

**dup(4)(q31.3)**

- tandem duplication on Chr4: 150746214(q31.3) - 151129847(q31.3)
- all genes near breakpoints: ['ZNF595', 'SH3D19', 'ZNF718', 'ZNF876P', 'PRSS48', 'SNORD73A', 'MAB21L2', 'LRBA', 'SNORD73B', 'LOC729558', 'RPS3A']
- genes near breakpoints documented in DDG2P:  
LRBA(606453): CHILDHOOD-ONSET HYPOGAMMAGLOBULINEMIA(614700)  
MAB21L2(604357): MICROPHthalmia, SYNDROMIC 14(615877), MICROPHthalmia, SYNDROMIC 14(615877)
- all genes with +1 CN: ['LRBA', 'RPS3A', 'SNORD73B', 'SNORD73A', 'SH3D19']
- genes with +1 CN documented in DDG2P:  
LRBA(606453): CHILDHOOD-ONSET HYPOGAMMAGLOBULINEMIA(614700)

**del(2)(q14.1)**

- deletion on Chr2: 117154946(q14.1) - 117670484(q14.1)
- all genes near breakpoints: ['LOC107985939', 'DDX18', 'FAM110C', 'SH3YL1']
- genes near breakpoints documented in DDG2P: None
- all genes with -1 CN: []
- genes with -1 CN documented in DDG2P: None

**del(8)(p23.2)**

- deletion on Chr8: 2366171(p23.2) - 2696469(p23.2)
- all genes near breakpoints: ['LOC105377785', 'OR4F21', 'LOC101927506', 'ZNF596', 'RPL23AP53', 'LOC101927815']
- genes near breakpoints documented in DDG2P: None
- all genes with -1 CN: ['LOC101927815']
- genes with -1 CN documented in DDG2P: None