| | | | | CCNV regions found in all autistic cases (males and females) |
|--------------------------|----|--------|---------|--|
| Location | N | Size | Del/Dup | CNV Gene Content |
| chr1:148542646-148699426 | 15 | 156781 | Del | MRPS21,PRPF3,RPRD2 |
| chr1:159566115-159596015 | 5 | 29901 | Del | SDHC |
| chr1:159566115-159605684 | 6 | 39570 | Del | C1orf192,SDHC |
| chr1:183388645-183438492 | 6 | 49848 | Del | C1orf25,C1orf26 |
| chr1:198226632-198264026 | 8 | 37395 | Del | NR5A2 |
| chr1:198736128-198748379 | 8 | 12252 | Del | |
| chr1:209418136-209449752 | 8 | 31617 | Del | |
| chr1:210362194-210391111 | 8 | 28918 | Del | |
| chr1:211088985-211131668 | 11 | 42684 | Del | FLVCR1,NCRNA00292 |
| chr1:234525338-234556802 | 6 | 31465 | Del | |
| chr1:234879762-234895971 | 5 | 16210 | Del | |
| chr1:27911734-27979646 | 10 | 67913 | Del | FAM76A,STX12 |
| chr1:27944423-27979646 | 7 | 35224 | Del | FAM76A,STX12 |
| | | | | |
| chr1:28522964-28847988 | 15 | 325025 | Del | MED18,PHACTR4,RAB42,RCC1,RNU11,SNHG12,SNHG3,SNORA16A |
| chr1:28532283-28811725 | 13 | 279443 | Del | MED18,PHACTR4,RAB42,RCC1,SNHG12,SNHG3,SNORA16A,SNOR |
| chr1:28608937-28811725 | 11 | 202789 | Del | PHACTR4,RAB42,RCC1,SNHG12,SNHG3,SNORA16A,SNORA44,SNO |
| chr1:3043966-3099011 | 15 | 55046 | Dup | PRDM16 |
| chr1:32803048-32907361 | 7 | 104314 | Del | RBBP4,ZBTB8A,ZBTB8OS |
| chr1:33071409-33094383 | 6 | 22975 | Del | S100PBP |
| chr1:62430118-62464680 | 13 | 34563 | Del | L1TD1 |
| chr1:79256875-79266524 | 6 | 9650 | Del | |
| chr1:93283975-93304294 | 9 | 20320 | Del | |
| chr1:93287637-93304294 | 8 | 16658 | Del | |
| chr2:120457553-120619637 | 12 | 162085 | Del | EPB41L5 |
| chr2:172523756-172565120 | 6 | 41365 | Del | HAT1 |
| chr2:172523756-172604833 | 10 | 81078 | Del | HAT1,METAP1D |
| chr2:174951747-175039184 | 16 | 87438 | Del | CIR1,GPR155,SCRN3 |
| chr2:174987149-175047750 | 11 | 60602 | Del | GPR155,SCRN3 |
| | 14 | 1 | Del | |
| chr2:202873779-203017311 | | 143533 | - | BMPR2,NOP58 |
| chr2:202873779-203140049 | 24 | 266271 | Del | BMPR2,NOP58 |
| chr2:203017311-203140049 | 11 | 122739 | Del | BMPR2 |
| chr2:203454130-203873416 | 25 | 419287 | Del | ALS2CR8,CYP20A1,NBEAL1,WDR12 |
| chr2:203454130-203934576 | 28 | 480447 | Del | ABI2,ALS2CR8,CYP20A1,NBEAL1,WDR12 |
| chr2:224324400-224421599 | 19 | 97200 | Del | AP1S3 |
| chr2:23939110-24044136 | 8 | 105027 | Del | ATAD2B,UBXN2A |
| chr2:38876325-38895284 | 6 | 18960 | Del | DHX57 |
| chr2:38876325-38900658 | 7 | 24334 | Del | DHX57 |
| chr2:38876325-38963062 | 18 | 86738 | Del | DHX57,MORN2 |
| chr2:47452958-47467374 | 6 | 14417 | Del | EPCAM,MIR559 |
| chr2:54178205-54239579 | 13 | 61375 | Del | ACYP2 |
| chr2:54212021-54239579 | 10 | 27559 | Del | ACYP2 |
| chr2:55274329-55345580 | 14 | 71252 | Del | C2orf63,MTIF2,RPS27A |
| chr2:61183721-61222036 | 8 | 38316 | Del | KIAA1841 |
| chr2:61326136-61394146 | 10 | 68011 | Del | USP34 |
| chr2:61723068-61772891 | 7 | 49824 | Del | USI 34 |
| | | | | |
| chr2:78625722-78636272 | 5 | 10551 | Del | |
| chr3:104579967-104598179 | 6 | 18213 | Del | |
| chr3:110555013-110575074 | 7 | 20062 | Del | |
| chr3:113735222-113815319 | 7 | 80098 | Del | ATG3,CCDC80,SLC35A5 |
| chr3:137570728-137783422 | 15 | 212695 | Del | STAG1 |
| chr3:139934042-140084943 | 11 | 150902 | Del | PIK3CB |
| chr3:139993073-140084943 | 7 | 91871 | Del | |
| chr3:143182477-143222766 | 7 | 40290 | Del | TFDP2 |
| chr3:149257402-149280584 | 5 | 23183 | Del | |
| chr3:171401005-171415703 | 5 | 14699 | Del | |
| | - | | | 1 |
| chr3:171448794-171577602 | 16 | 128809 | Del | PRKCI,SKIL |

| chr3:182998542-183040424 | 8 | 41883 | Del | |
|--------------------------|----|--------|-----|--|
| chr3:182998542-183044024 | 9 | 45483 | Del | |
| chr3:183004714-183054110 | 8 | 49397 | Del | |
| chr3:27506800-27529296 | 6 | 22497 | Del | |
| chr3:32674426-32814611 | 15 | 140186 | Del | CNOT10 |
| chr3:41935010-42026840 | 8 | 91831 | Del | ULK4 |
| chr3:47682816-47746291 | 10 | 63476 | Del | SMARCC1 |
| chr3:47682816-47797547 | 13 | 114732 | Del | SMARCC1 |
| chr3:57432480-57464631 | 10 | 32152 | Del | DNAH12 |
| chr3:57432480-57469178 | 11 | 36699 | Del | DNAH12 |
| chr4:113714056-113919598 | 18 | 205543 | Del | C4orf21,LARP7,MIR302A,MIR302B,MIR302C,MIR302D,MIR367 |
| chr4:113744172-113832321 | 8 | 88150 | Del | C4orf21,LARP7,MIR302A,MIR302B,MIR302C,MIR302D,MIR367 |
| chr4:113744172-113919598 | 17 | 175427 | Del | C4orf21,LARP7,MIR302A,MIR302B,MIR302C,MIR302D,MIR367 |
| chr4:113759418-113832321 | 6 | 72904 | Del | C4orf21,LARP7,MIR302A,MIR302B,MIR302C,MIR302D,MIR367 |
| chr4:154533886-154591421 | 8 | 57536 | Del | MND1 |
| chr4:154533886-154610890 | 10 | 77005 | Del | KIAA0922,MND1 |
| chr4:166189075-166211082 | 7 | 22008 | Del | 111110/22/11110 |
| chr4:166189075-166226719 | 9 | 37645 | Del | TMEM192 |
| chr4:166259035-166277171 | 5 | 18137 | Del | |
| chr4:24872576-24903317 | 5 | 30742 | Del | PI4K2B |
| chr4:39068335-39097264 | 7 | 28930 | Del | KLB |
| chr4:39217807-39266759 | 6 | 48953 | Del | C4orf34 |
| chr4:39217807-39282064 | 8 | 64258 | Del | C4orf34 |
| chr4:39224507-39276405 | 6 | 51899 | Del | C4orf34 |
| chr4:39224507-39282064 | 7 | 57558 | Del | C4orf34 |
| chr4:39675489-39797957 | 15 | 122469 | Del | LOC344967,N4BP2 |
| chr4:39675489-39810009 | 17 | 134521 | Del | LOC344967,N4BP2 |
| chr4:41626538-41720041 | 11 | 93504 | Del | DCAF4L1,SLC30A9,TMEM33 |
| chr4:56188697-56227094 | 7 | 38398 | Del | NMU |
| chr4:71943570-71995799 | 7 | 52230 | Del | MOBKL1A |
| chr4:71967109-72178204 | 18 | 211096 | Del | DCK,MOBKL1A |
| chr4:77065779-77108118 | 7 | 42340 | Del | NAAA,SDAD1 |
| chr4:89525529-89535789 | 7 | 10261 | Del | HERC6 |
| chr4:92502794-92541356 | 6 | 38563 | Del | FAM190A |
| chr5:125933468-126000523 | 12 | 67056 | Del | ALDH7A1,C5orf48,PHAX |
| chr5:125933468-126082966 | 21 | 149499 | Del | ALDH7A1,C5orf48,PHAX |
| chr5:129902971-129949287 | 5 | 46317 | Del | |
| chr5:130644691-130701975 | 6 | 57285 | Del | CDC42SE2 |
| chr5:145568676-145667488 | 15 | 98813 | Del | RBM27 |
| chr5:156432559-156464314 | 6 | 31756 | Del | HAVCR2 |
| chr5:37349755-37427371 | 8 | 77617 | Del | NUP155,WDR70 |
| chr5:37354052-37473605 | 13 | 119554 | Del | NUP155,WDR70 |
| chr5:61775220-61930880 | 14 | 155661 | Del | IPO11,LRRC70 |
| chr5:68415592-68470725 | 10 | 55134 | Del | SLC30A5 |
| chr5:68432336-68504814 | 13 | 72479 | Del | CCNB1,SLC30A5 |
| chr5:78556487-78593704 | 5 | 37218 | Del | JMY |
| chr5:79600414-79614553 | 6 | 14140 | Del | |
| chr5:79600414-79616574 | 7 | 16161 | Del | |
| chr5:79841521-79883132 | 5 | 41612 | Del | FAM151B |
| chr6:111057837-111264286 | 18 | 206450 | Del | CDK19 |
| chr6:111384438-111473158 | 17 | 88721 | Del | GTF3C6,RPF2 |
| chr6:134550947-134600782 | 10 | 49836 | Del | SGK1 |
| chr6:134550947-134604849 | 14 | 53903 | Del | SGK1 |
| chr6:134557712-134596031 | 6 | 38320 | Del | SGK1 |
| chr6:13808398-13863495 | 9 | 55098 | Del | RANBP9 |
| chr6:139202954-139228150 | 5 | 25197 | Del | ECT2L |
| chr6:149951184-150156438 | 17 | 205255 | Del | C6orf72,KATNA1,LATS1,NUP43,PCMT1 |
| chr6:149999877-150156438 | 14 | 156562 | Del | KATNA1,LATS1,NUP43,PCMT1 |

| -1(-140000077-1502002/2 | 10 | 200206 | D-1 | WATNALLATELL DD11 MIJD42 DCMT1 |
|--|---------|-----------------|---------------------------------------|------------------------------------|
| chr6:149999877-150208262 chr6:17470094-17489796 | 19 5 | 208386 19703 | Del Del | KATNA1,LATS1,LRP11,NUP43,PCMT1 |
| | | | | |
| chr6:17470094-17494874 | 6 | 24781 | Del | |
| chr6:20612830-20632361 | 7 | 19532 | Del | D GD GA |
| chr6:24477494-24509633 | 6 | 32140 | Del | DCDC2 |
| chr6:42598500-42735412 | 12 | 136913 | Del | UBR2 |
| chr6:71384308-71408533 | 7 | 24226 | Del | |
| chr6:74163467-74434186 | 37 | 270720 | Del | C6orf150,DDX43,EEF1A1,MTO1,SLC17A5 |
| chr6:74266184-74434186 | 26 | 168003 | Del | EEF1A1,MTO1,SLC17A5 |
| chr6:74266184-74447143 | 31 | 180960 | Del | EEF1A1,MTO1,SLC17A5 |
| chr6:74392545-74434186 | 10 | 41642 | Del | SLC17A5 |
| chr6:86262042-86321093 | 8 | 59052 | Del | NT5E,SNX14 |
| chr6:86262042-86336456 | 10 | 74415 | Del | NT5E,SNX14 |
| chr6:89816359-89925006 | 14 | 108648 | Del | PM20D2,PNRC1,SRSF12 |
| chr7:113873430-113934453 | 8 | 61024 | Del | FOXP2 |
| chr7:134785342-134820988 | 6 | 35647 | Del | CNOT4 |
| chr7:138008996-138028345 | 8 | 19350 | Del | SVOPL |
| chr7:138008996-138031017 | 10 | 22022 | Del | SVOPL |
| chr7:138635584-138709343 | 7 | 73760 | Del | C7orf55,LUC7L2,UBN2 |
| chr7:151809888-151873168 | 9 | 63281 | Del | C.01100,300 C.122,05112 |
| chr7:151809888-151886472 | 10 | 76585 | Del | |
| chr7:63065485-63088984 | 8 | 23500 | Del | |
| chr7:73272823-73321316 | 6 | 48494 | Del | LAT2 DEC2 |
| | | | | LAT2,RFC2 |
| chr7:77060822-77354679 | 31 | 293858 | Del | PHTF2,PTPN12,RSBN1L,TMEM60 |
| chr7:77106138-77158324 | 8 | 52187 | Del | PTPN12 |
| chr7:94651324-94678852 | 5 | 27529 | Del | PPP1R9A |
| chr8:70990827-71020425 | 11 | 29599 | Del | |
| chr8:70990827-71033622 | 15 | 42796 | Del | |
| chr8:96840081-96907849 | 18 | 67769 | Del | |
| chr9:131706896-131822805 | 13 | 115910 | Del | FNBP1 |
| chr9:131706896-131827349 | 15 | 120454 | Del | FNBP1 |
| chr9:33998406-34072144 | 13 | 73739 | Del | UBAP2 |
| chr9:33998406-34085717 | 17 | 87312 | Del | DCAF12,UBAP2 |
| chr9:36515772-36637786 | 11 | 122015 | Del | MELK |
| chr9:5956898-5968437 | 5 | 11540 | Del | KIAA2026 |
| chr9:73884517-73962968 | 15 | 78452 | Del | GDA |
| chr10:12068234-12175894 | 19 | 107661 | Del | DHTKD1,UPF2 |
| chr10:12079184-12186864 | 19 | 107681 | Del | DHTKD1,UPF2 |
| chr10:12332460-12399447 | 17 | 66988 | Del | CDC123 |
| chr10:123686677- | 17 | 85727 | Del | NSMCE4A,TACC2 |
| chr10:12369408-12399447 | 8 | 30040 | Del | , |
| chr10:12383635-12391095 | 5 | 7461 | Del | |
| chr10:15097380-15129986 | 12 | 32607 | Del | OLAH |
| chr10:15483641-15510072 | 6 | 26432 | Del | |
| chr10:26863051-26898866 | 11 | 35816 | Del | APBB1IP |
| chr10:69797702-69933585 | 13 | 135884 | Del | DNA2,RUFY2,SLC25A16 |
| chr10:70002586-70051899 | 8 | 49314 | Del | TET1 |
| | | | | |
| chr10:73648734-73666540 | 5 | 17807 | Del | ANAPC16 |
| chr10:74025594-74133869 | 6 | 108276 | Del | CBARA1,CCDC109A |
| chr11:10057767-10099689 | 5 | 41923 | Del | SBF2 |
| chr11:118210355- | 8 | 30332 | Del | |
| chr11:32483814-32552861 | 15 | 69048 | Del | |
| chr11:80606592-80620137 | 14 | 13546 | Del | |
| chr11:9265981-9320188 | 8 | 54208 | Del | TMEM41B |
| chr11:9346451-9496239 | 17 | 149789 | Del | IPO7,LOC644656,SNORA23,ZNF143 |
| chr11:97676619-97795166 | 21 | 118548 | Del | |
| chr12:100801180- | 7 | 17570 | Del | DRAM1 |
| chr12:10492957-10600080 | 13 | 107124 | Del | KLRC1 |
| chr12:121368594- | 30 | 320618 | Del | CLIP1,KNTC1,RSRC2,ZCCHC8 |
| | | | · · · · · · · · · · · · · · · · · · · | / / |

| 121689211 | | | | |
|---------------------------|----|--------|-----|------------------------------------|
| chr12:32077191-32121084 | 18 | 43894 | Del | |
| CIII 12.3207/131-32121004 | 16 | 43094 | DCI | |
| chr12:32107892-32121084 | 6 | 13193 | Del | |
| chr12:32107892-32126302 | 8 | 18411 | Del | |
| chr12:49014078-49127324 | 14 | 113247 | Del | FAM186A,LARP4 |
| chr12:49014078-49145087 | 17 | 131010 | Del | FAM186A,LARP4 |
| chr12:62930978-63035639 | 19 | 104662 | Del | C12orf56 |
| chr12:917792-948337 | 12 | 30546 | Del | RAD52 |
| chr12:942651-1056227 | 24 | 113577 | Del | ERC1 |
| chr13:41693991-41699654 | 5 | 5664 | Del | DGKH |
| chr13:49192057-49239176 | 9 | 47120 | Del | KPNA3 |
| chr13:79722991-79809526 | 13 | 86536 | Del | SPRY2 |
| chr13:80558774-80571474 | 5 | 12701 | Del | |
| chr13:94967687-94984576 | 5 | 16890 | Del | CLDN10 |
| chr14:35148467-35216763 | 7 | 68297 | Del | RALGAPA1 |
| chr14:35148467-35371747 | 19 | 223281 | Del | BRMS1L,RALGAPA1 |
| chr14:35148467-35408995 | 20 | 260529 | Del | BRMS1L,RALGAPA1 |
| chr14:46720671-46767552 | 11 | 46882 | Del | MDGA2 |
| chr14:52200902-52228076 | 8 | 27175 | Del | ERO1L |
| chr14:54373759-54509818 | 17 | 136060 | Del | GCH1,MIR4308,WDHD1 |
| chr14:58050270-58091995 | 5 | 41726 | Del | KIAA0586 |
| chr14:63089400-63284561 | 13 | 195162 | Del | SGPP1,WDR89 |
| chr14:73171175-73238184 | 8 | 67010 | Del | DNAL1 |
| chr14:73874924-73887171 | 6 | 12248 | Del | C14orf115 |
| chr14:77057711-77110927 | 20 | 53217 | Del | SPTLC2 |
| chr14:77098556-77110927 | 5 | 12372 | Del | SPTLC2 |
| chr14:91569101-91670551 | 20 | 101451 | Del | ATXN3,CPSF2,NDUFB1,TRIP11 |
| chr14:91593892-91625808 | 7 | 31917 | Del | ATXN3 |
| chr15:33004392-33041888 | 6 | 37497 | Del | AQR |
| chr15:38265123-38315447 | 6 | 50325 | Del | BUB1B,PAK6 |
| chr15:39421879-39439013 | 5 | 17135 | Del | NUSAP1 |
| chr15:39421879-39476524 | 7 | 54646 | Del | NDUFAF1,NUSAP1 |
| chr15:40988401-41123636 | 8 | 135236 | Del | TTBK2,UBR1 |
| chr15:41081510-41123636 | 5 | 42127 | Del | UBR1 |
| chr15:48476200-48500329 | 5 | 24130 | Del | |
| chr15:48489350-48577525 | 11 | 88176 | Del | USP8 |
| chr15:53414820-53547867 | 19 | 133048 | Del | CCPG1,DYX1C1,MIR628,PIGB |
| chr15:53475261-53547867 | 11 | 72607 | Del | CCPG1,DYX1C1 |
| chr15:53480496-53547867 | 10 | 67372 | Del | CCPG1,DYX1C1 |
| chr15:53480496-53565080 | 12 | 84585 | Del | CCPG1,DYX1C1 |
| chr15:53482122-53547867 | 9 | 65746 | Del | CCPG1,DYX1C1 |
| chr15:62381664-62572511 | 12 | 190848 | Del | CSNK1G1,KIAA0101,TRIP4 |
| chr15:63372790-63417235 | 10 | 44446 | Del | IGDCC3 |
| chr15:73542520-73711498 | 10 | 168979 | Del | PTPN9,SNUPN |
| chr15:73557085-73639839 | 5 | 82755 | Del | PTPN9 |
| chr15:74758511-74963213 | 16 | 204703 | Del | SCAPER |
| chr15:74938615-74963213 | 7 | 24599 | Del | SCAPER |
| chr15:83265502-83301233 | 20 | 35732 | Del | SLC28A1 |
| chr15:88174443-88201888 | 6 | 27446 | Del | AP3S2 |
| chr15:96929526-96950172 | 11 | 20647 | Del | |
| chr16:73220098-73241238 | 5 | 21141 | Del | RFWD3 |
| chr17:16020935-16218501 | 18 | 197567 | Del | CENPV,MIR1288,NCOR1,PIGL |
| chr17:16020935-16259657 | 21 | 238723 | Del | CENPV,MIR1288,NCOR1,PIGL,TRPV2,UBB |
| chr17:16125354-16266693 | 17 | 141340 | Del | CENPV,MIR1288,PIGL,TRPV2,UBB |
| chr17:2456111-2507919 | 6 | 51809 | Del | PAFAH1B1 |
| chr17:24587116-24627212 | 8 | 40097 | Del | CRYBA1,NUFIP2 |
| chr17:25481175-25555919 | 9 | 74745 | Del | CCDC55,SLC6A4 |
| chr17:26097956-26250354 | 9 | 152399 | Del | ATAD5,C17orf42,CRLF3,SUZ12P |
| | · | | L | 1 , ,,,- |

| chr17:26131834-26250354 | 8 | 118521 | Del | ATAD5,C17orf42,CRLF3 |
|-------------------------|----|--------|-----|--|
| chr17:26138589-26250354 | 7 | 111766 | Del | ATAD5,C17orf42,CRLF3 |
| chr17:27214461-27246115 | 6 | 31655 | Del | UTP6 |
| chr17:34761298-34863649 | 5 | 102352 | Del | FBXL20,MED1 |
| chr17:34761298-34869863 | 6 | 108566 | Del | FBXL20,MED1 |
| chr17:38465179-38552381 | 13 | 87203 | Del | BRCA1,NBR2 |
| chr17:54063018-54698963 | 35 | 635946 | Del | C17orf71,GDPD1,MIR301A,MIR454,PPM1E,PRR11,RAD51C,SKA2,TE |
| chr17:55173488-55351797 | 15 | 178310 | Del | MIR21,RPS6KB1,TMEM49,TUBD1 |
| chr17:63187880-63236615 | 6 | 48736 | Del | |
| chr17:70602916-70715732 | 9 | 112817 | Del | ARMC7,HN1,NT5C,NUP85,SLC16A5,SUMO2 |
| chr18:16954953-17049834 | 10 | 94882 | Del | |
| chr18:17202748-17526315 | 18 | 323568 | Del | ABHD3,ESCO1,GREB1L,MIR320C1,SNRPD1 |
| chr18:2584549-2632376 | 14 | 47828 | Del | NDC80 |
| chr18:27852807-27910954 | 10 | 58148 | Del | RNF125 |
| chr18:3559620-3565933 | 6 | 6314 | Del | DLGAP1 |
| chr18:3559620-3570742 | 10 | 11123 | Del | DLGAP1 |
| chr18:50007104-50029385 | 5 | 22282 | Del | |
| chr18:54622597-54679876 | 6 | 57280 | Del | |
| chr18:59167645-59180491 | 5 | 12847 | Del | KDSR |
| chr19:19759149-19814114 | 5 | 54966 | Del | ZNF506 |
| chr19:62298373-62341712 | 14 | 43340 | Del | USP29,ZIM3 |
| chr20:4985774-5006969 | 8 | 21196 | Del | |
| chr20:49892937-49941210 | 18 | 48274 | Del | |
| chr20:49981704-50065689 | 27 | 83986 | Del | |
| chr20:50031593-50065689 | 10 | 34097 | Del | |
| chr21:26056693-26094576 | 5 | 37884 | Del | GABPA |