**Supplementary Table 6**: results of gene level analysis with nominal p<5e-04 in GSRD. Only genes including at least two polymorphisms were reported. No gene was associated with the phenotypes of interest after multiple-testing correction (FDR). Chr=chromosome. Start and stop positions are reported according to genome build GRCh37. Rare variants are defined as those with MAF<1/√(2n) where n is sample size (Ionita-Laza et al., 2013).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Phenotype** | **Gene** | **Description** | **Chr** | **Start** | **Stop** | **N SNPs** | **N rare** | **Z** | **p** |
| **TRD vs. response** | SCG3 | Secretogranin III | 15 | 51973550 | 52013223 | 87 | 17 | 3.71 | 1.05e-04 |
| CNEP1R1 | CTD nuclear envelope phosphatase 1 regulatory subunit 1 | 16 | 50059121 | 50070999 | 26 | 2 | 3.67 | 1.24e-04 |
| ERAL1 | Era like 12S mitochondrial rRNA chaperone 1 | 17 | 27182043 | 27188072 | 15 | 2 | 3.66 | 1.26e-04 |
| COL12A1 | Collagen type XII alpha 1 chain | 6 | 75794042 | 75915623 | 194 | 60 | 3.64 | 1.37e-04 |
| MKS1 | Meckel syndrome, type 1 | 17 | 56282797 | 56296966 | 25 | 8 | 3.41 | 3.27e-04 |
| FBXW9 | F-box and WD repeat domain containing 9 | 19 | 12799730 | 12807649 | 23 | 22 | 3.40 | 3.32e-04 |
| PRPF6 | pre-mRNA processing factor 6 | 20 | 62612417 | 62664453 | 93 | 11 | 3.39 | 3.45e-04 |
| CXXC1 | CXXC finger protein 1 | 18 | 47808713 | 47814692 | 10 | 0 | 3.38 | 3.60e-04 |
| PSG11 | pregnancy specific beta 1 glycoprotein 11 | 19 | 43511809 | 43530658 | 59 | 1 | 3.38 | 3.70e-04 |
| GHRL | Ghrelin and obestatin prepropeptide | 3 | 10327434 | 10334631 | 20 | 3 | 3.33 | 4.28e-04 |
| **TRD and responders % improv.** | COL12A1 | Collagen type XII alpha 1 chain | 6 | 75794042 | 75915623 | 194 | 60 | 4.12 | 1.91e-05 |
| ZDHHC3 | Zinc finger DHHC-type containing 3 | 3 | 44956753 | 45017674 | 93 | 36 | 3.91 | 4.67e-05 |
| FAM214A | family with sequence similarity 214 member A | 15 | 52873518 | 52971569 | 190 | 24 | 3.84 | 6.21e-05 |
| C1QL1 | Complement C1q like 1 | 17 | 43037061 | 43045644 | 25 | 3 | 3.73 | 9.62e-05 |
| PSG11 | pregnancy specific beta 1 glycoprotein 11 | 19 | 43511809 | 43530658 | 59 | 1 | 3.53 | 2.09e-04 |
| CNEP1R1 | CTD nuclear envelope phosphatase 1 regulatory subunit 1 | 16 | 50059121 | 50070999 | 26 | 2 | 3.52 | 2.19e-04 |
| CHN1 | chimerin 1 | 2 | 175664042 | 175870671 | 265 | 47 | 3.49 | 2.44e-04 |
| CDK3 | Cyclin dependent kinase 3 | 17 | 73996235 | 74002080 | 15 | 4 | 3.48 | 2.53e-04 |
| EVPL | Envoplakin | 17 | 74002926 | 74023533 | 60 | 17 | 3.45 | 2.84e-04 |
| CXXC1 | CXXC finger protein 1 | 18 | 47808713 | 47814692 | 10 | 0 | 3.44 | 2.95e-04 |
| MPV17 | Mitochondrial inner membrane protein | 2 | 27532360 | 27545969 | 14 | 5 | 3.40 | 3.31e-04 |
| **TRD vs. others** | HES3 | hes family bHLH transcription factor 3 | 1 | 6304252 | 6305638 | 6 | 3 | 3.99 | 3.28e-05 |
| POGZ | Pogo transposable element derived with ZNF domain | 1 | 151375200 | 151445753 | 86 | 12 | 3.62 | 1.45e-04 |
| XRCC1 | X-ray repair cross complementing 1 | 19 | 44047464 | 44079730 | 117 | 33 | 3.46 | 2.67e-04 |
| MKI67 | Marker of proliferation Ki-67 | 10 | 129894923 | 129924468 | 131 | 48 | 3.44 | 2.88e-04 |
| SOX12 | SRY-box 12 | 20 | 306215 | 310872 | 13 | 9 | 3.30 | 4.78e-04 |