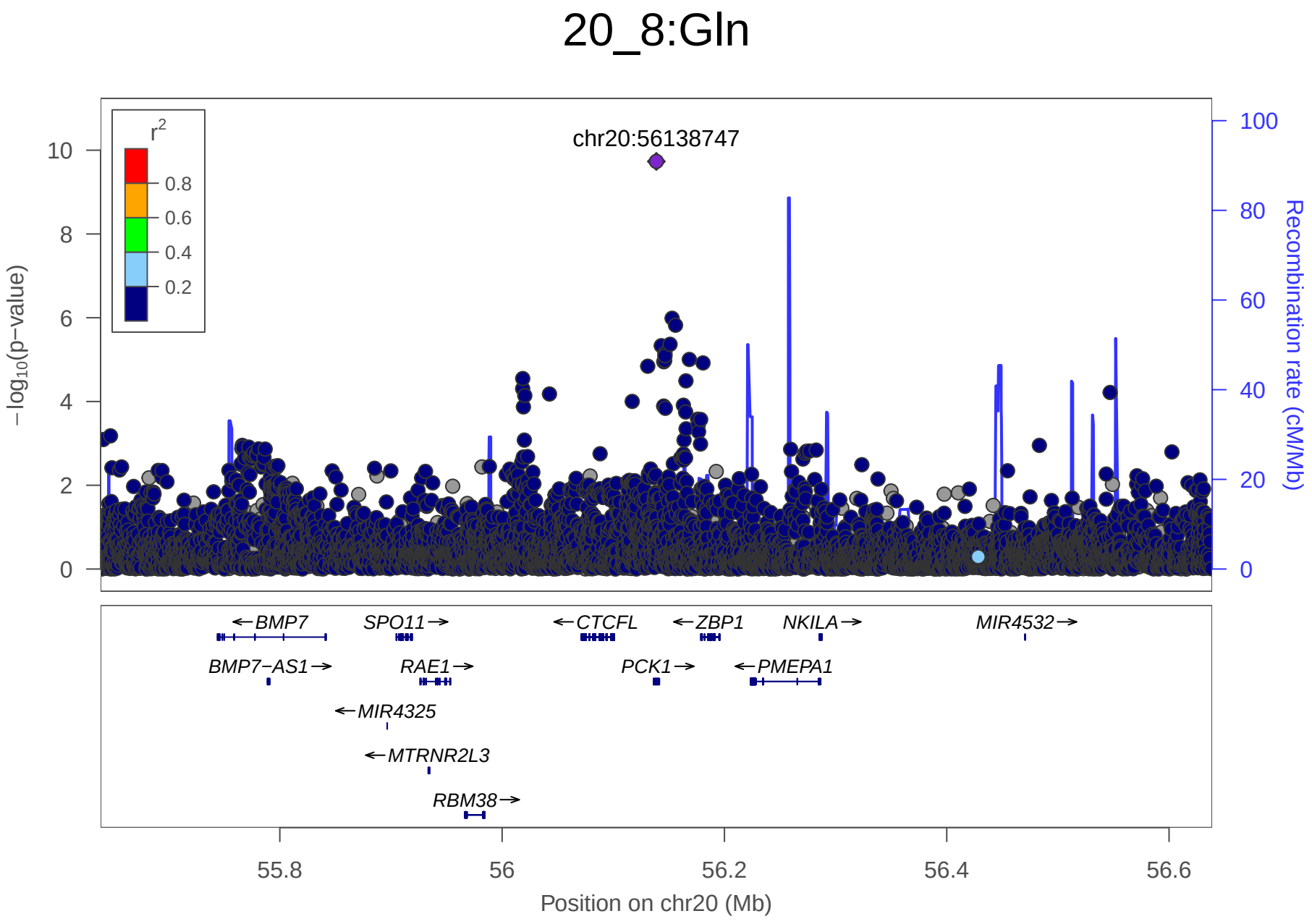

20_4:UnsatDeg
chr20:33875369
−log10(p−value)
Recombination rate (cM/Mb)
0
2
4
6
8
10
0
20
40
60
80
100
←NCOA6
←GSS
←TRPC4AP
PROCR→
←EIF6
←GDF5
ERGIC3→
←RBM12
←HMGB3P1
MYH7B→
←EDEM2
MMP24→
←MIR1289−1
←FER1L4
←NFS1
←GGT7
MIR499A→
←MMP24−AS1
CEP250→
SPAG4→
←RBM39
ACSS2→
FAM83C−AS1→
←C20orf173
←CPNE1
PHF20→
←MIR499B
←FAM83C
ROMO1→
←UQCC1
33.4
33.6
33.8
34
34.2
Position on chr20 (Mb)


20_5:XS−VLDL−PL
r2
0.8
0.6
0.4
0.2
chr20:39165692
−log10(p−value)
30
20
10
0
100
80
60
40
20
0
Recombination rate (cM/Mb)
←MAFB
LOC100128988→
←SNORD154
TOP1→
38.8
39
39.2
39.4
39.6
Position on chr20 (Mb)

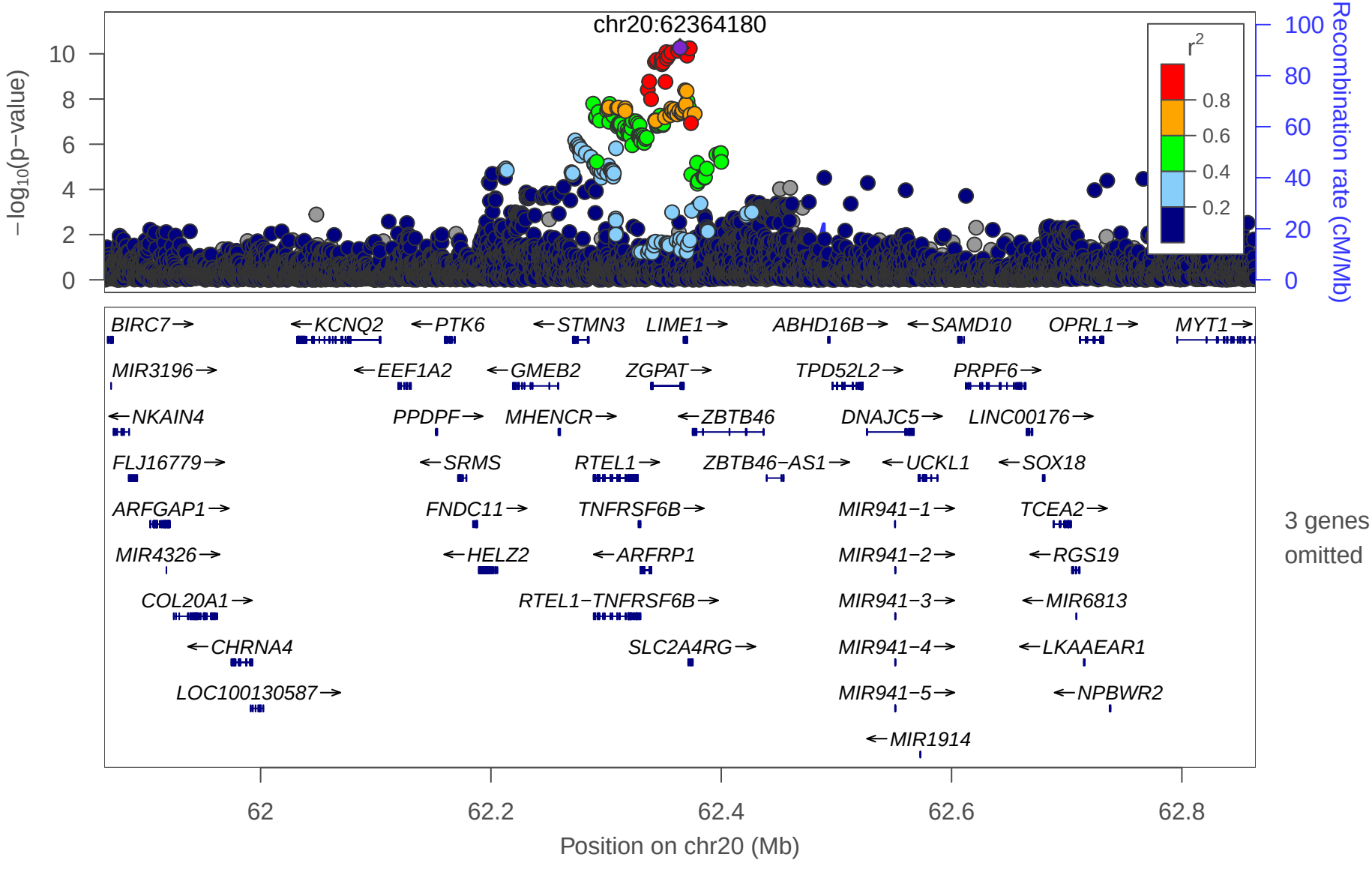
20_6:S−HDL−P

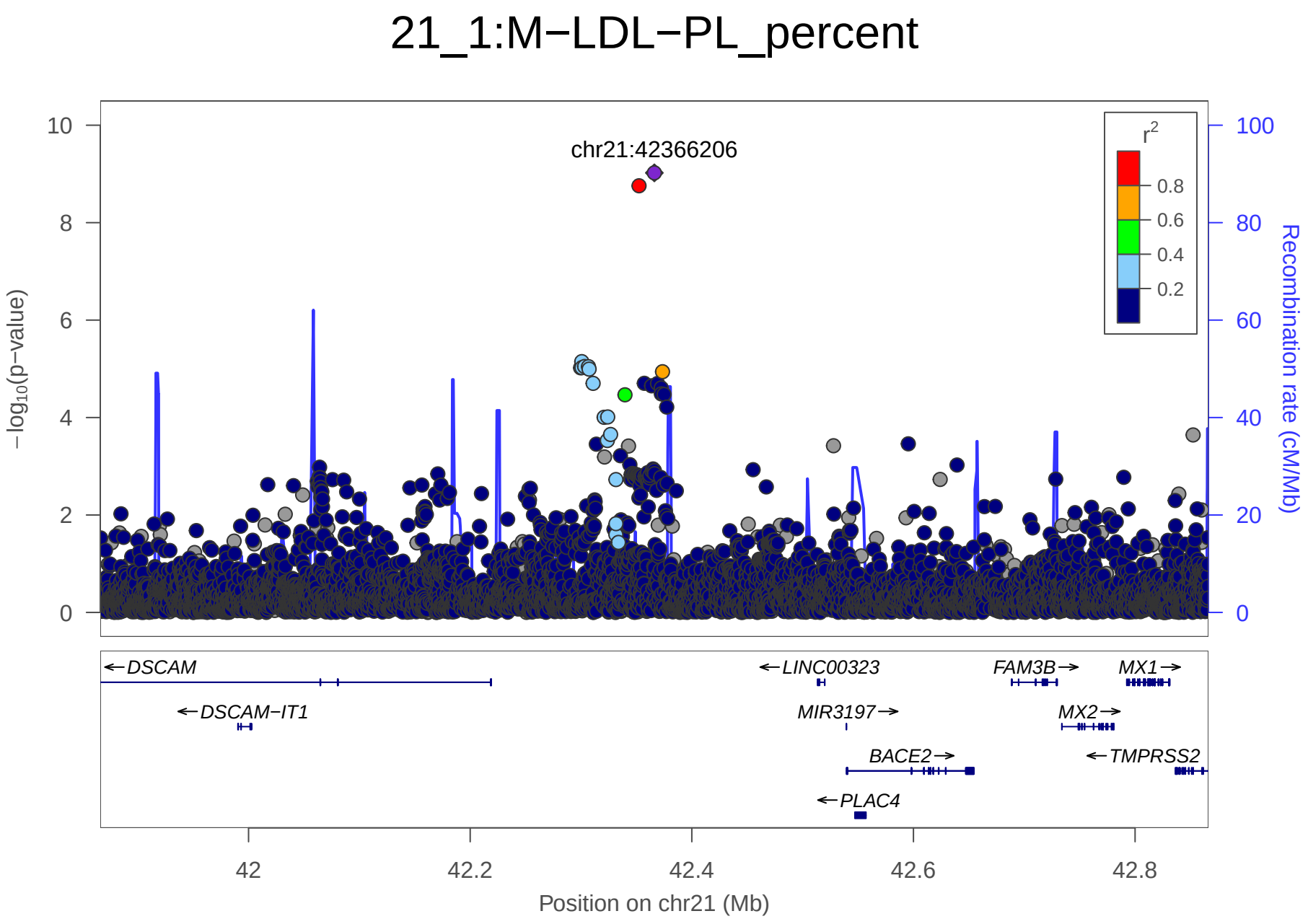

chr20:44551855
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
PIGT→
←EPPIN
←WFDC11
←WFDC3
←SPATA25
MMP9→
CD40→
←CDH22
←ELMO2
MIR6812→
←WFDC9
SPINT4→
←TNNC2
PCIF1→
SLC12A5→
←SLC35C2
WFDC2→
WFDC10A→
DNTTIP1→
←PLTP
←NCOA5
←SPINT3
←WFDC10B
UBE2C→
←ZNF335
←WFDC6
WFDC13→
SNX21→
←EPPIN−WFDC6
←MIR3617
←ACOT8
←WFDC8
ZSWIM3→
ZSWIM1→
←NEURL2
CTSA→
44.2
44.4
44.6
44.8
45
Position on chr20 (Mb)

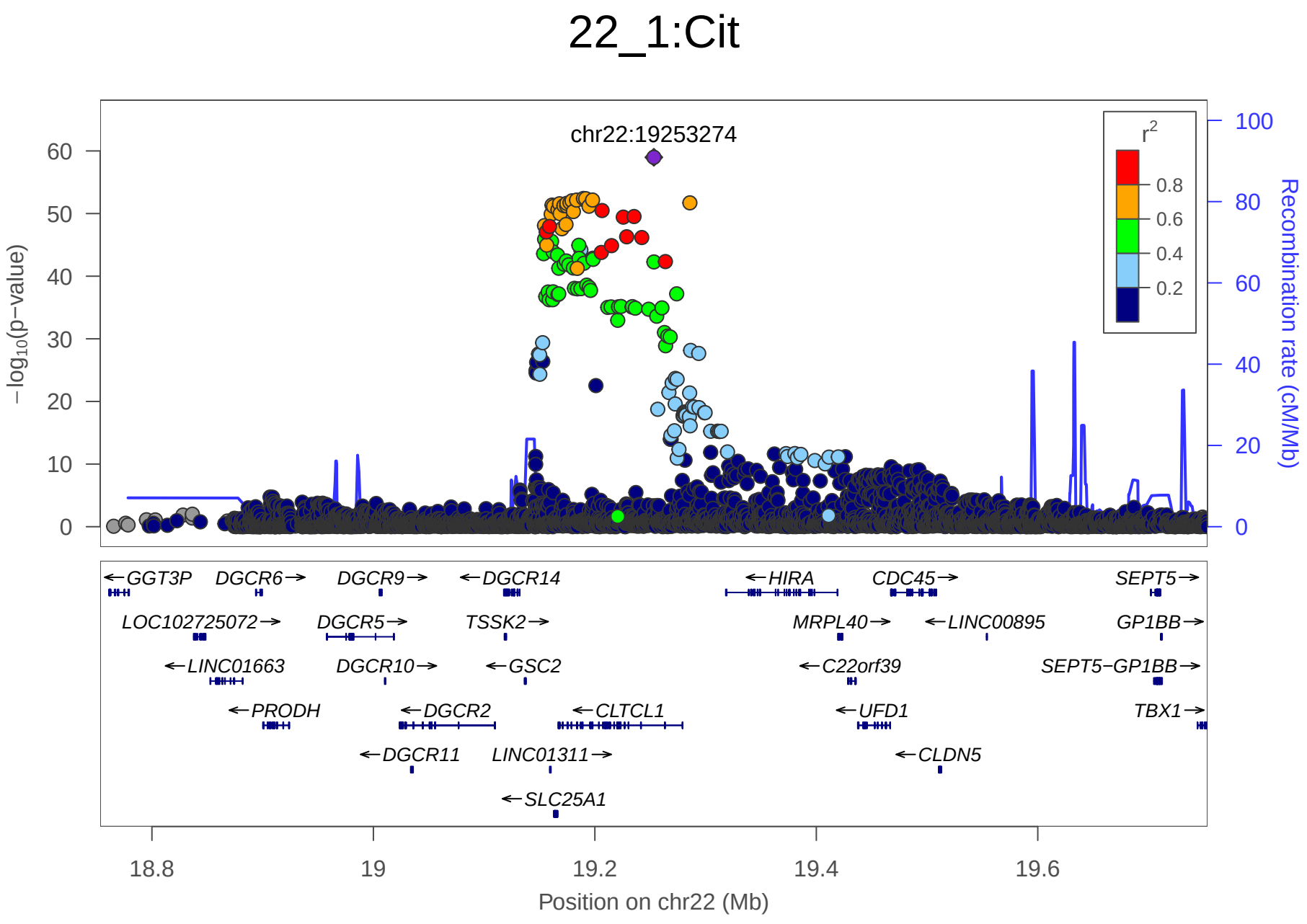

20_7:Crea
chr20:52731402
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
LOC105372672
SUMO1P1
BCAS1
CYP24A1
DOK5
MIR4756
PFDN4
Position on chr20 (Mb)


20_8:Gln
chr20:56138747
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
BMP7
SPO11
CTCFL
ZBP1
NKILA
MIR4532
BMP7−AS1
RAE1
PCK1
PMEPA1
MIR4325
MTRNR2L3
RBM38
Position on chr20 (Mb)

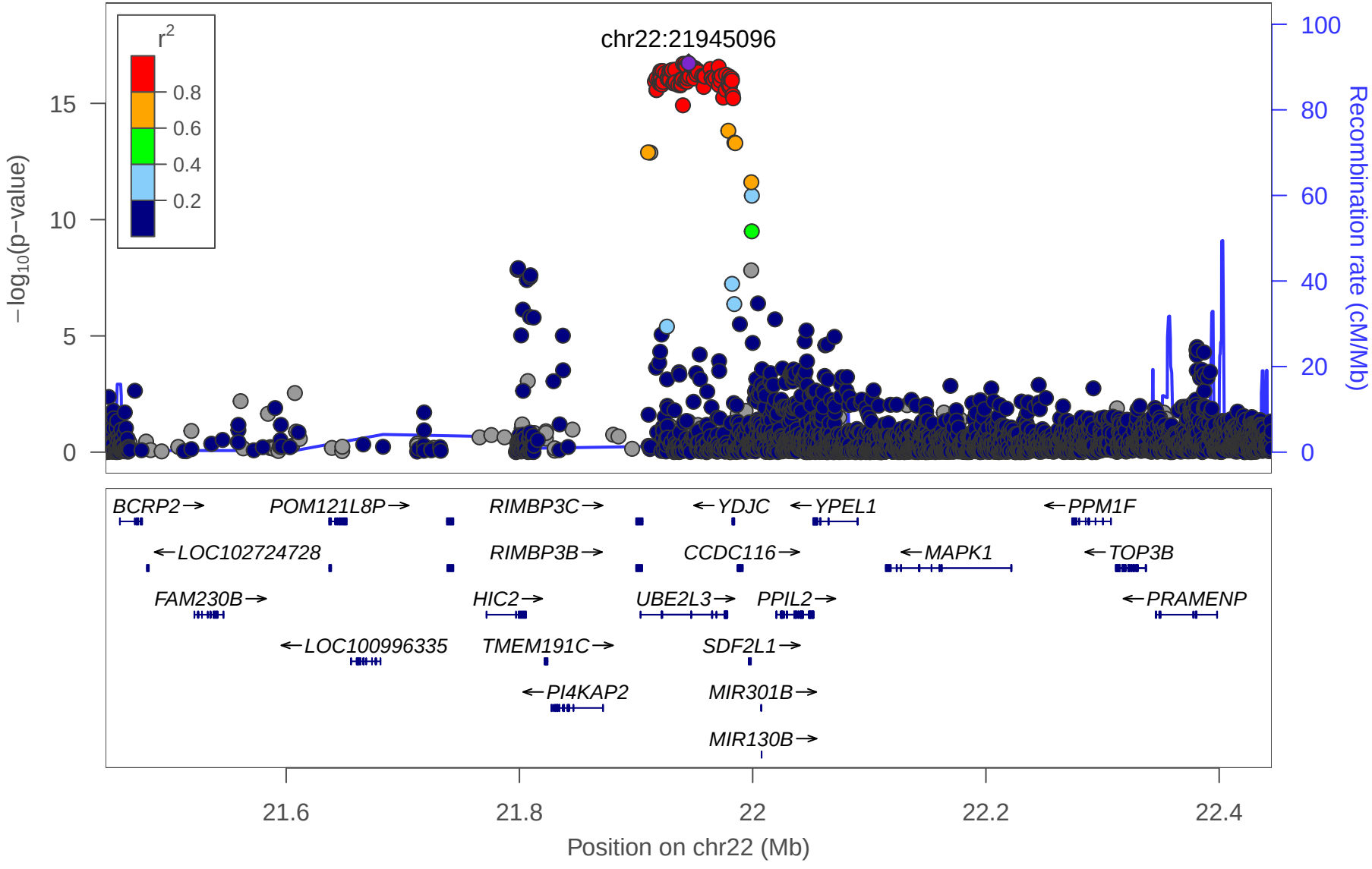
20_9:Phe

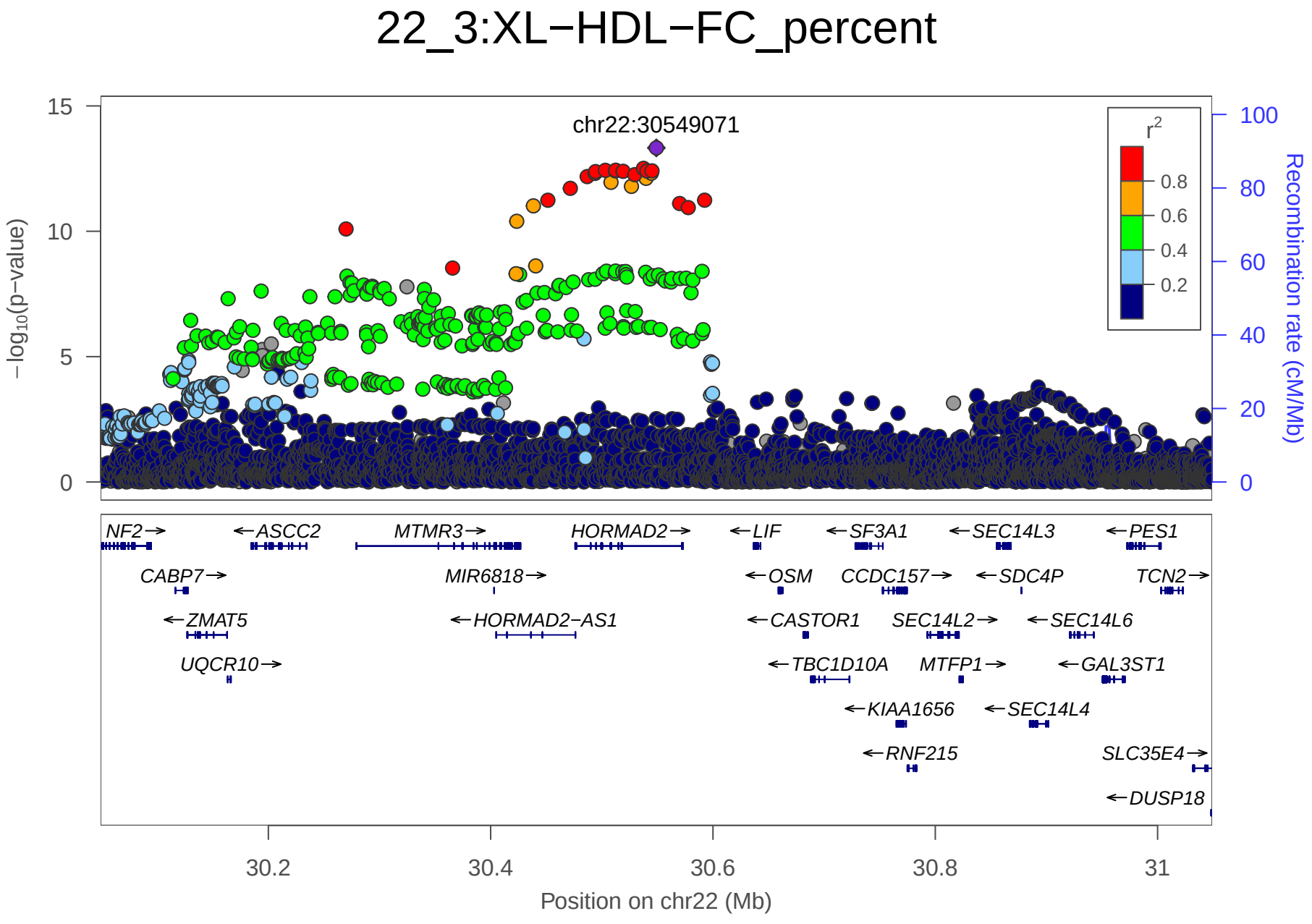

chr20:62364180
$-\log_{10}$(p−value)
Recombination rate (cM/Mb)
r²
0.8
0.6
0.4
0.2
BIRC7→
←KCNQ2
←PTK6
←STMN3
LIME1→
ABHD16B→
←SAMD10
OPRL1→
MYT1→
MIR3196→
←EEF1A2
←GMEB2
ZGPAT→
TPD52L2→
PRPF6→
←NKAIN4
PPDPF→
MHENCR→
←ZBTB46
DNAJC5→
LINC00176→
FLJ16779→
←SRMS
RTEL1→
ZBTB46−AS1→
←UCKL1
←SOX18
ARFGAP1→
FNDC11→
TNFRSF6B→
MIR941−1→
TCEA2→
MIR4326→
←HELZ2
←ARFRP1
MIR941−2→
←RGS19
COL20A1→
RTEL1−TNFRSF6B→
MIR941−3→
←MIR6813
←CHRNA4
SLC2A4RG→
MIR941−4→
←LKAAEAR1
LOC100130587→
MIR941−5→
←NPBWR2
←MIR1914
3 genes omitted
Position on chr20 (Mb)

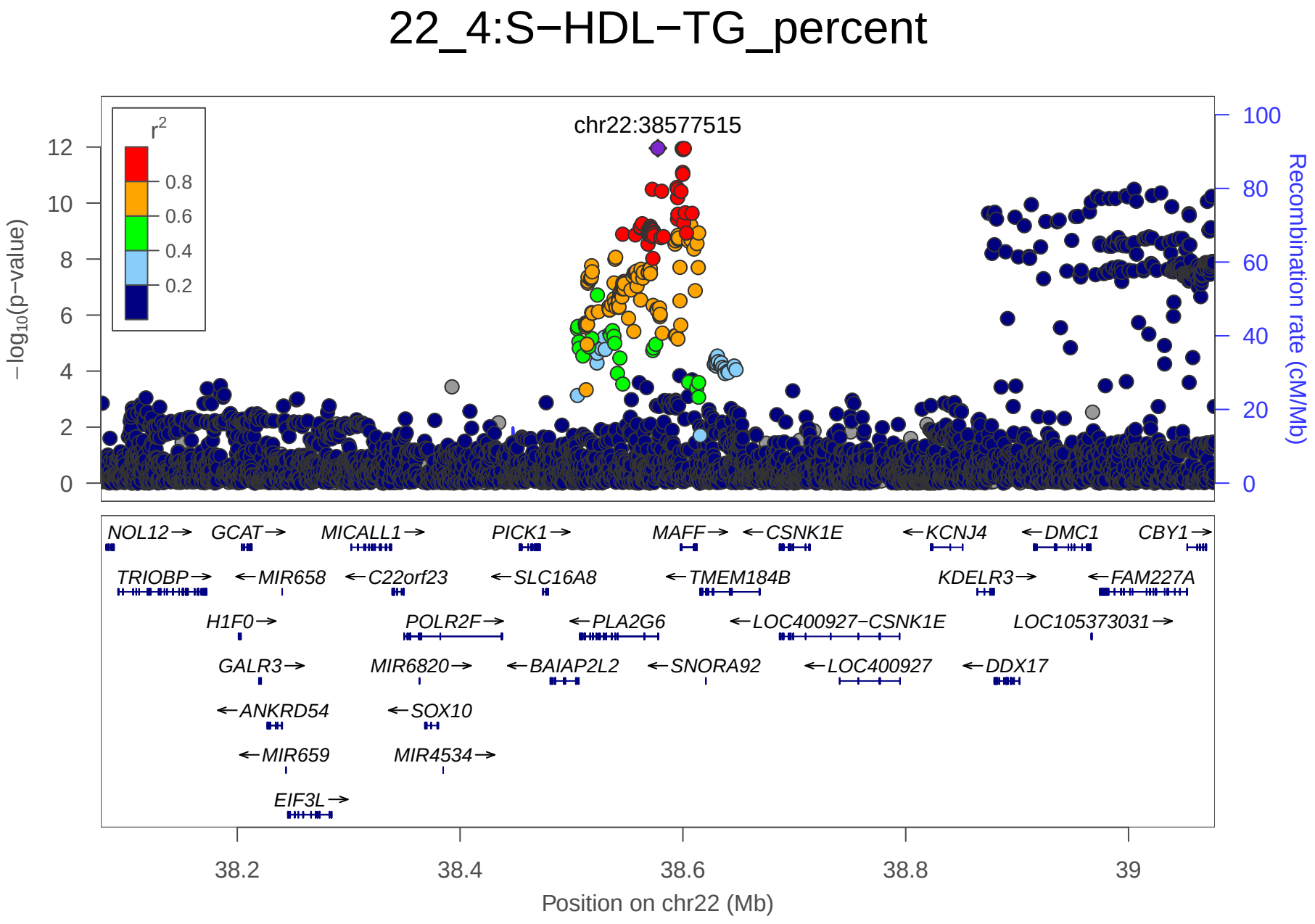

21_1:M−LDL−PL_percent
chr21:42366206
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
10
8
6
4
2
0
100
80
60
40
20
0
DSCAM
DSCAM−IT1
LINC00323
MIR3197
FAM3B
MX1
MX2
BACE2
TMPRSS2
PLAC4
42
42.2
42.4
42.6
42.8
Position on chr21 (Mb)

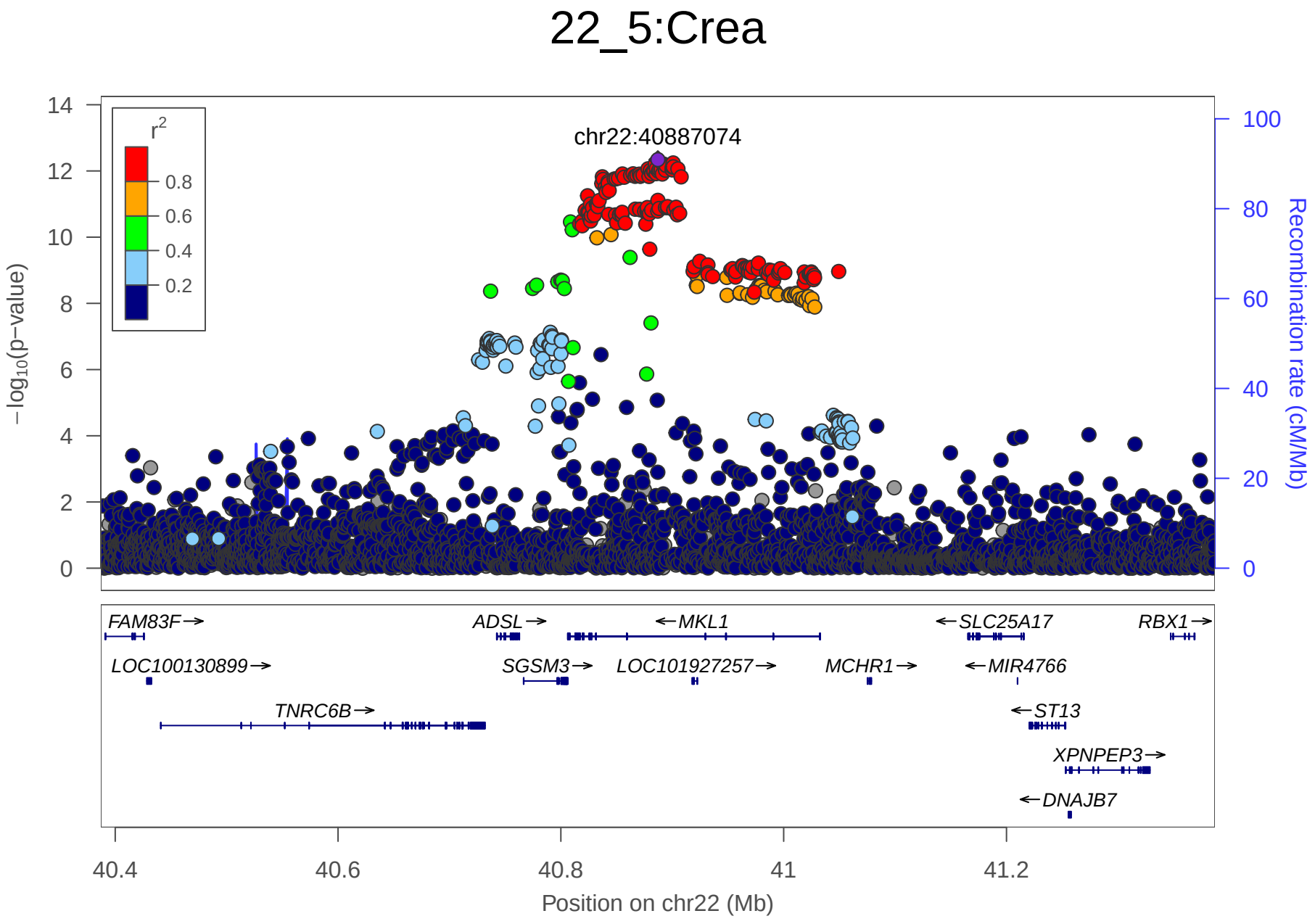

22_1:Cit
chr22:19253274
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
GGT3P
DGCR6
DGCR9
DGCR14
HIRA
CDC45
SEPT5
LOC102725072
DGCR5
TSSK2
MRPL40
LINC00895
GP1BB
LINC01663
DGCR10
GSC2
C22orf39
SEPT5−GP1BB
PRODH
DGCR2
CLTCL1
UFD1
TBX1
DGCR11
LINC01311
CLDN5
SLC25A1
Position on chr22 (Mb)

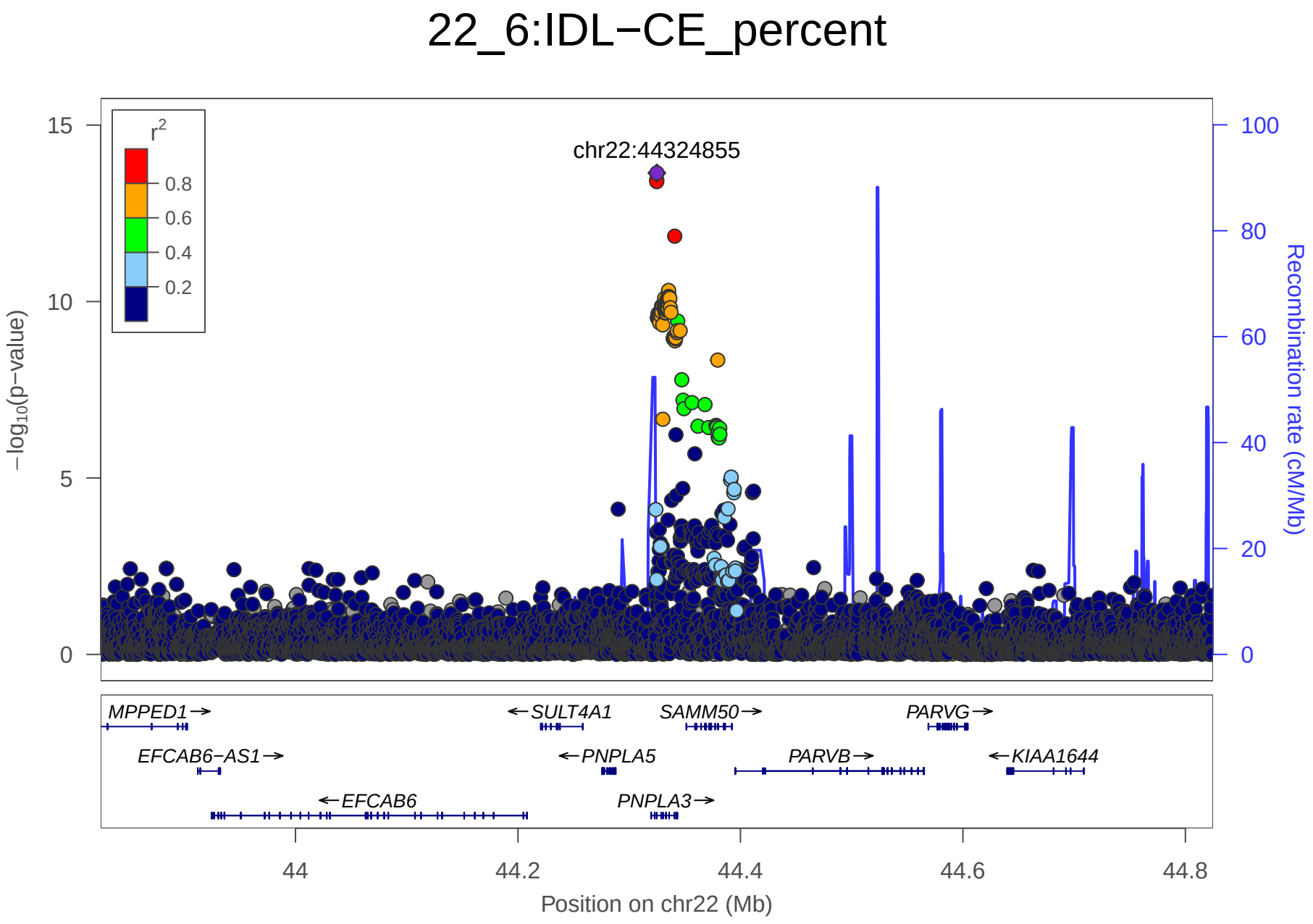
22_2:ApoA1


chr22:21945096
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
BCRP2
POM121L8P
RIMBP3C
YDJC
YPEL1
PPM1F
LOC102724728
RIMBP3B
CCDC116
MAPK1
TOP3B
FAM230B
HIC2
UBE2L3
PPIL2
PRAMENP
LOC100996335
TMEM191C
SDF2L1
PI4KAP2
MIR301B
MIR130B
21.6
21.8
22
22.2
22.4
Position on chr22 (Mb)


22_3:XL−HDL−FC_percent
chr22:30549071
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
15
10
5
0
100
80
60
40
20
0
NF2→
←ASCC2
MTMR3→
HORMAD2→
←LIF
←SF3A1
←SEC14L3
←PES1
CABP7→
MIR6818→
←OSM
CCDC157→
←SDC4P
TCN2→
←ZMAT5
←HORMAD2−AS1
←CASTOR1
SEC14L2→
←SEC14L6
UQCR10→
←TBC1D10A
MTFP1→
←GAL3ST1
←KIAA1656
←SEC14L4
←RNF215
SLC35E4→
←DUSP18
30.2
30.4
30.6
30.8
31
Position on chr22 (Mb)


22_4:S−HDL−TG_percent
chr22:38577515
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
NOL12
GCAT
MICALL1
PICK1
MAFF
CSNK1E
KCNJ4
DMC1
CBY1
TRIOBP
MIR658
C22orf23
SLC16A8
TMEM184B
KDELR3
FAM227A
H1F0
POLR2F
PLA2G6
LOC400927−CSNK1E
LOC105373031
GALR3
MIR6820
BAIAP2L2
SNORA92
LOC400927
DDX17
ANKRD54
SOX10
MIR659
MIR4534
EIF3L
Position on chr22 (Mb)


22_5:Crea
chr22:40887074
r2
0.8
0.6
0.4
0.2
−log10(p−value)
Recombination rate (cM/Mb)
FAM83F
ADSL
MKL1
SLC25A17
RBX1
LOC100130899
SGSM3
LOC101927257
MCHR1
MIR4766
TNRC6B
ST13
XPNPEP3
DNAJB7
Position on chr22 (Mb)


22_6:IDL−CE_percent
chr22:44324855
r2
0.8
0.6
0.4
0.2
15
10
5
0
−log10(p−value)
100
80
60
40
20
0
Recombination rate (cM/Mb)
MPPED1→
←SULT4A1
SAMM50→
PARVG→
EFCAB6−AS1→
←PNPLA5
PARVB→
←KIAA1644
←EFCAB6
PNPLA3→
44
44.2
44.4
44.6
44.8
Position on chr22 (Mb)