

Appendix. Potential hidden blocks

111 potential sites based on the anchors used to build the blocks:

[21 small clusters of anchors](#)

[90 isolated anchors](#)

[81 potential sites based on genes \(as determined by ensembl\)](#)

Key

- B1-B281 are the syteny blocks
- Hxxx, chr..., ENS..., are external identifiers for the blocks that were tested.
- B89 -1 6 20123263 29058011 13 20566921 29761202
means block 89, opposite strands (-1), human chromosome 6 nucleotides 20123263-29058011, mouse chromosome 13 nucleotides 20566921-29761202
- Each listed potential hidden block is shown first between the two human blocks where it fits, and second between the two mouse blocks where it fits.

Potential hidden blocks that form a small cluster of anchors

(1) H181:

```
B42 1 3 12870112 15068439 6 91409248 92992110
H181 1 3 15122612 15157104 9 106830795 106862696
B43 1 3 15177016 16274366 14 26435643 27206563
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B54 -1 3 126746637 144928556 9 90806074 106825155
H181 1 3 15122612 15157104 9 106830795 106862696
B48 -1 3 47058695 51438460 9 106912100 111621176
```

(2) H229:

```
B54 -1 3 126746637 144928556 9 90806074 106825155
H229 1 3 145270526 145610755 13 29776899 30026476
B55 1 3 146018112 165098288 3 57817000 76646784
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B89 -1 6 20123263 29058011 13 20566921 29761202
H229 1 3 145270526 145610755 13 29776899 30026476
B88 1 6 166290 20118265 13 30055609 48119336
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(3) H230:

```
B54 -1 3 126746637 144928556 9 90806074 106825155
H230 -1 3 145402510 145911312 3 19693545 20064461
B55 1 3 146018112 165098288 3 57817000 76646784
```

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B139 1 8 63445049 66455796 3 15921269 19629727
H230 -1 3 145402510 145911312 3 19693545 20064461
B57 -1 3 167691902 175098003 3 20308062 28669246
```

(4) H321:

B77 1 5 102421477 109680107 17 57945510 64651523
H321 -1 5 109697779 109722600 18 31756061 31784780
B78 1 5 109922486 111890773 18 32887608 34577096

B243 1 18 18405876 41210522 18 9944677 31718535
H321 -1 5 109697779 109722600 18 31756061 31784780
B31 -1 2 124480451 126084332 18 31809356 32842104

(5) H332:

B81 1 5 133724901 136965714 13 55110588 57638659
H332 1 5 137011893 137099450 18 44446423 44533009
B82 1 5 137101134 147649159 18 34587903 44275299

B82 1 5 137101134 147649159 18 34587903 44275299
H332 1 5 137011893 137099450 18 44446423 44533009
B79 1 5 111908709 129884865 18 44557280 60465570

(6) H422:

B108 -1 7 19397991 22170784 12 111604389 114250780
H422 1 7 22246577 22415045 5 28342634 28520831
B109 1 7 22898169 32723118 6 49363444 57308117

B124 1 7 148804843 155395463 5 22707921 28257720
H422 1 7 22246577 22415045 5 28342634 28520831
B18 1 2 26317413 28924420 5 28612308 31149741

(7) H423:

B108 -1 7 19397991 22170784 12 111604389 114250780
H423 1 7 22494102 22892777 5 22290352 22645163
B109 1 7 22898169 32723118 6 49363444 57308117

B120 1 7 100871379 103679611 5 19857400 22263918
H423 1 7 22494102 22892777 5 22290352 22645163
B124 1 7 148804843 155395463 5 22707921 28257720

(8) H441:

B112 1 7 43555304 54768752 11 5584810 16912546
H441 1 7 55496415 55624818 5 128004634 128303225
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
H441 1 7 55496415 55624818 5 128004634 128303225
B113 -1 7 65496178 70582019 5 128791601 132651725

(9) H445:

B112 1 7 43555304 54768752 11 5584810 16912546
H445 1 7 64180983 65062351 5 128436150 128671403
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
H445 1 7 64180983 65062351 5 128436150 128671403
B113 -1 7 65496178 70582019 5 128791601 132651725

(10) H449:

B114 -1 7 71370997 73342666 5 132740372 133969586
H449 1 7 73698194 74680105 5 134009458 134650857
B115 -1 7 75349329 83808903 5 10906478 19817355

B114 -1 7 71370997 73342666 5 132740372 133969586
H449 1 7 73698194 74680105 5 134009458 134650857
B119 -1 7 98062835 100597327 5 134738623 137051964

(11) H521:

B142 -1 8 85653020 96246458 4 9258417 19488529
H521 1 8 96260763 96366846 13 64402990 64496433
B143 1 8 96459282 143732083 15 32888006 77422816

B152 1 9 88158123 90472665 13 61669473 63179589
H521 1 8 96260763 96366846 13 64402990 64496433
B72 -1 5 232166 8088502 13 65619862 71445385

(12) H550:

B146 1 9 27637433 38782166 4 34605534 44701744
H550 1 9 38982971 39058603 13 63290872 63361584
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
H550 1 9 38982971 39058603 13 63290872 63361584
B72 -1 5 232166 8088502 13 65619862 71445385

(13) H552:

B146 1 9 27637433 38782166 4 34605534 44701744
H552 1 9 46797554 47142376 13 63520921 63719969
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
H552 1 9 46797554 47142376 13 63520921 63719969
B72 -1 5 232166 8088502 13 65619862 71445385

(14) H621:

B169 -1 10 50761406 53382755 19 29997899 32187321
H621 1 10 53448304 53456255 18 80565788 80606681
B170 -1 10 54012964 73635659 10 59308078 75301743

B244 -1 18 41660037 54333295 18 68830429 80544349
H621 1 10 53448304 53456255 18 80565788 80606681
B247 -1 18 66164603 77515070 18 80626223 91128280

(15) H650:

B175 -1 11 371944 1812080 7 132256401 133113643
H650 1 11 2384970 3247328 7 133442142 134184007
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
H650 1 11 2384970 3247328 7 133442142 134184007
B183 -1 11 71300640 73541758 7 134240159 135758348

(16) H766:

B202 -1 13 39492467 47782086 14 63468306 70533960
H766 -1 13 47822112 48154094 14 50343358 50699866
B203 1 13 48224187 50354776 14 52423915 54060401

B198 1 13 18187676 21343646 14 47784402 50243982
H766 -1 13 47822112 48154094 14 50343358 50699866
B199 -1 13 21641475 22861222 14 51596223 52392288

(17) H768:

B203 1 13 48224187 50354776 14 52423915 54060401
H768 1 13 50504326 51016719 8 20720874 20989705
B204 1 13 51194296 101505368 14 70539080 116001472

B126 1 8 297461 7385340 8 13927047 20676019
H768 1 13 50504326 51016719 8 20720874 20989705
B134 -1 8 37468035 41896742 8 21166936 24571771

(18) H825:

B214 1 15 30283818 46855367 2 114843098 128049851
H825 1 15 46908203 47495245 9 54546541 55052164
B215 -1 15 47519529 71896364 9 57376145 76368446

B186 -1 11 109647080 137397151 9 25957960 54501406
H825 1 15 46908203 47495245 9 54546541 55052164
B216 1 15 71984258 74282355 9 55648761 57407518

(19) H856:

B223 1 16 3315019 16052869 16 3157694 13950902
H856 1 16 16080367 16234384 7 35558201 35661655
B224 1 16 16510398 30601232 7 106321383 118165833

B256 -1 19 49444685 52717241 7 32900963 35524711
H856 1 16 16080367 16234384 7 35558201 35661655
B177 1 11 18551546 27288357 7 35680929 45375815

(20) H959:

B243 1 18 18405876 41210522 18 9944677 31718535
H959 1 18 41459347 41460109 9 54529057 54529946
B244 -1 18 41660037 54333295 18 68830429 80544349

B186 -1 11 109647080 137397151 9 25957960 54501406
H959 1 18 41459347 41460109 9 54529057 54529946
B216 1 15 71984258 74282355 9 55648761 57407518

(21) H1067:

B268 -1 22 25864689 28696987 11 3002827 5412772
H1067 -1 22 29331013 29340248 10 76589998 76598980
B269 1 22 30362135 32596104 8 72342157 74778783

B266 -1 22 20049057 21700324 10 75608420 76436129
H1067 -1 22 29331013 29340248 10 76589998 76598980
B263 -1 21 41703939 44590131 10 76644938 78878387

Potential hidden blocks that are isolated anchors

(1) chr1HI14864/chr7MI384+:

B4 1 1 59042296 67572651 4 92684571 101020121
chr1HI14864/chr7MI384+ 1 1 67703811 67703930 7 8907975 8908092
B5 -1 1 68550771 89930562 3 143216407 160561668

B257 1 19 55244810 58507181 7 3044586 6319388
chr1HI14864/chr7MI384+ 1 1 67703811 67703930 7 8907975 8908092
B255 -1 19 30721582 48998849 7 10994878 28800729

(2) chr1HI14864/chr7MI384-:

B4 1 1 59042296 67572651 4 92684571 101020121
chr1HI14864/chr7MI384- -1 1 67703811 67703930 7 8907975 8908092
B5 -1 1 68550771 89930562 3 143216407 160561668

B257 1 19 55244810 58507181 7 3044586 6319388
chr1HI14864/chr7MI384- -1 1 67703811 67703930 7 8907975 8908092
B255 -1 19 30721582 48998849 7 10994878 28800729

(3) chr2HI18469/chr10MI12458-:

B23 -1 2 74194189 86916548 6 72244385 84461154
chr2HI18469/chr10MI12458- -1 2 93428310 93428389 10 59203288 59203367
B24 -1 2 93583329 94910635 2 128084707 128642762

B27 1 2 106989746 107997641 10 58237574 59163852
chr2HI18469/chr10MI12458- -1 2 93428310 93428389 10 59203288 59203367
B170 -1 10 54012964 73635659 10 59308078 75301743

(4) chr2HI22918/chr1MI22845-:

B30 1 2 119901307 123756589 1 113697788 118004675
chr2HI22918/chr1MI22845- -1 2 123788010 123788324 1 113260088 113260408
B31 -1 2 124480451 126084332 18 31809356 32842104

B246 1 18 58183142 65698808 1 104356101 112970313
chr2HI22918/chr1MI22845- -1 2 123788010 123788324 1 113260088 113260408
B30 1 2 119901307 123756589 1 113697788 118004675

(5) chr2HI22920/chr1MI22846-:

B30 1 2 119901307 123756589 1 113697788 118004675
chr2HI22920/chr1MI22846- -1 2 123873070 123873166 1 113320013 113320109
B31 -1 2 124480451 126084332 18 31809356 32842104

B246 1 18 58183142 65698808 1 104356101 112970313
chr2HI22920/chr1MI22846- -1 2 123873070 123873166 1 113320013 113320109
B30 1 2 119901307 123756589 1 113697788 118004675

(6) chr2HI22923/chr1MI22847-:

B30 1 2 119901307 123756589 1 113697788 118004675
chr2HI22923/chr1MI22847- -1 2 123994308 123994503 1 113396247 113396437
B31 -1 2 124480451 126084332 18 31809356 32842104

B246 1 18 58183142 65698808 1 104356101 112970313
chr2HI22923/chr1MI22847- -1 2 123994308 123994503 1 113396247 113396437
B30 1 2 119901307 123756589 1 113697788 118004675

(7) chr3HI30084/chr3MI2356+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30084/chr3MI2356+ 1 3 145328526 145328668 3 20292878 20293020
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30084/chr3MI2356+ 1 3 145328526 145328668 3 20292878 20293020
B57 -1 3 167691902 175098003 3 20308062 28669246

(8) chr3HI30084/chr3MI2356-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30084/chr3MI2356- -1 3 145328526 145328668 3 20292878 20293020
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30084/chr3MI2356- -1 3 145328526 145328668 3 20292878 20293020
B57 -1 3 167691902 175098003 3 20308062 28669246

(9) chr3HI30087/chr3MI2355+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30087/chr3MI2355+ 1 3 145367441 145367573 3 20102382 20102514
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30087/chr3MI2355+ 1 3 145367441 145367573 3 20102382 20102514
B57 -1 3 167691902 175098003 3 20308062 28669246

(10) chr3HI30087/chr3MI2355-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30087/chr3MI2355- -1 3 145367441 145367573 3 20102382 20102514
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30087/chr3MI2355- -1 3 145367441 145367573 3 20102382 20102514
B57 -1 3 167691902 175098003 3 20308062 28669246

(11) chr3HI30094/chr3MI2354+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30094/chr3MI2354+ 1 3 145383406 145383550 3 20091185 20091329
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30094/chr3MI2354+ 1 3 145383406 145383550 3 20091185 20091329
B57 -1 3 167691902 175098003 3 20308062 28669246

(12) chr3HI30094/chr3MI2354-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30094/chr3MI2354- -1 3 145383406 145383550 3 20091185 20091329
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30094/chr3MI2354- -1 3 145383406 145383550 3 20091185 20091329
B57 -1 3 167691902 175098003 3 20308062 28669246

(13) chr3HI30096/chr3MI2353+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30096/chr3MI2353+ 1 3 145392235 145392457 3 20074469 20074683
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30096/chr3MI2353+ 1 3 145392235 145392457 3 20074469 20074683
B57 -1 3 167691902 175098003 3 20308062 28669246

(14) chr3HI30096/chr3MI2353-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30096/chr3MI2353- -1 3 145392235 145392457 3 20074469 20074683
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30096/chr3MI2353- -1 3 145392235 145392457 3 20074469 20074683
B57 -1 3 167691902 175098003 3 20308062 28669246

(15) chr3HI30103/chr13MI4727+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30103/chr13MI4727+ 1 3 145404827 145405203 13 29848140 29848518
B55 1 3 146018112 165098288 3 57817000 76646784

B89 -1 6 20123263 29058011 13 20566921 29761202
chr3HI30103/chr13MI4727+ 1 3 145404827 145405203 13 29848140 29848518
B88 1 6 166290 20118265 13 30055609 48119336

(16) chr3HI30103/chr13MI4727-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30103/chr13MI4727- -1 3 145404827 145405203 13 29848140 29848518
B55 1 3 146018112 165098288 3 57817000 76646784

B89 -1 6 20123263 29058011 13 20566921 29761202
chr3HI30103/chr13MI4727- -1 3 145404827 145405203 13 29848140 29848518
B88 1 6 166290 20118265 13 30055609 48119336

(17) chr3HI30108/chr3MI2347+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30108/chr3MI2347+ 1 3 145427194 145427445 3 20044595 20044840
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30108/chr3MI2347+ 1 3 145427194 145427445 3 20044595 20044840
B57 -1 3 167691902 175098003 3 20308062 28669246

(18) chr3HI30108/chr3MI2347-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30108/chr3MI2347- -1 3 145427194 145427445 3 20044595 20044840
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30108/chr3MI2347- -1 3 145427194 145427445 3 20044595 20044840
B57 -1 3 167691902 175098003 3 20308062 28669246

(19) chr3HI30128/chr3MI2338+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30128/chr3MI2338+ 1 3 145512374 145512585 3 19999930 20000141
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30128/chr3MI2338+ 1 3 145512374 145512585 3 19999930 20000141
B57 -1 3 167691902 175098003 3 20308062 28669246

(20) chr3HI30128/chr3MI2338-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30128/chr3MI2338- -1 3 145512374 145512585 3 19999930 20000141
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30128/chr3MI2338- -1 3 145512374 145512585 3 19999930 20000141
B57 -1 3 167691902 175098003 3 20308062 28669246

(21) chr3HI30129/chr13MI4741+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30129/chr13MI4741+ 1 3 145512791 145513125 13 29978901 29979216
B55 1 3 146018112 165098288 3 57817000 76646784

B89 -1 6 20123263 29058011 13 20566921 29761202
chr3HI30129/chr13MI4741+ 1 3 145512791 145513125 13 29978901 29979216
B88 1 6 166290 20118265 13 30055609 48119336

(22) chr3HI30129/chr13MI4741-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30129/chr13MI4741- -1 3 145512791 145513125 13 29978901 29979216
B55 1 3 146018112 165098288 3 57817000 76646784

B89 -1 6 20123263 29058011 13 20566921 29761202
chr3HI30129/chr13MI4741- -1 3 145512791 145513125 13 29978901 29979216
B88 1 6 166290 20118265 13 30055609 48119336

(23) chr3HI30138/chr13MI4742+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30138/chr13MI4742+ 1 3 145536483 145536765 13 30001865 30002150
B55 1 3 146018112 165098288 3 57817000 76646784

B89 -1 6 20123263 29058011 13 20566921 29761202
chr3HI30138/chr13MI4742+ 1 3 145536483 145536765 13 30001865 30002150
B88 1 6 166290 20118265 13 30055609 48119336

(24) chr3HI30138/chr13MI4742-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30138/chr13MI4742- -1 3 145536483 145536765 13 30001865 30002150
B55 1 3 146018112 165098288 3 57817000 76646784

B89 -1 6 20123263 29058011 13 20566921 29761202
chr3HI30138/chr13MI4742- -1 3 145536483 145536765 13 30001865 30002150
B88 1 6 166290 20118265 13 30055609 48119336

(25) chr3HI30141/chr13MI4743+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30141/chr13MI4743+ 1 3 145546547 145546701 13 30008452 30008591
B55 1 3 146018112 165098288 3 57817000 76646784

B89 -1 6 20123263 29058011 13 20566921 29761202
chr3HI30141/chr13MI4743+ 1 3 145546547 145546701 13 30008452 30008591
B88 1 6 166290 20118265 13 30055609 48119336

(26) chr3HI30141/chr13MI4743-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30141/chr13MI4743- -1 3 145546547 145546701 13 30008452 30008591
B55 1 3 146018112 165098288 3 57817000 76646784

B89 -1 6 20123263 29058011 13 20566921 29761202
chr3HI30141/chr13MI4743- -1 3 145546547 145546701 13 30008452 30008591
B88 1 6 166290 20118265 13 30055609 48119336

(27) chr3HI30213/chr3MI2261+:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30213/chr3MI2261+ 1 3 145940445 145940544 3 19703809 19703908
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30213/chr3MI2261+ 1 3 145940445 145940544 3 19703809 19703908
B57 -1 3 167691902 175098003 3 20308062 28669246

(28) chr3HI30213/chr3MI2261-:

B54 -1 3 126746637 144928556 9 90806074 106825155
chr3HI30213/chr3MI2261- -1 3 145940445 145940544 3 19703809 19703908
B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
chr3HI30213/chr3MI2261- -1 3 145940445 145940544 3 19703809 19703908
B57 -1 3 167691902 175098003 3 20308062 28669246

(29) chr3HI39375/chr16MI6178-:

B60 -1 3 191184828 193069530 16 31371477 32598395
chr3HI39375/chr16MI6178- -1 3 193131438 193131498 16 32835201 32835261
B61 1 3 193300446 194904324 16 30045772 31288254

B60 -1 3 191184828 193069530 16 31371477 32598395
chr3HI39375/chr16MI6178- -1 3 193131438 193131498 16 32835201 32835261
B52 -1 3 74208222 122080979 16 32974133 75988496

(30) chr3HI39376/chr16MI6176-:

B60 -1 3 191184828 193069530 16 31371477 32598395
chr3HI39376/chr16MI6176- -1 3 193132721 193132830 16 32823320 32823429
B61 1 3 193300446 194904324 16 30045772 31288254

B60 -1 3 191184828 193069530 16 31371477 32598395
chr3HI39376/chr16MI6176- -1 3 193132721 193132830 16 32823320 32823429
B52 -1 3 74208222 122080979 16 32974133 75988496

(31) chr3HI39393/chr16MI6177-:
 B60 -1 3 191184828 193069530 16 31371477 32598395
 chr3HI39393/chr16MI6177- -1 3 193223319 193223402 16 32833456 32833539
 B61 1 3 193300446 194904324 16 30045772 31288254

B60 -1 3 191184828 193069530 16 31371477 32598395
 chr3HI39393/chr16MI6177- -1 3 193223319 193223402 16 32833456 32833539
 B52 -1 3 74208222 122080979 16 32974133 75988496

(32) chr3HI39394/chr16MI6179-:
 B60 -1 3 191184828 193069530 16 31371477 32598395
 chr3HI39394/chr16MI6179- -1 3 193229462 193229621 16 32841184 32841347
 B61 1 3 193300446 194904324 16 30045772 31288254

B60 -1 3 191184828 193069530 16 31371477 32598395
 chr3HI39394/chr16MI6179- -1 3 193229462 193229621 16 32841184 32841347
 B52 -1 3 74208222 122080979 16 32974133 75988496

(33) chr6HI32244/chr1MI20956+:
 B102 -1 6 154660191 158342015 17 3003285 6034199
 chr6HI32244/chr1MI20956+ 1 6 158989884 158989998 1 94273968 94274083
 B103 -1 6 159545276 166889841 17 7030643 12454308

B40 -1 2 238854551 240612329 1 92884276 94273927
 chr6HI32244/chr1MI20956+ 1 6 158989884 158989998 1 94273968 94274083
 B76 1 5 97767743 101536374 1 94583168 97563176

(34) chr6HI32244/chr1MI20956-:
 B102 -1 6 154660191 158342015 17 3003285 6034199
 chr6HI32244/chr1MI20956- -1 6 158989884 158989998 1 94273968 94274083
 B103 -1 6 159545276 166889841 17 7030643 12454308

B40 -1 2 238854551 240612329 1 92884276 94273927
 chr6HI32244/chr1MI20956- -1 6 158989884 158989998 1 94273968 94274083
 B76 1 5 97767743 101536374 1 94583168 97563176

(35) chr6HI32335/chr17MI819+:
 B102 -1 6 154660191 158342015 17 3003285 6034199
 chr6HI32335/chr17MI819+ 1 6 159463064 159463303 17 6384013 6384255
 B103 -1 6 159545276 166889841 17 7030643 12454308

B102 -1 6 154660191 158342015 17 3003285 6034199
 chr6HI32335/chr17MI819+ 1 6 159463064 159463303 17 6384013 6384255
 B103 -1 6 159545276 166889841 17 7030643 12454308

(36) chr7HI10914/chr5MI26762+:
 B112 1 7 43555304 54768752 11 5584810 16912546
 chr7HI10914/chr5MI26762+ 1 7 55370033 55370182 5 127973592 127973742
 B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
 chr7HI10914/chr5MI26762+ 1 7 55370033 55370182 5 127973592 127973742
 B113 -1 7 65496178 70582019 5 128791601 132651725

(37) chr7HI10929/chr5MI26779+:

B112 1 7 43555304 54768752 11 5584810 16912546
chr7HI10929/chr5MI26779+ 1 7 55587123 55587262 5 128070239 128070375
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
chr7HI10929/chr5MI26779+ 1 7 55587123 55587262 5 128070239 128070375
B113 -1 7 65496178 70582019 5 128791601 132651725

(38) chr7HI10970/chr5MI26793+:

B112 1 7 43555304 54768752 11 5584810 16912546
chr7HI10970/chr5MI26793+ 1 7 63147707 63147878 5 128372289 128372445
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
chr7HI10970/chr5MI26793+ 1 7 63147707 63147878 5 128372289 128372445
B113 -1 7 65496178 70582019 5 128791601 132651725

(39) chr7HI10983/chr5MI26794+:

B112 1 7 43555304 54768752 11 5584810 16912546
chr7HI10983/chr5MI26794+ 1 7 64065874 64066060 5 128413645 128413831
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
chr7HI10983/chr5MI26794+ 1 7 64065874 64066060 5 128413645 128413831
B113 -1 7 65496178 70582019 5 128791601 132651725

(40) chr7HI10994/chr5MI26804+:

B112 1 7 43555304 54768752 11 5584810 16912546
chr7HI10994/chr5MI26804+ 1 7 64215924 64216198 5 128452151 128452404
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
chr7HI10994/chr5MI26804+ 1 7 64215924 64216198 5 128452151 128452404
B113 -1 7 65496178 70582019 5 128791601 132651725

(41) chr7HI11006/chr5MI26821+:

B112 1 7 43555304 54768752 11 5584810 16912546
chr7HI11006/chr5MI26821+ 1 7 64574170 64574259 5 128607501 128607590
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
chr7HI11006/chr5MI26821+ 1 7 64574170 64574259 5 128607501 128607590
B113 -1 7 65496178 70582019 5 128791601 132651725

(42) chr7HI11010/chr5MI26819+:

B112 1 7 43555304 54768752 11 5584810 16912546
chr7HI11010/chr5MI26819+ 1 7 64747862 64748028 5 128581937 128582100
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
chr7HI11010/chr5MI26819+ 1 7 64747862 64748028 5 128581937 128582100
B113 -1 7 65496178 70582019 5 128791601 132651725

(43) chr7HI11012/chr5MI26820+:
B112 1 7 43555304 54768752 11 5584810 16912546
chr7HI11012/chr5MI26820+ 1 7 64852517 64853039 5 128604040 128604555
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
chr7HI11012/chr5MI26820+ 1 7 64852517 64853039 5 128604040 128604555
B113 -1 7 65496178 70582019 5 128791601 132651725

(44) chr7HI11022/chr5MI26831+:
B112 1 7 43555304 54768752 11 5584810 16912546
chr7HI11022/chr5MI26831+ 1 7 65129851 65130026 5 128701439 128701614
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
chr7HI11022/chr5MI26831+ 1 7 65129851 65130026 5 128701439 128701614
B113 -1 7 65496178 70582019 5 128791601 132651725

(45) chr7HI11023/chr5MI26834+:
B112 1 7 43555304 54768752 11 5584810 16912546
chr7HI11023/chr5MI26834+ 1 7 65270186 65270401 5 128739221 128739427
B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
chr7HI11023/chr5MI26834+ 1 7 65270186 65270401 5 128739221 128739427
B113 -1 7 65496178 70582019 5 128791601 132651725

(46) chr7HI12347/chr5MI28163+:
B114 -1 7 71370997 73342666 5 132740372 133969586
chr7HI12347/chr5MI28163+ 1 7 73978166 73978345 5 134175462 134175637
B115 -1 7 75349329 83808903 5 10906478 19817355

B114 -1 7 71370997 73342666 5 132740372 133969586
chr7HI12347/chr5MI28163+ 1 7 73978166 73978345 5 134175462 134175637
B119 -1 7 98062835 100597327 5 134738623 137051964

(47) chr7HI12354/chr5MI28170+:
B114 -1 7 71370997 73342666 5 132740372 133969586
chr7HI12354/chr5MI28170+ 1 7 74079907 74080022 5 134291975 134292089
B115 -1 7 75349329 83808903 5 10906478 19817355

B114 -1 7 71370997 73342666 5 132740372 133969586
chr7HI12354/chr5MI28170+ 1 7 74079907 74080022 5 134291975 134292089
B119 -1 7 98062835 100597327 5 134738623 137051964

(48) chr7HI12414/chr5MI28230+:
B114 -1 7 71370997 73342666 5 132740372 133969586
chr7HI12414/chr5MI28230+ 1 7 74449347 74449436 5 134476059 134476148
B115 -1 7 75349329 83808903 5 10906478 19817355

B114 -1 7 71370997 73342666 5 132740372 133969586
chr7HI12414/chr5MI28230+ 1 7 74449347 74449436 5 134476059 134476148
B119 -1 7 98062835 100597327 5 134738623 137051964

(49) chr7HI12415/chr5MI28228+:
 B114 -1 7 71370997 73342666 5 132740372 133969586
 chr7HI12415/chr5MI28228+ 1 7 74449554 74449808 5 134473518 134473785
 B115 -1 7 75349329 83808903 5 10906478 19817355

B114 -1 7 71370997 73342666 5 132740372 133969586
 chr7HI12415/chr5MI28228+ 1 7 74449554 74449808 5 134473518 134473785
 B119 -1 7 98062835 100597327 5 134738623 137051964

(50) chr8HI720/chr14MI12178+:
 B126 1 8 297461 7385340 8 13927047 20676019
 chr8HI720/chr14MI12178+ 1 8 7441498 7441617 14 54081946 54082063
 B127 -1 8 8032078 9556982 8 33750059 35127206

B203 1 13 48224187 50354776 14 52423915 54060401
 chr8HI720/chr14MI12178+ 1 8 7441498 7441617 14 54081946 54082063
 B128 -1 8 9574409 11804604 14 54178729 55725318

(51) chr8HI15875/chr13MI12260+:
 B142 -1 8 85653020 96246458 4 9258417 19488529
 chr8HI15875/chr13MI12260+ 1 8 96246898 96246981 13 64379608 64379691
 B143 1 8 96459282 143732083 15 32888006 77422816

B152 1 9 88158123 90472665 13 61669473 63179589
 chr8HI15875/chr13MI12260+ 1 8 96246898 96246981 13 64379608 64379691
 B72 -1 5 232166 8088502 13 65619862 71445385

(52) chr9HI8298/chr13MI12205+:
 B146 1 9 27637433 38782166 4 34605534 44701744
 chr9HI8298/chr13MI12205+ 1 9 38964621 38965219 13 63279912 63280472
 B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
 chr9HI8298/chr13MI12205+ 1 9 38964621 38965219 13 63279912 63280472
 B72 -1 5 232166 8088502 13 65619862 71445385

(53) chr9HI8318/chr13MI12248+:
 B146 1 9 27637433 38782166 4 34605534 44701744
 chr9HI8318/chr13MI12248+ 1 9 45490278 45490467 13 63798552 63798736
 B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
 chr9HI8318/chr13MI12248+ 1 9 45490278 45490467 13 63798552 63798736
 B72 -1 5 232166 8088502 13 65619862 71445385

(54) chr9HI8323/chr13MI12246+:
 B146 1 9 27637433 38782166 4 34605534 44701744
 chr9HI8323/chr13MI12246+ 1 9 46250110 46250385 13 63787830 63788075
 B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
 chr9HI8323/chr13MI12246+ 1 9 46250110 46250385 13 63787830 63788075
 B72 -1 5 232166 8088502 13 65619862 71445385

(55) chr9HI8324/chr13MI12245+:

B146 1 9 27637433 38782166 4 34605534 44701744
chr9HI8324/chr13MI12245+ 1 9 46413813 46413982 13 63721334 63721509
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
chr9HI8324/chr13MI12245+ 1 9 46413813 46413982 13 63721334 63721509
B72 -1 5 232166 8088502 13 65619862 71445385

(56) chr9HI8325/chr13MI12242+:

B146 1 9 27637433 38782166 4 34605534 44701744
chr9HI8325/chr13MI12242+ 1 9 46491828 46491938 13 63665731 63665841
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
chr9HI8325/chr13MI12242+ 1 9 46491828 46491938 13 63665731 63665841
B72 -1 5 232166 8088502 13 65619862 71445385

(57) chr9HI8328/chr13MI12237+:

B146 1 9 27637433 38782166 4 34605534 44701744
chr9HI8328/chr13MI12237+ 1 9 46827636 46827728 13 63580960 63581052
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
chr9HI8328/chr13MI12237+ 1 9 46827636 46827728 13 63580960 63581052
B72 -1 5 232166 8088502 13 65619862 71445385

(58) chr9HI8340/chr13MI12225+:

B146 1 9 27637433 38782166 4 34605534 44701744
chr9HI8340/chr13MI12225+ 1 9 47516239 47516314 13 63400488 63400563
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
chr9HI8340/chr13MI12225+ 1 9 47516239 47516314 13 63400488 63400563
B72 -1 5 232166 8088502 13 65619862 71445385

(59) chr11HI357/chr7MI24896+:

B175 -1 11 371944 1812080 7 132256401 133113643
chr11HI357/chr7MI24896+ 1 11 3584785 3584902 7 134221163 134221280
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
chr11HI357/chr7MI24896+ 1 11 3584785 3584902 7 134221163 134221280
B183 -1 11 71300640 73541758 7 134240159 135758348

(60) chr11HI358/chr7MI24898+:

B175 -1 11 371944 1812080 7 132256401 133113643
chr11HI358/chr7MI24898+ 1 11 3590786 3591070 7 134226661 134226947
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
chr11HI358/chr7MI24898+ 1 11 3590786 3591070 7 134226661 134226947
B183 -1 11 71300640 73541758 7 134240159 135758348

(61) chr11HI360/chr7MI24897+:
 B175 -1 11 371944 1812080 7 132256401 133113643
 chr11HI360/chr7MI24897+ 1 11 3638158 3638423 7 134223123 134223394
 B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
 chr11HI360/chr7MI24897+ 1 11 3638158 3638423 7 134223123 134223394
 B183 -1 11 71300640 73541758 7 134240159 135758348

(62) chr11HI19279/chr8MI14047+:
 B185 -1 11 92192136 109629127 9 3257414 18376264
 chr11HI19279/chr8MI14047+ 1 11 109642659 109642802 8 74786558 74786700
 B186 -1 11 109647080 137397151 9 25957960 54501406

B269 1 22 30362135 32596104 8 72342157 74778783
 chr11HI19279/chr8MI14047+ 1 11 109642659 109642802 8 74786558 74786700
 B69 -1 4 142109321 151684203 8 74840942 83153812

(63) chr11HI19279/chr8MI14047-:
 B185 -1 11 92192136 109629127 9 3257414 18376264
 chr11HI19279/chr8MI14047- -1 11 109642659 109642802 8 74786558 74786700
 B186 -1 11 109647080 137397151 9 25957960 54501406

B269 1 22 30362135 32596104 8 72342157 74778783
 chr11HI19279/chr8MI14047- -1 11 109642659 109642802 8 74786558 74786700
 B69 -1 4 142109321 151684203 8 74840942 83153812

(64) chr13HI5778/chr8MI2917+:
 B203 1 13 48224187 50354776 14 52423915 54060401
 chr13HI5778/chr8MI2917+ 1 13 50436164 50436333 8 20699027 20699189
 B204 1 13 51194296 101505368 14 70539080 116001472

B126 1 8 297461 7385340 8 13927047 20676019
 chr13HI5778/chr8MI2917+ 1 13 50436164 50436333 8 20699027 20699189
 B134 -1 8 37468035 41896742 8 21166936 24571771

(65) chr13HI5855/chr8MI2994+:
 B203 1 13 48224187 50354776 14 52423915 54060401
 chr13HI5855/chr8MI2994+ 1 13 51022276 51022413 8 20994327 20994472
 B204 1 13 51194296 101505368 14 70539080 116001472

B126 1 8 297461 7385340 8 13927047 20676019
 chr13HI5855/chr8MI2994+ 1 13 51022276 51022413 8 20994327 20994472
 B134 -1 8 37468035 41896742 8 21166936 24571771

(66) chr15HI1222/chr7MI6604-:
 B213 -1 15 28154602 29941847 2 113175622 114776461
 chr15HI1222/chr7MI6604- -1 15 30221899 30222112 7 53916088 53916288
 B214 1 15 30283818 46855367 2 114843098 128049851

B212 1 15 26522378 27825905 7 52481896 53745919
 chr15HI1222/chr7MI6604- -1 15 30221899 30222112 7 53916088 53916288
 B211 1 15 24758877 25909266 7 53990869 55045944

(67) chr15HI13206/chr7MI10920-:

B219 1 15 79014608 80632267 7 70854910 72326056
chr15HI13206/chr7MI10920- -1 15 81394898 81395062 7 70524595 70524772
B220 1 15 81971868 87927149 7 64852001 70357616

B220 1 15 81971868 87927149 7 64852001 70357616
chr15HI13206/chr7MI10920- -1 15 81394898 81395062 7 70524595 70524772
B219 1 15 79014608 80632267 7 70854910 72326056

(68) chr16HI5760/chr6MI13529-:

B224 1 16 16510398 30601232 7 106321383 118165833
chr16HI5760/chr6MI13529- -1 16 30945768 30946057 6 57383354 57383639
B225 1 16 37104394 60677388 8 84966092 107402587

B109 1 7 22898169 32723118 6 49363444 57308117
chr16HI5760/chr6MI13529- -1 16 30945768 30946057 6 57383354 57383639
B65 1 4 89180085 95649989 6 59055799 65685290

(69) chr16HI5766/chr7MI415+:

B224 1 16 16510398 30601232 7 106321383 118165833
chr16HI5766/chr7MI415+ 1 16 32408948 32409031 7 9211522 9211605
B225 1 16 37104394 60677388 8 84966092 107402587

B257 1 19 55244810 58507181 7 3044586 6319388
chr16HI5766/chr7MI415+ 1 16 32408948 32409031 7 9211522 9211605
B255 -1 19 30721582 48998849 7 10994878 28800729

(70) chr16HI5766/chr7MI415-:

B224 1 16 16510398 30601232 7 106321383 118165833
chr16HI5766/chr7MI415- -1 16 32408948 32409031 7 9211522 9211605
B225 1 16 37104394 60677388 8 84966092 107402587

B257 1 19 55244810 58507181 7 3044586 6319388
chr16HI5766/chr7MI415- -1 16 32408948 32409031 7 9211522 9211605
B255 -1 19 30721582 48998849 7 10994878 28800729

(71) chr16HI5775/chr7MI409+:

B224 1 16 16510398 30601232 7 106321383 118165833
chr16HI5775/chr7MI409+ 1 16 36552286 36552391 7 9151922 9152027
B225 1 16 37104394 60677388 8 84966092 107402587

B257 1 19 55244810 58507181 7 3044586 6319388
chr16HI5775/chr7MI409+ 1 16 36552286 36552391 7 9151922 9152027
B255 -1 19 30721582 48998849 7 10994878 28800729

(72) chr16HI5775/chr7MI409-:

B224 1 16 16510398 30601232 7 106321383 118165833
chr16HI5775/chr7MI409- -1 16 36552286 36552391 7 9151922 9152027
B225 1 16 37104394 60677388 8 84966092 107402587

B257 1 19 55244810 58507181 7 3044586 6319388
chr16HI5775/chr7MI409- -1 16 36552286 36552391 7 9151922 9152027
B255 -1 19 30721582 48998849 7 10994878 28800729

(73) chr16HI5776/chr6MI13596-:
 B224 1 16 16510398 30601232 7 106321383 118165833
 chr16HI5776/chr6MI13596- -1 16 36590761 36590828 6 58565300 58565367
 B225 1 16 37104394 60677388 8 84966092 107402587

B109 1 7 22898169 32723118 6 49363444 57308117
 chr16HI5776/chr6MI13596- -1 16 36590761 36590828 6 58565300 58565367
 B65 1 4 89180085 95649989 6 59055799 65685290

(74) chr16HI5783/chr16MI2395+:
 B224 1 16 16510398 30601232 7 106321383 118165833
 chr16HI5783/chr16MI2395+ 1 16 36948465 36948546 16 14103421 14103501
 B225 1 16 37104394 60677388 8 84966092 107402587

B223 1 16 3315019 16052869 16 3157694 13950902
 chr16HI5783/chr16MI2395+ 1 16 36948465 36948546 16 14103421 14103501
 B135 -1 8 47438619 48888993 16 14138531 15608082

(75) chr16HI5783/chr16MI2395-:
 B224 1 16 16510398 30601232 7 106321383 118165833
 chr16HI5783/chr16MI2395- -1 16 36948465 36948546 16 14103421 14103501
 B225 1 16 37104394 60677388 8 84966092 107402587

B223 1 16 3315019 16052869 16 3157694 13950902
 chr16HI5783/chr16MI2395- -1 16 36948465 36948546 16 14103421 14103501
 B135 -1 8 47438619 48888993 16 14138531 15608082

(76) chr17HI4181/chr6MI25637+:
 B231 1 17 17258267 20380049 11 60197321 62644618
 chr17HI4181/chr6MI25637+ 1 17 20424845 20424949 6 119323079 119323183
 B232 -1 17 25413494 28606967 11 77360300 79941136

B167 -1 10 42582827 45461049 6 117063610 119191868
 chr17HI4181/chr6MI25637+ 1 17 20424845 20424949 6 119323079 119323183
 B187 -1 12 47544 2629892 6 119423515 122264710

(77) chr17HI4181/chr6MI25637-:
 B231 1 17 17258267 20380049 11 60197321 62644618
 chr17HI4181/chr6MI25637- -1 17 20424845 20424949 6 119323079 119323183
 B232 -1 17 25413494 28606967 11 77360300 79941136

B167 -1 10 42582827 45461049 6 117063610 119191868
 chr17HI4181/chr6MI25637- -1 17 20424845 20424949 6 119323079 119323183
 B187 -1 12 47544 2629892 6 119423515 122264710

(78) chr19HI1472/chr17MI5224+:
 B250 1 19 7221494 8277183 8 3050238 4438387
 chr19HI1472/chr17MI5224+ 1 19 8689138 8689227 17 32641110 32641196
 B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
 chr19HI1472/chr17MI5224+ 1 19 8689138 8689227 17 32641110 32641196
 B90 -1 6 29575435 33309207 17 33016801 36305724

(79) chr19HI1472/chr17MI5224-:

B250 1 19 7221494 8277183 8 3050238 4438387
chr19HI1472/chr17MI5224- -1 19 8689138 8689227 17 32641110 32641196
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
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B90 -1 6 29575435 33309207 17 33016801 36305724

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B250 1 19 7221494 8277183 8 3050238 4438387
chr19HI1480/chr17MI5262+ 1 19 8731925 8732602 17 32797682 32798358
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
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chr19HI1480/chr17MI5262- -1 19 8731925 8732602 17 32797682 32798358
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
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B90 -1 6 29575435 33309207 17 33016801 36305724

(82) chr19HI1497/chr17MI5247+:

B250 1 19 7221494 8277183 8 3050238 4438387
chr19HI1497/chr17MI5247+ 1 19 8780249 8780323 17 32755054 32755128
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
chr19HI1497/chr17MI5247+ 1 19 8780249 8780323 17 32755054 32755128
B90 -1 6 29575435 33309207 17 33016801 36305724

(83) chr19HI1497/chr17MI5247-:

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chr19HI1497/chr17MI5247- -1 19 8780249 8780323 17 32755054 32755128
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
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B90 -1 6 29575435 33309207 17 33016801 36305724

(84) chr19HI1510/chr7MI412+:

B250 1 19 7221494 8277183 8 3050238 4438387
chr19HI1510/chr7MI412+ 1 19 8935548 8935919 7 9160042 9160412
B251 1 19 10042462 11820093 9 20698640 22209084

B257 1 19 55244810 58507181 7 3044586 6319388
chr19HI1510/chr7MI412+ 1 19 8935548 8935919 7 9160042 9160412
B255 -1 19 30721582 48998849 7 10994878 28800729

(85) chr19HI1510/chr7MI412-:

B250 1 19 7221494 8277183 8 3050238 4438387
chr19HI1510/chr7MI412- -1 19 8935548 8935919 7 9160042 9160412
B251 1 19 10042462 11820093 9 20698640 22209084

B257 1 19 55244810 58507181 7 3044586 6319388
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(86) chr19HI2015/chr17MI5208+:

B251 1 19 10042462 11820093 9 20698640 22209084
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B252 -1 19 12888823 15027656 8 83263813 84801237

B262 1 21 40038764 41625800 17 30171030 31278245
chr19HI2015/chr17MI5208+ 1 19 12608329 12608474 17 32224517 32224662
B90 -1 6 29575435 33309207 17 33016801 36305724

(87) chr19HI2015/chr17MI5208-:

B251 1 19 10042462 11820093 9 20698640 22209084
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B252 -1 19 12888823 15027656 8 83263813 84801237

B262 1 21 40038764 41625800 17 30171030 31278245
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B90 -1 6 29575435 33309207 17 33016801 36305724

(88) chr19HI2461/chr16MI2641+:

B252 -1 19 12888823 15027656 8 83263813 84801237
chr19HI2461/chr16MI2641+ 1 19 15418586 15418750 16 16140736 16140897
B253 -1 19 17680030 20268144 8 69189072 71105965

B135 -1 8 47438619 48888993 16 14138531 15608082
chr19HI2461/chr16MI2641+ 1 19 15418586 15418750 16 16140736 16140897
B265 -1 22 16258382 19028891 16 16348074 18445424

(89) chr22HI2420/chr10MI16087-:

B268 -1 22 25864689 28696987 11 3002827 5412772
chr22HI2420/chr10MI16087- -1 22 29202147 29202247 10 76625645 76625745
B269 1 22 30362135 32596104 8 72342157 74778783

B266 -1 22 20049057 21700324 10 75608420 76436129
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B263 -1 21 41703939 44590131 10 76644938 78878387

(90) chrXHI10219/chrXMI3236-:

B276 -1 X 50043614 52060063 X 127515295 129338565
chrXHI10219/chrXMI3236- -1 X 52103660 52104007 X 18396337 18396687
B277 1 X 52452334 53848687 X 129944210 130870771

B273 1 X 35727410 46666299 X 6492463 18249797
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B281 1 X 110065695 148681251 X 18632704 58648190

Potential hidden blocks that are ensembl orthologous gene pairs

- (1) [ENSG00000170893/ENSMUSG00000005892](#):
B53 -1 3 122498736 125870910 6 88567410 91394019
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B54 -1 3 126746637 144928556 9 90806074 106825155

B42 1 3 12870112 15068439 6 91409248 92992110
ENSG00000170893/ENSMUSG00000005892 -1 3 126462647 126465864 6 93021891
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B51 1 3 62881937 73671271 6 93068825 104101354
- (2) [ENSG00000144891/ENSMUSG00000027625](#):
B54 -1 3 126746637 144928556 9 90806074 106825155
ENSG00000144891/ENSMUSG00000027625 1 3 145407989 145409065 3 20052677
20053753
B55 1 3 146018112 165098288 3 57817000 76646784

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B57 -1 3 167691902 175098003 3 20308062 28669246
- (3) [ENSG00000153002/ENSMUSG00000011463](#):
B54 -1 3 126746637 144928556 9 90806074 106825155
ENSG00000153002/ENSMUSG00000011463 1 3 145494773 145527140 3 20000002
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B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
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B57 -1 3 167691902 175098003 3 20308062 28669246
- (4) [ENSG00000163751/ENSMUSG0000001865](#):
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B55 1 3 146018112 165098288 3 57817000 76646784

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- (5) [ENSG00000163754/ENSMUSG00000019528](#):
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B55 1 3 146018112 165098288 3 57817000 76646784

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B57 -1 3 167691902 175098003 3 20308062 28669246
- (6) [ENSG00000071794/ENSMUSG00000002428](#):
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B57 -1 3 167691902 175098003 3 20308062 28669246
- (7) [ENSG00000163755/ENSMUSG00000027615](#):
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B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
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B57 -1 3 167691902 175098003 3 20308062 28669246
- (8) [ENSG00000047457/ENSMUSG00000003617](#):
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B55 1 3 146018112 165098288 3 57817000 76646784

B139 1 8 63445049 66455796 3 15921269 19629727
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B57 -1 3 167691902 175098003 3 20308062 28669246
- (9) [ENSG00000163756/ENSMUSG00000003617](#):
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B139 1 8 63445049 66455796 3 15921269 19629727
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B57 -1 3 167691902 175098003 3 20308062 28669246

(10) [ENSG00000114473/ENSMUSG00000035578](#):
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B61 1 3 193300446 194904324 16 30045772 31288254

B60 -1 3 191184828 193069530 16 31371477 32598395
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B52 -1 3 74208222 122080979 16 32974133 75988496

(11) [ENSG00000164209/ENSMUSG00000024259](#):
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ENSG00000164209/ENSMUSG00000024259 1 5 109697926 109721656 18 31756372
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B78 1 5 109922486 111890773 18 32887608 34577096

B243 1 18 18405876 41210522 18 9944677 31718535
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B31 -1 2 124480451 126084332 18 31809356 32842104

(12) [ENSG00000159279/ENSMUSG00000038071](#):
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ENSG00000159279/ENSMUSG00000038071 1 5 137018935 137019804 18 44451878
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B82 1 5 137101134 147649159 18 34587903 44275299

B82 1 5 137101134 147649159 18 34587903 44275299
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B79 1 5 111908709 129884865 18 44557280 60465570

(13) [ENSG00000120729/ENSMUSG00000024471](#):
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ENSG00000120729/ENSMUSG00000024471 1 5 137078595 137098575 18 44510639
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(14) [ENSG00000175021/ENSMUSG00000033516](#):
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ENSG00000175021/ENSMUSG00000033516 1 6 159030024 159075562 17 6658988
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B103 -1 6 159545276 166889841 17 7030643 12454308

B102 -1 6 154660191 158342015 17 3003285 6034199
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B103 -1 6 159545276 166889841 17 7030643 12454308

(15) [ENSG00000164694/ENSMUSG00000023857](#):
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ENSG00000164694/ENSMUSG00000023857 1 6 159090396 159132534 17 6641961
6645925
B103 -1 6 159545276 166889841 17 7030643 12454308

B102 -1 6 154660191 158342015 17 3003285 6034199
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B103 -1 6 159545276 166889841 17 7030643 12454308

(16) [ENSG00000136244/ENSMUSG00000025746](#):
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ENSG00000136244/ENSMUSG00000025746 1 7 22409302 22414098 5 28513482
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B109 1 7 22898169 32723118 6 49363444 57308117

B124 1 7 148804843 155395463 5 22707921 28257720
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(17) [ENSG00000122550/ENSMUSG00000028986](#):
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B109 1 7 22898169 32723118 6 49363444 57308117

B120 1 7 100871379 103679611 5 19857400 22263918
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(18) [ENSG00000136243/ENSMUSG00000038345](#):
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(19) [ENSG00000154999/ENSMUSG00000034211](#):
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B197 1 12 120431830 130562871 5 120717463 127828429
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(20) [ENSG00000146729/ENSMUSG00000029432](#):
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B197 1 12 120431830 130562871 5 120717463 127828429
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(21) [ENSG00000146731/ENSMUSG00000029447](#):
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B197 1 12 120431830 130562871 5 120717463 127828429
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(22) [ENSG00000129103/ENSMUSG00000025538](#):
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B197 1 12 120431830 130562871 5 120717463 127828429
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(23) [ENSG00000174890/ENSMUSG00000034228](#):
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B197 1 12 120431830 130562871 5 120717463 127828429
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(24) [ENSG00000164681/ENSMUSG00000034153](#):
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B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
ENSG00000164681/ENSMUSG00000034153 1 7 64053641 64059786 5 128402635
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B113 -1 7 65496178 70582019 5 128791601 132651725

(25) [ENSG00000169910/ENSMUSG00000025533](#):
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B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
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B113 -1 7 65496178 70582019 5 128791601 132651725

(26) [ENSG00000126522/ENSMUSG00000025532](#):
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B197 1 12 120431830 130562871 5 120717463 127828429
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(27) [ENSG00000169902/ENSMUSG00000034118](#):
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B197 1 12 120431830 130562871 5 120717463 127828429
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B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
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(30) [ENSG00000106609/ENSMUSG00000025338](#):
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B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
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B113 -1 7 65496178 70582019 5 128791601 132651725

B197 1 12 120431830 130562871 5 120717463 127828429
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(32) [ENSG00000005486/ENSMUSG00000039917](#):
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B115 -1 7 75349329 83808903 5 10906478 19817355

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(33) [ENSG00000127948/ENSMUSG00000005514](#):
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B115 -1 7 75349329 83808903 5 10906478 19817355

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B119 -1 7 98062835 100597327 5 134738623 137051964

(34) [ENSG00000146701/ENSMUSG00000019179](#):
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B115 -1 7 75349329 83808903 5 10906478 19817355

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(35) [ENSG00000106211/ENSMUSG00000004951](#):
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(36) [ENSG00000091073/ENSMUSG00000004947](#):
B114 -1 7 71370997 73342666 5 132740372 133969586
ENSG00000091073/ENSMUSG00000004947 1 7 74626601 74670856 5 134600656
134638938
B115 -1 7 75349329 83808903 5 10906478 19817355

B114 -1 7 71370997 73342666 5 132740372 133969586
ENSG00000091073/ENSMUSG00000004947 1 7 74626601 74670856 5 134600656
134638938
B119 -1 7 98062835 100597327 5 134738623 137051964

(37) [ENSG00000091070/ENSMUSG00000004947](#):
B114 -1 7 71370997 73342666 5 132740372 133969586
ENSG00000091070/ENSMUSG00000004947 1 7 75124715 75216646 5 134600656
134638938
B115 -1 7 75349329 83808903 5 10906478 19817355

B114 -1 7 71370997 73342666 5 132740372 133969586
ENSG00000091070/ENSMUSG00000004947 1 7 75124715 75216646 5 134600656
134638938
B119 -1 7 98062835 100597327 5 134738623 137051964

(38) [ENSG00000156471/ENSMUSG00000021518](#):
B142 -1 8 85653020 96246458 4 9258417 19488529
ENSG00000156471/ENSMUSG00000021518 1 8 96283221 96355837 13 64424013
64488784
B143 1 8 96459282 143732083 15 32888006 77422816

B152 1 9 88158123 90472665 13 61669473 63179589
ENSG00000156471/ENSMUSG00000021518 1 8 96283221 96355837 13 64424013
64488784
B72 -1 5 232166 8088502 13 65619862 71445385

(39) [ENSG00000154529/ENSMUSG00000033063](#):
B146 1 9 27637433 38782166 4 34605534 44701744
ENSG00000154529/ENSMUSG00000033063 1 9 46391433 46526649 13 63578015
63736165
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
ENSG00000154529/ENSMUSG00000033063 1 9 46391433 46526649 13 63578015
63736165
B72 -1 5 232166 8088502 13 65619862 71445385

(40) [ENSG00000174988/ENSMUSG00000033063](#):
B146 1 9 27637433 38782166 4 34605534 44701744
ENSG00000174988/ENSMUSG00000033063 1 9 46802978 46806999 13 63578015
63736165
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
ENSG00000174988/ENSMUSG00000033063 1 9 46802978 46806999 13 63578015
63736165
B72 -1 5 232166 8088502 13 65619862 71445385

(41) [ENSG00000174985/ENSMUSG00000033063](#):
B146 1 9 27637433 38782166 4 34605534 44701744
ENSG00000174985/ENSMUSG00000033063 1 9 46821124 46833014 13 63578015
63736165
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
ENSG00000174985/ENSMUSG00000033063 1 9 46821124 46833014 13 63578015
63736165
B72 -1 5 232166 8088502 13 65619862 71445385

(42) [ENSG00000106714/ENSMUSG00000033063](#):
B146 1 9 27637433 38782166 4 34605534 44701744
ENSG00000106714/ENSMUSG00000033063 1 9 47106016 47321708 13 63578015
63736165
B147 -1 9 62064465 73833427 19 13594243 24464344

B152 1 9 88158123 90472665 13 61669473 63179589
ENSG00000106714/ENSMUSG00000033063 1 9 47106016 47321708 13 63578015
63736165
B72 -1 5 232166 8088502 13 65619862 71445385

(43) [ENSG00000172092/ENSMUSG00000009248](#):
B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000172092/ENSMUSG00000009248 1 11 2271806 2272384 7 133400531
133402933
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000172092/ENSMUSG00000009248 1 11 2271806 2272384 7 133400531
133402933
B183 -1 11 71300640 73541758 7 134240159 135758348

(44) [ENSG00000064201/ENSMUSG00000000244](#):
B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000064201/ENSMUSG00000000244 1 11 2384830 2400920 7 133442143
133456285
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000064201/ENSMUSG00000000244 1 11 2384830 2400920 7 133442143
133456285
B183 -1 11 71300640 73541758 7 134240159 135758348

(45) [ENSG00000110651/ENSMUSG00000037706](#):
B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000110651/ENSMUSG00000037706 1 11 2460150 2480226 7 133489302
133504176
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000110651/ENSMUSG00000037706 1 11 2460150 2480226 7 133489302
133504176
B183 -1 11 71300640 73541758 7 134240159 135758348

(46) [ENSG00000172067/ENSMUSG00000037699](#):
B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000172067/ENSMUSG00000037699 1 11 2483604 2486702 7 133505605
133507339
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000172067/ENSMUSG00000037699 1 11 2483604 2486702 7 133505605
133507339
B183 -1 11 71300640 73541758 7 134240159 135758348

(47) [ENSG00000053918/ENSMUSG00000009545](#):
B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000053918/ENSMUSG00000009545 1 11 2527929 2929787 7 133544272
133863920
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000053918/ENSMUSG00000009545 1 11 2527929 2929787 7 133544272
133863920
B183 -1 11 71300640 73541758 7 134240159 135758348

(48) [ENSG00000110628/ENSMUSG00000000154](#):
B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000110628/ENSMUSG00000000154 1 11 2981554 3006932 7 133912581
133940657
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000110628/ENSMUSG00000000154 1 11 2981554 3006932 7 133912581
133940657
B183 -1 11 71300640 73541758 7 134240159 135758348

(49) [ENSG00000174615/ENSMUSG00000009545](#):
B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000174615/ENSMUSG00000009545 1 11 3257553 3266744 7 133544272
133863920
B176 1 11 4160230 18439115 7 91904633 106151720

B175 -1 11 371944 1812080 7 132256401 133113643
ENSG00000174615/ENSMUSG00000009545 1 11 3257553 3266744 7 133544272
133863920
B183 -1 11 71300640 73541758 7 134240159 135758348

(50) [ENSG00000102738/ENSMUSG00000031533](#):
B201 -1 13 32474473 39232840 3 52717637 57680022
ENSG00000102738/ENSMUSG00000031533 -1 13 39289770 39331639 8 21140858
21158732
B202 -1 13 39492467 47782086 14 63468306 70533960

B126 1 8 297461 7385340 8 13927047 20676019
ENSG00000102738/ENSMUSG00000031533 -1 13 39289770 39331639 8 21140858
21158732
B134 -1 8 37468035 41896742 8 21166936 24571771

(51) [ENSG00000102547/ENSMUSG00000021981](#):
B202 -1 13 39492467 47782086 14 63468306 70533960
ENSG00000102547/ENSMUSG00000021981 -1 13 47883903 47975458 14 50561762
50650010
B203 1 13 48224187 50354776 14 52423915 54060401

B198 1 13 18187676 21343646 14 47784402 50243982
ENSG00000102547/ENSMUSG00000021981 -1 13 47883903 47975458 14 50561762
50650010
B199 -1 13 21641475 22861222 14 51596223 52392288

(52) [ENSG00000136144/ENSMUSG00000021979](#):
B202 -1 13 39492467 47782086 14 63468306 70533960
ENSG00000136144/ENSMUSG00000021979 -1 13 48106045 48159652 14 50340896
50361944
B203 1 13 48224187 50354776 14 52423915 54060401

B198 1 13 18187676 21343646 14 47784402 50243982
ENSG00000136144/ENSMUSG00000021979 -1 13 48106045 48159652 14 50340896
50361944
B199 -1 13 21641475 22861222 14 51596223 52392288

(53) [ENSG00000136144/ENSMUSG00000035469](#):
B202 -1 13 39492467 47782086 14 63468306 70533960
ENSG00000136144/ENSMUSG00000035469 -1 13 48106045 48159652 14 50365796
50374818
B203 1 13 48224187 50354776 14 52423915 54060401

B198 1 13 18187676 21343646 14 47784402 50243982
ENSG00000136144/ENSMUSG00000035469 -1 13 48106045 48159652 14 50365796
50374818
B199 -1 13 21641475 22861222 14 51596223 52392288

(54) [ENSG00000123171/ENSMUSG00000017049](#):
B203 1 13 48224187 50354776 14 52423915 54060401
ENSG00000123171/ENSMUSG00000017049 1 13 50436105 50440331 8 20699120
20703362
B204 1 13 51194296 101505368 14 70539080 116001472

B126 1 8 297461 7385340 8 13927047 20676019
ENSG00000123171/ENSMUSG00000017049 1 13 50436105 50440331 8 20699120
20703362
B134 -1 8 37468035 41896742 8 21166936 24571771

(55) [ENSG00000136108/ENSMUSG00000037725](#):
B203 1 13 48224187 50354776 14 52423915 54060401
ENSG00000136108/ENSMUSG00000037725 1 13 50997127 51018192 8 20897324
20914418
B204 1 13 51194296 101505368 14 70539080 116001472

B126 1 8 297461 7385340 8 13927047 20676019
ENSG00000136108/ENSMUSG00000037725 1 13 50997127 51018192 8 20897324
20914418
B134 -1 8 37468035 41896742 8 21166936 24571771

(56) [ENSG00000173945/ENSMUSG00000031481](#):
B203 1 13 48224187 50354776 14 52423915 54060401
ENSG00000173945/ENSMUSG00000031481 1 13 51062641 51126274 8 21013955
21100660
B204 1 13 51194296 101505368 14 70539080 116001472

B126 1 8 297461 7385340 8 13927047 20676019
ENSG00000173945/ENSMUSG00000031481 1 13 51062641 51126274 8 21013955
21100660
B134 -1 8 37468035 41896742 8 21166936 24571771

(57) [ENSG00000174108/ENSMUSG00000032273](#):
B214 1 15 30283818 46855367 2 114843098 128049851
ENSG00000174108/ENSMUSG00000032273 -1 15 46907442 46907999 9 54545411
54545956
B215 -1 15 47519529 71896364 9 57376145 76368446

B186 -1 11 109647080 137397151 9 25957960 54501406
ENSG00000174108/ENSMUSG00000032273 -1 15 46907442 46907999 9 54545411
54545956
B216 1 15 71984258 74282355 9 55648761 57407518

(58) [ENSG00000137869/ENSMUSG00000032274](#):
B214 1 15 30283818 46855367 2 114843098 128049851
ENSG00000137869/ENSMUSG00000032274 -1 15 47059024 47173476 9 54684011
54711904
B215 -1 15 47519529 71896364 9 57376145 76368446

B186 -1 11 109647080 137397151 9 25957960 54501406
ENSG00000137869/ENSMUSG00000032274 -1 15 47059024 47173476 9 54684011
54711904
B216 1 15 71984258 74282355 9 55648761 57407518

(59) [ENSG00000104093/ENSMUSG00000041602](#):
B214 1 15 30283818 46855367 2 114843098 128049851
ENSG00000104093/ENSMUSG00000041602 -1 15 47298244 47472304 9 54892466
54895134
B215 -1 15 47519529 71896364 9 57376145 76368446

B186 -1 11 109647080 137397151 9 25957960 54501406
ENSG00000104093/ENSMUSG00000041602 -1 15 47298244 47472304 9 54892466
54895134
B216 1 15 71984258 74282355 9 55648761 57407518

(60) [ENSG00000104093/ENSMUSG00000041547](#):
B214 1 15 30283818 46855367 2 114843098 128049851
ENSG00000104093/ENSMUSG00000041547 -1 15 47298244 47472304 9 54901501
54910683
B215 -1 15 47519529 71896364 9 57376145 76368446

B186 -1 11 109647080 137397151 9 25957960 54501406
ENSG00000104093/ENSMUSG00000041547 -1 15 47298244 47472304 9 54901501
54910683
B216 1 15 71984258 74282355 9 55648761 57407518

(61) [ENSG00000104093/ENSMUSG00000041363](#):
B214 1 15 30283818 46855367 2 114843098 128049851
ENSG00000104093/ENSMUSG00000041363 -1 15 47298244 47472304 9 54926950
54933702
B215 -1 15 47519529 71896364 9 57376145 76368446

B186 -1 11 109647080 137397151 9 25957960 54501406
ENSG00000104093/ENSMUSG00000041363 -1 15 47298244 47472304 9 54926950
54933702
B216 1 15 71984258 74282355 9 55648761 57407518

(62) [ENSG00000104093/ENSMUSG00000041268](#):
B214 1 15 30283818 46855367 2 114843098 128049851
ENSG00000104093/ENSMUSG00000041268 -1 15 47298244 47472304 9 54953243
54999454
B215 -1 15 47519529 71896364 9 57376145 76368446

B186 -1 11 109647080 137397151 9 25957960 54501406
ENSG00000104093/ENSMUSG00000041268 -1 15 47298244 47472304 9 54953243
54999454
B216 1 15 71984258 74282355 9 55648761 57407518

(63) [ENSG00000136376/ENSMUSG00000025722](#):
B219 1 15 79014608 80632267 7 70854910 72326056
ENSG00000136376/ENSMUSG00000025722 -1 15 81254705 81266080 7 70393316
70403550
B220 1 15 81971868 87927149 7 64852001 70357616

B220 1 15 81971868 87927149 7 64852001 70357616
ENSG00000136376/ENSMUSG00000025722 -1 15 81254705 81266080 7 70393316
70403550
B219 1 15 79014608 80632267 7 70854910 72326056

(64) [ENSG00000174064/ENSMUSG00000025723](#):
B219 1 15 79014608 80632267 7 70854910 72326056
ENSG00000174064/ENSMUSG00000025723 -1 15 81266935 81269997 7 70404552
70407352
B220 1 15 81971868 87927149 7 64852001 70357616

B220 1 15 81971868 87927149 7 64852001 70357616
ENSG00000174064/ENSMUSG00000025723 -1 15 81266935 81269997 7 70404552
70407352
B219 1 15 79014608 80632267 7 70854910 72326056

(65) [ENSG00000140612/ENSMUSG00000025724](#):
B219 1 15 79014608 80632267 7 70854910 72326056
ENSG00000140612/ENSMUSG00000025724 -1 15 81281350 81330710 7 70417696
70449867
B220 1 15 81971868 87927149 7 64852001 70357616

B220 1 15 81971868 87927149 7 64852001 70357616
ENSG00000140612/ENSMUSG00000025724 -1 15 81281350 81330710 7 70417696
70449867
B219 1 15 79014608 80632267 7 70854910 72326056

(66) [ENSG00000103226/ENSMUSG00000030835](#):
B223 1 16 3315019 16052869 16 3157694 13950902
ENSG00000103226/ENSMUSG00000030835 1 16 16153265 16234549 7 35610125
35661336
B224 1 16 16510398 30601232 7 106321383 118165833

B256 -1 19 49444685 52717241 7 32900963 35524711
ENSG00000103226/ENSMUSG00000030835 1 16 16153265 16234549 7 35610125
35661336
B177 1 11 18551546 27288357 7 35680929 45375815

(67) [ENSG00000167772/ENSMUSG00000002289](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000167772/ENSMUSG00000002289 1 19 8372432 8380884 17 32880122
32887947
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000167772/ENSMUSG00000002289 1 19 8372432 8380884 17 32880122
32887947
B90 -1 6 29575435 33309207 17 33016801 36305724

(68) [ENSG00000142392/ENSMUSG00000002290](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000142392/ENSMUSG00000002290 1 19 8396926 8410121 17 32852967
32866669
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000142392/ENSMUSG00000002290 1 19 8396926 8410121 17 32852967
32866669
B90 -1 6 29575435 33309207 17 33016801 36305724

(69) [ENSG00000170964/ENSMUSG00000024300](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000170964/ENSMUSG00000024300 -1 19 8624492 8632252 17 32658818
32714130
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000170964/ENSMUSG00000024300 -1 19 8624492 8632252 17 32658818
32714130
B90 -1 6 29575435 33309207 17 33016801 36305724

(70) [ENSG00000142303/ENSMUSG00000034344](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000142303/ENSMUSG00000034344 -1 19 8673495 8697960 17 32631534
32641660
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000142303/ENSMUSG00000034344 -1 19 8673495 8697960 17 32631534
32641660
B90 -1 6 29575435 33309207 17 33016801 36305724

(71) [ENSG00000142303/ENSMUSG00000034204](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000142303/ENSMUSG00000034204 -1 19 8673495 8697960 17 32641861
32648307
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000142303/ENSMUSG00000034204 -1 19 8673495 8697960 17 32641861
32648307
B90 -1 6 29575435 33309207 17 33016801 36305724

(72) [ENSG00000142303/ENSMUSG00000024299](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000142303/ENSMUSG00000024299 -1 19 8673495 8697960 17 32648615
32656729
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000142303/ENSMUSG00000024299 -1 19 8673495 8697960 17 32648615
32656729
B90 -1 6 29575435 33309207 17 33016801 36305724

(73) [ENSG00000099785/ENSMUSG00000002311](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000099785/ENSMUSG00000002311 1 19 8720174 8732580 17 32797706
32824844
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000099785/ENSMUSG00000002311 1 19 8720174 8732580 17 32797706
32824844
B90 -1 6 29575435 33309207 17 33016801 36305724

(74) [ENSG00000099783/ENSMUSG00000002291](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000099783/ENSMUSG00000002291 1 19 8738344 8782353 17 32752488
32791582
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000099783/ENSMUSG00000002291 1 19 8738344 8782353 17 32752488
32791582
B90 -1 6 29575435 33309207 17 33016801 36305724

(75) [ENSG00000133246/ENSMUSG00000032739](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000133246/ENSMUSG00000032739 -1 19 8783295 8795834 17 32746382
32751705
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000133246/ENSMUSG00000032739 -1 19 8783295 8795834 17 32746382
32751705
B90 -1 6 29575435 33309207 17 33016801 36305724

(76) [ENSG00000133250/ENSMUSG00000032825](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000133250/ENSMUSG00000032825 -1 19 8804577 8807400 17 32735601
32737415
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000133250/ENSMUSG00000032825 -1 19 8804577 8807400 17 32735601
32737415
B90 -1 6 29575435 33309207 17 33016801 36305724

(77) [ENSG00000142347/ENSMUSG00000024300](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000142347/ENSMUSG00000024300 -1 19 8814359 8849068 17 32658818
32714130
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000142347/ENSMUSG00000024300 -1 19 8814359 8849068 17 32658818
32714130
B90 -1 6 29575435 33309207 17 33016801 36305724

(78) [ENSG00000174700/ENSMUSG00000024300](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000174700/ENSMUSG00000024300 -1 19 8850807 8855419 17 32658818
32714130
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000174700/ENSMUSG00000024300 -1 19 8850807 8855419 17 32658818
32714130
B90 -1 6 29575435 33309207 17 33016801 36305724

(79) [ENSG00000130803/ENSMUSG00000024298](#):
B250 1 19 7221494 8277183 8 3050238 4438387
ENSG00000130803/ENSMUSG00000024298 1 19 9372697 9395516 17 32411238
32499985
B251 1 19 10042462 11820093 9 20698640 22209084

B262 1 21 40038764 41625800 17 30171030 31278245
ENSG00000130803/ENSMUSG00000024298 1 19 9372697 9395516 17 32411238
32499985
B90 -1 6 29575435 33309207 17 33016801 36305724

(80) [ENSG00000100191/ENSMUSG00000020226](#):

B268 -1 22 25864689 28696987 11 3002827 5412772

ENSG00000100191/ENSMUSG00000020226 -1 22 29310507 29347375 10 76493914
76546472

B269 1 22 30362135 32596104 8 72342157 74778783

B266 -1 22 20049057 21700324 10 75608420 76436129

ENSG00000100191/ENSMUSG00000020226 -1 22 29310507 29347375 10 76493914
76546472

B263 -1 21 41703939 44590131 10 76644938 78878387

(81) [ENSG00000100191/ENSMUSG00000020229](#):

B268 -1 22 25864689 28696987 11 3002827 5412772

ENSG00000100191/ENSMUSG00000020229 -1 22 29310507 29347375 10 76583965
76625749

B269 1 22 30362135 32596104 8 72342157 74778783

B266 -1 22 20049057 21700324 10 75608420 76436129

ENSG00000100191/ENSMUSG00000020229 -1 22 29310507 29347375 10 76583965
76625749

B263 -1 21 41703939 44590131 10 76644938 78878387