## dup(7)(q11.23)

- tandem duplication on Chr7: 76439156(q11.23) 77052211(q11.23)
- all genes near breakpoints: ['SSC4D', 'YWHAG', 'LOC105375115', 'FAM185BP', 'FAM20C', 'SPDYE16', 'LOC100507642', 'PMS2P9', 'LOC102723672', 'CCDC146', 'SPDYE17', 'DTX2P1-UPK3BP1-PMS2P11', 'FGL2', 'ZP3', 'SPDYE18', 'FDPSP2', 'UPK3B', 'HSPB1', 'DTX2', 'POMZP3', 'SRRM3', 'LOC100133091']
- genes near breakpoints documented in DDG2P:

FAM20C(611061): RAINE SYNDROME(259775)

YWHAG(605356): Early-Onset Epilepsy(No disease mim)

- all genes with +1 CN: ['ZP3', 'DTX2', 'FDPSP2', 'UPK3B', 'SPDYE16', 'LOC100133091', 'POMZP3', 'DTX2P1-UPK3BP1-PMS2P11', 'SPDYE17', 'PMS2P9']
- genes with +1 CN documented in DDG2P: None