inv(17)(p11.2)

- inversion on Chr17: 16806184(p11.2) - 18509508(p11.2)

- all genes near breakpoints: ['LINC02090', 'TBC1D28', 'TOP3A', 'ZNF286B', 'CCDC144B', 'EVPLL', 'LOC284191', 'KRT17P5', 'FAM106A', 'USP32P1', 'MIR6778', 'LINC02076', 'KRT17P1', 'SHMT1', 'SMCR8', 'DOC2B', 'TRIM16L', 'KRT17P2', 'KRT16P1', 'FAM106C', 'FOXO3B', 'LINC02091', 'ZNF624', 'CCDC144A', 'TNFRSF13B', 'LGALS9C', 'KRT16P2', 'USP32P2', 'TBC1D27P', 'SCGB1C2']

- genes near breakpoints documented in DDG2P:
TNFRSF13B(604907): IMMUNODEFICIENCY, COMMON VARIABLE, 2(240500)
TOP3A(601243): Bloom Syndrome like Disorder(No disease mim)

del(4)(q34.3)

- deletion on Chr4: 178528965(q34.3) - 178789928(q34.3)

- all genes near breakpoints: ['ZNF718', 'ZNF595', 'ZNF876P']

- genes near breakpoints documented in DDG2P: None

- all genes with -1 CN: []

- genes with -1 CN documented in DDG2P: None