Supplementary Material

**Supplementary Table.** Candidate-gene association studies in lithium response

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| **Author/Year** | **Sample size** | **Gene / Locus** | **Results** | **Remarks** |
| Ventura et al., 1990 (Ventura et al., 1990) | 36 patients | A2 HLA antigen | A2 HLA antigen more frequently found in non-responders | Serum analyses to identify the presence of antibodies to human leukocyte antigens (HLA) |
| Turecki et al., 1996 (Turecki et al., 1996) | 55 bipolar patients with excellent lithium response and 94 controls | Short arm chromosome 18, including *GNAL* (G Protein Subunit Alpha L) gene | No evidence for association | Case-control analysis of excellent lithium responders versus healthy controls |
| Cavazzoni et al., 1996 (Cavazzoni et al., 1996) | 54 bipolar patients with excellent lithium response and 94 controls | *TH* (Tyrosine hydroxylase) gene | No evidence for association of a tetranucleotide repeat within *TH* gene | Case-control analysis of excellent lithium responders versus healthy controls |
| Turecki et al., 1998 (Turecki et al., 1998) | 136 bipolar patients with excellent lithium response and 163 controls | *PLCG1* (phospholipase C-gamma1) gene | (CA)n repeat associated with bipolar disorder | Case-control analysis of excellent lithium responders versus healthy controls |
| Serretti et al. 1998 (Serretti et al., 1998) | 43 bipolar and 12 major depressive disorder patients treated with lithium | *DRD3 (dopamine receptor D3)* gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Turecki et al., 1999 (Turecki et al., 1999) | 138 bipolar patients with excellent lithium response and 108 controls | *MAOA* (monoamine oxidase A) gene | No evidence for association | Case-control analysis of excellent lithium responders versus healthy controls |
| Serretti et al., 1999 (Serretti et al., 1999b) | 90 bipolar and 18 major depressive disorder patients treated with lithium | *TPH1* (Tryptophan hydroxylase) gene | Marginal association of BfaI polymorphism with pre/on-lithium treatment recurrence index | Case-only analysis of lithium-treated patients |
| Serretti et al., 1999 (Serretti et al., 1999a) | 125 bipolar and 25 major depressive disorder patients treated with lithium | *DRD2* (dopamine receptor D2) gene  *DRD4* (dopamine receptor D4) gene  *GABRA1* (Gamma-Aminobutyric Acid Type A Receptor Alpha1 Subunit) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Turecki et al., 2000 (Turecki et al., 2000) | 138 bipolar patients with excellent lithium response and 108 controls | 5 loci with polyglutamine (CAG repeat) coding genes | No evidence for association | Case-control analysis of excellent lithium responders versus healthy controls |
| Alda et al., 2000 (Alda et al., 2000) | 138 bipolar patients with excellent lithium response and 108 controls | *CRH* (Corticotropin-Releasing Hormone) gene  *PENK* (Proenkephalin) gene | No evidence for association of the intragenic dinucleotide repeats at these *loci* | Case-control analysis of excellent lithium responders versus healthy controls |
| Duffy et al., 2000 (Duffy et al., 2000) | 138 bipolar patients with excellent lithium response and 108 controls | *GABRA3*  *GABRA5*  *GABRB3*  (Gamma-Aminobutyric Acid Type A Receptor Alpha3-5/Beta3 Subunit) genes | No evidence for association of the intragenic dinucleotide repeats at these *loci* | Case-control analysis of excellent lithium responders versus healthy controls |
| Serretti et al., 2001 (Serretti et al., 2001) | 167 bipolar and 34 major depressive disorder patients treated with lithium | *SLC6A4* (Serotonin transporter) gene | Promoter length polymorphism associated with pre/on-lithium treatment recurrence index | Case-only analysis of lithium-treated patients |
| Serretti et al., 2002 (Serretti et al., 2002) | 160 bipolar and 41 major depressive disorder patients treated with lithium | *COMT* (catechol-O-methyltransferase) gene  *MAOA* (monoamine oxidase A) gene  *GNB3* (G Protein Subunit Beta 3) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Zill et al., 2003 (Zill et al., 2003) | 149 bipolar patients treated with lithium | *GNAL* (G Protein Subunit Alpha L) gene | No evidence for association of two intronic SNPs | Case-only analysis of lithium-treated patients |
| Washizuka et al., 2003 (Washizuka et al., 2003) | 54 bipolar patients treated with lithium | mtDNA polymorphisms: 5178C>A 10398A>G | 10398A>G associated with lithium response | Case-only analysis of lithium-treated patients |
| Sjøholt et al., 2004 (Sjøholt et al., 2004) | 44 bipolar patients treated with lithium | *IMPA1*  *IMPA2*  (Inositol Monophosphatase 1-2) genes | No evidence for association of 3 *IMPA1* and 10 *IMPA2* polymorphisms | Case-only analysis of lithium-treated patients |
| Serreti et al., 2004 (Serretti et al., 2004) | 83 bipolar patients treated with lithium | *SLC6A4* (Serotonin transporter) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Dimitrova et al., 2005 (Dimitrova et al., 2005) | 77 bipolar patients treated with lithium.  43 parents–offspring trios | *IMPA2*  (Inositol Monophosphatase 2) gene | No evidence for association in case-only analysis.  TDT shows preferential transmission of rs3786282 and 599+97G>A alleles in good responders trios (N=19) | Case-only and parents–offspring trios analysis of lithium-treated patients |
| Rybakowski et al., 2005 (Rybakowski et al., 2005) | 88 bipolar patients treated with lithium | *BDNF* (Brain-Derived Neurotrophic Factor) gene | Val66Met polymorphism associated with lithium response | Case-only analysis of lithium-treated patients |
| Dmitrzak-Weglarz et al., 2005 (Dmitrzak-Weglarz et al., 2005) | 92 bipolar patients treated with lithium | *HTR2A*  *HTR2C*  (Serotonin receptors 2A/2C) genes | No evidence for association | Case-only analysis of lithium-treated patients |
| Masui et al., 2006 (Masui et al., 2006a) | 66 bipolar patients treated with lithium | *XBP1* (X-Box Binding Protein 1) gene | -116C/G associated with lithium response | Case-only analysis of lithium-treated patients |
| Masoliver et al., 2006 (Masoliver et al., 2006) | 98 bipolar patients treated with lithium | *SLC6A4* (Serotonin transporter) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Masui et al., 2006 (Masui et al., 2006b) | 161 bipolar patients treated with lithium | *BDNF* (Brain-Derived Neurotrophic Factor) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Michelon et al., 2006 (Michelon et al., 2006) | 134 bipolar patients treated with lithium | *INPP1* (Inositol Polyphosphate-1-Phosphatase) gene  *SLC6A4* (Serotonin transporter) gene  *BDNF* (Brain-Derived Neurotrophic Factor) gene  *TFAP2B* (Transcription Factor AP-2 Beta) gene  *GSK3ß* (Glycogen Synthase Kinase-3β) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Szczepankiewicz et al., 2006 (Szczepankiewicz et al., 2006) | 89 bipolar patients treated with lithium | *GSK3ß* (Glycogen synthase kinase-3β) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Mamdani et al., 2007 (Mamdani et al., 2007) | Approx. 200 bipolar patients treated with lithium | *PREP* (Prolyl Endopeptidase) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Adli et al., 2007 (Adli et al., 2007) | 81 major depressive disorder patients treated with lithium | *GSK3ß* (Glycogen synthase kinase-3β) gene | −50T/C SNP associated with clinical response to lithium augmentation | Case-only analysis of depressive lithium augmentation-treated patients |
| Masui et al., 2008 (Masui et al., 2008) | 161 bipolar patients treated with lithium | *BCR* (BCR, RhoGEF And GTPase Activating Protein) gene | Asn796Ser polymorphism associated with lithium response | Case-only analysis of lithium-treated patients |
| Mamdani et al., 2008 | Approx. 200 bipolar patients treated with lithium | *CREB1*  *CREB2*  *CREB3*  (CAMP Responsive Element Binding Protein 1/2/3) genes | Two *CREB1* SNPs associated with lithium response | Case-only analysis of lithium-treated patients |
| Silberberg et al., 2008 (Silberberg et al., 2008) | 197 + 161 bipolar patients treated with lithium | *CACNG2* (Calcium Voltage-Gated Channel Auxiliary Subunit Gamma 2) gene | 3 SNPs associated with lithium response | Case-only analysis of lithium-treated patients |
| Squassina et al., 2008 (Squassina et al., 2008) | 155 bipolar patients treated with lithium | *PDLIM5* (PDZ And LIM Domain 5) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Yun et al., 2008 (Yun et al., 2008) | 45 bipolar patients treated with lithium (n=30) or other mood stabilizers (n=15) | *DTNBP1* (Dystrobrevin Binding Protein 1) gene | No evidence for association with response to mood stabilizers | Case-only analysis of mood stabilizer-treated patients |
| Dmitrzak-Weglarz et al., 2008 (Dmitrzak-Weglarz et al., 2008) | 108 bipolar patients treated with lithium | *BDNF* (Brain-Derived Neurotrophic Factor) gene  *NTRK2* (Neurotrophic Receptor Tyrosine Kinase 2) gene | Val66Met and rs988748 BDNF SNPs associated with lithium response | Case-only analysis of lithium-treated patients |
| Rybakowski et al., 2009 (Rybakowski et al., 2009) | 92 bipolar patients treated with lithium | *DRD1* (dopamine receptor D1) gene | -48A/G polymorphism associated with lithium response | Case-only analysis of lithium-treated patients |
| Szczepankiewicz et al., 2009 (Szczepankiewicz et al., 2009b) | 101 bipolar patients treated with lithium | *FYN* (FYN Proto-Oncogene, Src Family Tyrosine Kinase) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Szczepankiewicz et al., 2009 (Szczepankiewicz et al., 2009a) | 105 bipolar patients treated with lithium | *GRIN2B* (Glutamate Ionotropic Receptor NMDA Type Subunit 2B) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Manchia et al., 2009 (Manchia et al., 2009a) | 155 bipolar patients treated with lithium | *DRD1*  DRD2  DRD3 (dopamine receptor D1/2/3) genes  *SLC6A3* (Dopamine transporter) gene  *SLC6A4* (Serotonin transporter) gene  *HTR2A*  (Serotonin receptors 2A) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Manchia et al., 2009 (Manchia et al., 2009b) | 199 bipolar patients treated with lithium | *DGKH* (Diacylglycerol Kinase Eta) gene  *NR1D1* (Nuclear Receptor Subfamily 1 Group D Member 1) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Campos de Sousa et al., 2010 (Campos-de-Sousa et al., 2010) | 170 bipolar patients treated with lithium | *NR1D1* (Nuclear Receptor Subfamily 1 Group D Member 1) gene | rs231433 associated with lithium response | Case-only analysis of lithium-treated patients |
| Drago et al., 2010 (Drago et al., 2010) | 83 bipolar patients treated with lithium | *BDNF* (Brain-Derived Neurotrophic Factor) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| Rybakowski et al., 2011 (Rybakowski et al., 2011) | 109 bipolar patients treated with lithium | *MMP9* (Matrix Metallopeptidase 9) gene | No evidence for association | Case-only analysis of lithium-treated patients |
| McCarthy et al., 2011 (McCarthy et al., 2011) | 282 bipolar patients treated with lithium | *NR1D1* (Nuclear Receptor Subfamily 1 Group D Member 1)  *ARNTL* (Aryl Hydrocarbon Receptor Nuclear Translocator Like)  *CLOCK* (Clock Circadian Regulator)  *CRY1* (Cryptochrome Circadian Regulator 1)  *GSK3ß* (Glycogen synthase kinase-3β)  *PER2* (Period Circadian Regulator 2)  *PER3* (Period Circadian Regulator 3)  genes | rs8192440 (*CRY1*) and rs2071427 (*NR1D1*) associated with lithium response.  Combined effect of rs2071427 (*NR1D1*) and rs6438552 (*GSK3ß*) on lithium response | Case-only analysis of lithium-treated patients |
| Szczepankiewicz et al., 2011 (Szczepankiewicz et al., 2011) | 115 bipolar patients treated with lithium | *NR3C1* (Glucocorticoid receptor) gene | rs41423247 associated with lithium response | Case-only analysis of lithium-treated patients |
| Squassina et al., 2011 (Squassina et al., 2011) | 52 bipolar patients treated with lithium | *ACCN1* gene (Amiloride-sensitive Cation Channel 1, Neuronal) or new name: *ASIC2* (Acid-sensing ion channel subunit 2) / chromosome 17q12 | Robust association between rs11869731 and lithium response | Case-only analysis of lithium-treated patients (full-responders and non-responders) |
| Numajiri et al., 2012 (Numajiri et al., 2012) | 29 bipolar patients treated with lithium | *GSK3β* (Glycogen synthase kinase-3β) gene | *GSK3ß* -50T/C may be linked with the effect of lithium treatment, and *GSK3ß* -1727A/T has no significant relationship | Case-only analysis of lithium-treated patients |
| Rybakowski et al., 2012 (Rybakowski et al., 2012) | 101 bipolar patients treated with lithium | *5HTT, DRD1, COMT, BDNF, FYN, 5HT2A, 5HT2C, DRD2, DRD3, DRD4, GSK3, NTRK2, GRIN2B,* and *MMP-9* genes | Association with lithium prophylactic efficacy was found for *5HTT* (ins/del 44 pz), *DRD1* (-48 A/G), *COMT* (Val108Met), *BDNF* (Val66Met) and *FYN* (37 T/C); No association for *5HT2A*, *5HT2C*, *DRD2*, *DRD3*, *DRD4*, *GSK3*, *NTRK2*, *GRIN2B* and *MMP-9* | Case-only analysis of lithium-treated patients (excellent-responders, partial-responders, and non-responders) |
| [Benedetti](https://pubmed.ncbi.nlm.nih.gov/?term=Benedetti+F&cauthor_id=22119086) et al., 2012 (Benedetti et al., 2012) | 122 patients affected by a major depressive episode in the course of bipolar treated with lithium | *GSK3β* (Glycogen synthase kinase-3β); *5-HTTLPR* (Serotonin transporter) genes | Among rs334558 T/T homozygotes (*GSK3β*), the best antidepressant response was associated with *5-HTTLPR* l/l homozygosity; among the rs334558 C carriers (*GSK3β*), the *5-HTTLPR* s/s showed the best response to treatment | Case-only analysis of lithium-treated patients |
| Wang et al., 2012 (Wang et al., 2012) | 342 bipolar I and II patients treated with lithium or valproate and 386 healthy controls | *BDNF* (brain-derived neurotrophic factor) gene | Association of rs6265 (Val66Met polymorphism) with lithium response in both BPD-I and BPD-II patients | Case-control analysis of lithium or valproate responder treated patients versus healthy controls |
| Pisanu et al., 2013 (Pisanu et al., 2013) | 204 bipolar patients treated with lithium and 422 healthy controls | *NAPE*-*PLD* (N-acyl phosphatidylethanolamine phospholipase D), *CNR1* (cannabinoid receptor1), and *FAAH* (fatty acid amide hydrolase) genes | None of the SNPs of *NAPE-PLD*, *CNR1*, or *FAAH* showed nominal association with lithium response | Case-control analysis of lithium-treated patients versus healthy controls |
| Tharoor e al., 2013 (Tharoor et al., 2013) | 122 bipolar patients treated with lithium and 124 healthy controls | Triallelic 5-hydroxy tryptamine transporter linked promoter region (*5-HTTLPR*) and variable number tandem repeats in the serotonin transporter intron 2 (STin2) | Significant association of haplotype consisting of the S allele of *5-HTTLPR* and 10 repeat allele of STin2 (STin2.10) with lithium response | Case-control analysis of lithium-treated patients (good responders, non-responders, and partial responders) versus healthy controls |
| Wang et al., 2013 (Wang et al., 2013, 2) | 284 bipolar I patients treated with lithium or valproate and 295 healthy controls | *NTRK2* (Neurotrophic tyrosine kinase receptor type 2) gene | Significant allelic association between rs2769605 and response to lithium or valproate; No significant association between rs1387923 and rs1565445 and response to lithium or valproate | Case-control analysis of excellent lithium or valproate responders versus healthy controls |
| Lin et al., 2013 (Lin et al., 2013) | 83 bipolar I patients treated with lithium and 131 healthy controls | *GSK3β* (Glycogen synthase kinase-3β) gene/chromosome 3q13 | Genotype TT at rs334558 had a poorer response to lithium treatment than genotypes CC and CT | Case-control analysis of lithium-treated patients and non-lithium-treated patients versus healthy controls |
| Iwahashi et al., 2014 (Iwahashi et al., 2014) | 42 bipolar patients treated with lithium | *GSK3β* (Glycogen synthase kinase–3β) gene | No significant difference in genotypic or allelic frequencies of single SNPs -50T/C (rs334558) and -1727A/T (rs3755557) between lithium responders and non-responders; *GSK3ß* haplotype T-A was associated with a higher lithium response, and haplotype C-A was associated with a lower lithium response | Case-only analysis of lithium-treated patients (responders and non-responders) |
| Wang et al., 2014 (Wang et al., 2014) | 280 bipolar I patients treated with lithium and valproate and 288 healthy controls | *MIR206* (*miRNA*-206) and *BDNF* (brain-derived neurotrophic factor) genes | No association was observed in the individual polymorphism, *MIR206* rs16882131 and *BDNF* rs6265, with lithium and valproate response; Individuals with *MIR206* T/T + TC and *BDNF* A/A genotypes had a significantly lower mean treatment score than those with *MIR206* CC and *BDNF* A/A + A/G as well as *MIR206* CC and *BDNF* G/G genotypes | Case-control analysis of lithium and valproate treated bipolar patients versus healthy controls |
| Chen et al., 2014 (Chen et al., 2014) | 294, 100, 24, 94 and 94 bipolar patients treated with lithium | *GADL1* (Glutamate decarboxylase-like protein 1) gene / chromosome 3p24 | rs17026688 and rs17026651 and *GADL1* IVS8+48delG are associated with response to lithium and can be useful biomarkers in predicting the response in Asian ancestry | Case-only analysis of lithium-treated patients (excellent lithium responders, poor responders, and non-responders) |
| Rybakowski et al., 2014 (Rybakowski et al., 2014) | 115 bipolar patients with lithium prophylaxis | *CLOCK* (Circadian Locomotor Output Cycle Kaput), *ARNTL* (Aryl hydrocarbon Receptor Nuclear Translocator-Like), *TIMELESS* (Timeless circadian clock), *PER3* (Period circadian clock 3) genes | Association with the degree of lithium prophylaxis response was found with eight polymorphisms of the *ARNTL* gene (rs4146388, rs10766075, rs7396943, rs11824092, rs11600996, rs11022780, rs7107287, and rs1982350) and two SNPs of the *TIM* gene (rs10876890 and rs2279665); No association was found with any of the polymorphisms of the *CLOCK* and *PER3* genes | Case-only analysis of lithium-treated patients |
| Mitjans et al., 2015 (Mitjans et al., 2015, 3) | 131 bipolar patients treated with lithium | *IMPA2*, *INNP1*, *GSK3ß*, and *GRIK2* genes | Significant association for rs669838-C (I*MPA2*), rs909270-G (*INPP1*), rs11921360-A (*GSK3ß*) and rs28522620 (*GRIK2*) with lithium nonresponse; Significant association for the haplotypes rs3791809-rs4853694-rs909270 (*INPP1*) and rs1732170-rs11921360-rs334558 (*GSK3ß)* and lithium response | Case-only analysis of lithium-treated patients |
| Kotambail et al., 2015 (Kotambail et al., 2015) | 151 patients treated with lithium | *GADL1* (glutamate decarboxylase-like protein 1) gene | No evidence for association of  rs17026688 and rs17026651 | Case-only analysis of lithium-treated patients (good responders and poor responders) |
| Geoffroy et al., 2016 (Geoffroy et al., 2016) | 223 bipolar patients treated with lithium | *RORA* (RAR-related orphan receptor-a) and *PPARGC1A* or *PGC*-*1α* (Peroxisome Proliferator-Activated Receptor Gamma, Coactivator 1 Alpha) genes | rs17204573 of RORA and rs9291455 and rs10517026 of PPARGC1A showed associations with lithium response | Case-only analysis of lithium-treated patients |
| Song et al., 2016 (Song et al., 2016) | 323 bipolar patients treated with lithium and 6684 controls | *SESTD1* (SEC14 and spectrin domains 1) gene/ chromosome 2q31.2 | rs116323614 located in an intron of SESTD1 is associated with a lithium-responsive subtype of bipolar disorder | Case-control analysis of lithium-responder treated patients versus controls |
| [Hou et](https://www.ncbi.nlm.nih.gov/pubmed/?term=Hou%20L%5BAuthor%5D&cauthor=true&cauthor_uid=26806518) al., 2016 (Hou et al., 2016) | 2563 bipolar patients treated with lithium | *AL157359*.4 and *AL157359*.3 genes (lncRNA genes)/ Chromosome 21 | Robust association of rs74795342 and rs75222709 of the AL157359.3 gene and rs79663003 and rs78015114 that lie between these two lncRNA genes with the continuous lithium response | Case-only analysis of lithium-treated patients |
| Benedetti et al., 2018 (Benedetti et al., 2018) | 158 patients affected by a major depressive episode in the course of bipolar I treated with lithium | Homer 1 gene / chr. 5q14.2 | rs7713917 influenced long term effects of lithium on white matter structure; Lithium treatment increased axial diffusivity more in AA patients than in G\*carriers | Case-only analysis of lithium-treated patients |
| Szczepankiewicz et al., 2018 (Szczepankiewicz et al., 2018) | 93 bipolar patients treated with lithium | *CRHR1* (Corticotropin-releasing hormone receptor 1), *AVPR1b* (Arginine vasopressin receptor 1B), *FKBP* *5* (FK506 binding protein 5), *FKBP4*, *BAG1* (BCL2-associated athanogene 1), *STIP1* (Stress-induced phosphoprotein 1), *GLCC1* (Glucocorticoid-induced transcript 1), *DUSP1* (Dual specificity phosphatase 1), *SRSF* 3 (Serine and arginine-rich splicing factor 3), *SRSF9*, *SRSF5*, and *ACP1* (Acid phosphatase 1) genes | Significant association between three *FKBP5* polymorphisms (rs1360780, rs7748266, and rs9296158), one *ACP1* variant (rs300774) and one *GLCC1* variant (rs37972) and the degree of lithium response, No association was found between the other analyzed gene polymorphisms within *CRHR1, AVPR1β, FKBP4, BAG1, STIP1, DUSP1, SRSF3*, and *SRSF5* and the lithium response | Case-only analysis of lithium-treated patients |
| Pisanu et al., 2018 (Pisanu et al., 2018) | 205 bipolar patients treated with lithium | *ZNF493* (Zinc finger protein 493) gene / Chr 19p12 | rs12975981 was significantly associated with lithium response | Case-only analysis of lithium-treated patients (responder and non-responders) |
| Reinbold et al., 2018 (Reinbold et al., 2018) | 2563 bipolar patients treated with lithium | *micro*-*RNA* genes | No association between miRNAs and treatment response to lithium in BD in either of the tested conditions withstood multiple testing correction | Case-only analysis of lithium-treated patients |
| Amare et al., 2018 (Amare et al., 2018) | 2586 bipolar patients treated with lithium | Genes*:*  *MEF2C/ Chr 5;*  *CMAHP/ Chr 6;*  *HCG4/ Chr 6;*  *EPHX2/ Chr 8;*  *GRAMD1B/ Chr 11;*  *MYO1H/ Chr 12;*  *ADAMTSL3/ Chr 15;*  *ERCC4/ Chr 16;*  *FAM178B/ Chr 2;*  *ZNF804A/ Chr 2;*  *MAIP1/ Chr 2;*  *CCNH/ Chr 5;*  *HCG4/ Chr 6;*  *HLA-DMA/ Chr 6;*  *ADCY1/ Chr 7;*  *FAM177A1/ Chr 14* | According to order of the genes: rs324899; rs6942227; rs142425863; rs59724122; rs61123830; rs7959663; rs66486766; rs7405404; rs6728642; rs62200793; rs7588746; rs3919583; rs144373461; rs209474; rs1521470; rs79403677, an inverse association between genetic loading for schizophrenia risk variants and response to lithium in patients with bipolar affective disorder | Case-only analysis of lithium-treated patients and cross-trait meta-analysis of GWAS on lithium treatment response in patients with BPAD and GWAS on SCZ (36,989 patients with SCZ) |
| Miranda et al., 2019 (Miranda et al., 2019) | 286 and 68 bipolar patients treated with lithium (Retrospective and Prospective studies, respectively) | *CACNG2* gene | Top retrospective SNP (rs140040) and top prospective SNP (rs2283967) were associated with lithium response | Case-only analysis of lithium-treated patients (good responders and poor responders) |
| Pisanu et al., 2019 (Pisanu et al., 2019) | 24 bipolar patients treated with lithium | *miR*-*320* and *miR*-*155* genes | miR-320a and miR-155-3p, as well as three of their targeted genes (*CAPNS1* (Calpain Small Subunit 1) and *RGS16* (Regulator of G Protein Signaling 16) for miR-320, SP4 (Sp4 Transcription Factor) for *miR-155*-3p), might be involved in modulating lithium response | Case-only analysis of lithium-treated patients (excellent responders and non-responders) |
| Jacobs et al., 2020 (Jacobs et al., 2020) | 5 members of a family of lithium response discordant bipolar monozygotic twins | *NF1* (Neurofibromin type 1) gene / 17q11.2 | Association of a non-synonymous single-nucleotide variant (nsSNP) causing p.Asp1067-Val and a frameshift mutation due to deletion (CAGAG/Del) (p.Asp1067fs) with poor response to lithium | Case-control analysis of lithium-treated patients versus healthy controls |

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