Appendix 2. Loci or genes tested in association with nonsyndromic high myopia

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| --- | --- | --- | --- | --- | --- | --- |
| **CHR** | **Loci/Location** | **Gene** | **Method** | **Best SNP** | **Best p value** | **First author, year** |
| 1 | 1q32.2 | CD55 | A | NO | p>0.05 | Ye, 2015 |
| 1 | 1q43 | CHRM3 | A | CNVs | 5.00E-03 | Lin, 2012 |
| 1 | 1q32.1 | FMOD | A | NO | p>0.05 | Yip, 2011 |
| 1 | 1q32.1 | FMOD | A | NO | p>0.05 | Lin, 2009 |
| 1 | 1p12 | HSD3B1 | A | NO | p>0.05 | Chen, 2011 |
| 1 | 1p32.1 | JUN | A | NO | p>0.05 | Yiu, 2013 |
| 1 | 1q41 | LYPLAL1 | Meta | rs4373767 | 4.38E-07 | Feng, 2013 |
| 1 | 1q24.3 | MYOC | A | NO | p>0.05 | Yang, 2014 |
| 1 | 1q24.3 | MYOC | A | NO | p>0.05 | Dai, 2012 |
| 1 | 1q24.3 | MYOC | A | rs2421853 | 6.00E-03 | Vatavuk, 2009 |
| 1 | 1q24.3 | MYOC | A | NO | p>0.05 | Zayats, 2009 |
| 1 | 1q24.3 | MYOC | A | rs235858 | 4.00E-06 | Tang, 2007 |
| 1 | 1p36.22 | PTCHD2 | A | PTCHD2 | 3.60E-07 | Gong, 2016 |
| 1 | 1p34.3 | RSPO1 | A | rs4074961 | p<0.001 | Li, 2016 |
| 1 | 1q41 | SLC30A10 | Meta | rs4373767 | 4.38E-07 | Feng, 2013 |
| 1 | 1q41 | TGFB2 | A | rs7550232 | 1.78E-02 | Lin, 2009 |
| 1 | 1q41 | ZC3H11B | Meta | rs4373767 | 4.38E-07 | Feng, 2013 |
| 1 | 1q41 | ZC3H11B | A | rs994767 | 1.00E-03 | Li, 2016 |
| 1 | 1p22.2 | ZNF644 | A | NO | p>0.05 | Wang, 2016 |
| 2 | 2q36.3 | IRS1 | A | rs3745551 | 1.71E-02 | Liu, 2015 |
| 2 | 2q37.1 | PRSS56 | A | rs1550094 | 1.70E-03 | Gong, 2016 |
| 2 | 2p23.1 | SRD5A2 | A | NO | p>0.05 | Chen, 2011 |
| 2 | 2q22.3 | ZFHX1B | Meta | rs13382811 | p<1.0E-7 | Khor, 2013 |
| 3 | 3q12.1 | C3orf26 | A | NO | p>0.05 | Li, 2016 |
| 3 | 3p24.2 | RARbeta | A | NO | p>0.05 | Ding, 2010 |
| 4 | 4q28.1 | FGF2 | A | NO | p>0.05 | Lin, 2009 |
| 4 | MYP11/4q25 | ESTs-BI480957 | GWAS | rs10034228 | 7.70E-13 | Li, 2011 |
| 4 | 4q21.21 | LOC100506035 | A | rs9307551 | 9.84E-04 | Ye, 2015 |
| 5 | 5p15.2 | CTNND2 | A | rs1479617 | 1.26E-02 | Yu, 2012 |
| 5 | 5p15.2 | CTNND2 | A | rs6885224 | 5.39E-06 | Lu, 2011 |
| 5 | 5p15.2 | CTNND2 | GWAS | rs12716080 | 1.14E-05 | Li, 2011 |
| 5 | 5p15.2 | CTNND2 | A | NO | p>0.05 | Wang, 2016 |
| 5 | 5q31.2 | EGR1 | A | NO | p>0.05 | Yiu, 2013 |
| 5 | 5p13-p12 | FGF10 | A | rs339501 | 3.90E-04 | Yoshida, 2013 |
| 5 | 5p13-p12 | FGF10 | A | rs339501 | 8.00E-03 | His, 2013 |
| 5 | 5q35.3 | GRM6 | A | rs11746675 | 3.00E-03 | Wang, 2016 |
| 6 | 6p12.3 | CRISP3 | A | CRISP3 | 4.30E-06 | Gong, 2016 |
| 6 | 6q25.3 | IGF2R | A | NO | p>0.05 | Liu, 2015 |
| 6 | MYP2/6q22.33 | LAMA2 | A | rs2089760 | 3.00E-03 | Zhao, 2011 |
| 6 | 6p21.1 | TCTE1 | A | rs2297336 | 3.70E-06 | Gong, 2016 |
| 6 | 6q25.2 | VIP | A | NO | p>0.05 | Yiu, 2013 |
| 7 | 7q33 | CHRM2 | A | NO | p>0.05 | Lin, 2012 |
| 7 | 7q31.2 | C-MET | A | NO | p>0.05 | Yanovitch, 2009 |
| 7 | 7q21.11 | HGF | A | NO | p>0.05 | Yang, 2014 |
| 7 | 7q21.11 | HGF | A | rs3735520 | 2.77E-03 | Yanovitch, 2009 |
| 7 | 7q21.11 | HGF | A | NO | p>0.05 | Wang, 2009 |
| 7 | 7q21.11 | HGF | A | HGF5–5b | 4.00E-03 | Han, 2006 |
| 7 | 7p12.3 | IGFBP1 | A | NO | p>0.05 | Liu, 2015 |
| 7 | 7p12.3 | IGFBP3 | A | NO | p>0.05 | Mak, 2012 |
| 7 | 7q31.2 | MET | A | rs38857 | 6.40E-03 | Yang, 2014 |
| 7 | MYP4/7q36.3 | VIPR2 | A | rs2071625 | 0.0008 | Yiu, 2013 |
| 7 | MYP4/7q36.3 | VIPR2 | GWAS-Meta | rs2730260 | 8.95E-14 | Shi, 2013 |
| 8 | MYP10/8p23 | MIR124–1/MSRA |  | rs55864141 | 1.30E-07 | Meng, 2012 |
| 8 | MYP10/8p23 | MIR4660/PPP1R3B | | rs17155227 | 1.07E-10 | Meng, 2012 |
| 8 | 8q24.12 | SNTB1 | Meta | rs6469937 | p<1.0E-7 | Khor, 2013 |
| 8 | 8q24.12 | SNTB1 | GWAS-Meta | rs4455882 | 2.13E-11 | Shi, 2013 |
| 8 | 8q12.1 | TOX | A | NO | p>0.05 | Ye, 2015 |
| 10 | 10q24.32 | CYP17A1 | A | NO | p>0.05 | Chen, 2011 |
| 10 | MYP15/ 10q21.1 | ZWINT/MIR3924 | GWAS | rs3107503 | 1.54E-07 | Meng, 2012 |
| 11 | 11q24.1 | BLID | A | NO | p>0.05 | Zhao, 2010 |
| 11 | 11q24.1 | BLID | GWAS | rs577948 | 2.22E-07 | Nakanishi, 2009 |
| 11 | 11q12.3 | CHRM1 | A | NO | p>0.05 | Lin, 2012 |
| 11 | 11q12.3 | CHRM1 | A | S4 | 2.38E-08 | Lin, 2009 |
| 11 | 11p11.2 | CHRM4 | A | NO | p>0.05 | Lin, 2012 |
| 11 | 11p15.5 | IGF2 | A | rs2070762 | 8.50E-03 | Liu, 2015 |
| 11 | 11p15.5 | INS | A | rs2070762 | 8.50E-03 | Liu, 2015 |
| 11 | 11q24.1 | LOC399959 | A | NO | p>0.05 | Zhao, 2010 |
| 11 | 11q23.3 | MFRP | A | NO | p>0.05 | Metlapally, 2008 |
| 11 | 11q22.2 | MMP3 | A | NO | p>0.05 | Liang, 2006 |
| 11 | 11p15.5 | NAP1L4 | A | NAP1L4 | 3.60E-06 | Gong, 2016 |
| 11 | MYP7/11p13 | PAX6 | Meta | rs644242 | 1.40E-02 | Tang, 2014 |
| 11 | MYP7/11p13 | PAX6 | A | rs644242 | 4.50E-03 | Miyake, 2012 |
| 11 | MYP7/11p13 | PAX6 | A | NO | p>0.05 | Dai, 2012 |
| 11 | MYP7/11p13 | PAX6 | A | Haplotypes | 6.28E-23 | Jiang, 2011 |
| 11 | MYP7/11p13 | PAX6 | A | rs662702 | 7.00E-03 | Liang, 2011 |
| 11 | MYP7/11p13 | PAX6 | A | (AG; n) repeat | 1.20E-02 | Ng, 2009 |
| 11 | MYP7/11p13 | PAX6 | A | rs3026393 | p<0.0070 | Han, 2009 |
| 11 | MYP7/11p13 | PAX6 | A | NO | p>0.05 | Kanemaki, 2015 |
| 11 | 11q24.1 | NA | A | rs577948 | 2.93E-02 | Yu, 2012 |
| 12 | 12q13.11 | COL2A1 | A | NO | p>0.05 | Wang, 2012 |
| 12 | 12q21.33 | DCN | A | NO | p>0.05 | Yip, 2011 |
| 12 | 12q21.33 | DCN | A | NO | p>0.05 | Chen, 2009 |
| 12 | 12q21.33 | DCN | A | NO | p>0.05 | Wang, 2006 |
| 12 | 12q21.33 | DCN | A | rs7441 | 4.00E-03 | Zhang, 2009 |
| 12 | 12q21.33 | DSPG3 | A | NO | p>0.05 | Chen, 2009 |
| 12 | 12q21.33 | DSPG3 | A | NO | p>0.05 | Wang, 2006 |
| 12 | 12q21.33 | EPYC | A | NO | p>0.05 | Yip, 2011 |
| 12 | 12q23.2 | IGF1 | A | Haplotypes | 3.70E-09 | Mak, 2012 |
| 12 | 12q23.2 | IGF1 | A | NO | p>0.05 | Rydzanicz, 2011 |
| 12 | 12q23.2 | IGF1 | A | rs6214 | 2.00E-03 | Metlapally, 2010 |
| 12 | 12q23.2 | IGF1 | A | NO | p>0.05 | Wang, 2016 |
| 12 | 12q23.2 | IGF1 | A | NO | p>0.05 | Yoshida, 2013 |
| 12 | 12q23.2 | IGF-1 | Meta | rs12423791 | p>0.05 | Guo, 2015 |
| 12 | 12q23.2 | IGF-1 | A | NO | p>0.05 | Miyake, 2013 |
| 12 | 12q23.2 | IGF-1 | A | rs12423791 | 4.00E-03 | Zhuang, 2012 |
| 12 | 12q23.2 | IGF-1 | A | NO | p>0.05 | Zhang, 2015 |
| 12 | 12q21.33 | KERA | A | NO | p>0.05 | Yip, 2011 |
| 12 | 12q21.33 | LUM | Meta | rs3759223 | 2.00E-03 | He, 2014 |
| 12 | 12q21.33 | LUM | Meta | rs3759223 | p>0.05 | Li, 2014 |
| 12 | 12q21.33 | LUM | Meta | rs3759223 | 2.50E-02 | Deng, 2014 |
| 12 | 12q21.33 | LUM | Meta | rs3759223 | 2.00E-02 | Feng, 2013 |
| 12 | 12q21.33 | LUM | A | NO | p>0.05 | Park, 2013 |
| 12 | 12q21.33 | LUM | A | NO | p>0.05 | Dai, 2012 |
| 12 | 12q21.33 | LUM | A | NO | p>0.05 | Yip, 2011 |
| 12 | 12q21.33 | LUM | A | Haplotypes | 2.08E-05 | Lin, 2010 |
| 12 | 12q21.33 | LUM | A | c.1567 C>T | 1.60E-03 | Lin, 2010 |
| 12 | 12q21.33 | LUM | A | rs3759223 | 2.83E-04 | Chen, 2009 |
| 12 | 12q21.33 | LUM | A | NO | p>0.05 | Wang, 2009 |
| 12 | 12q21.33 | LUM | A | rs3759223 | 2.83E-04 | Wang, 2006 |
| 12 | 12q21.33 | LUM | A | NO | p>0.05 | Okui, 2016 |
| 12 | 12q21.33 | LUM | A | −1554 T/C | p<0.01 | Liao, 2013 |
| 12 | 12q21.33 | LUM | A | rs3759223 | p<0.001 | Zhang, 2009 |
| 12 | 12q21–23 | PPFIA2 | A | rs17306116 | 2.65E-05 | Hawthorne, 2013 |
| 12 | 12q21–23 | PTPRR | A | rs3803036 | 5.65E-03 | Hawthorne, 2013 |
| 12 | MYP3/12q21–23 | UHRF1BP1L | A | rs7134216 | 2.74E-03 | Hawthorne, 2013 |
| 12 | 12q13.11 | VDR | A | Fok1 | 3.50E-02 | Annamaneni, 2011 |
| 13 | MYP20/3q12.12 | MIPEP | GWAS | rs9318086 | 1.91-E16 | Shi, 2011 |
| 13 | 13q32.3 | ZIC2 | A | rs8000973 | 7.16E-07 | Oishi, 2013 |
| 14 | 14q24.3 | FOS | A | NO | p>0.05 | Yiu, 2013 |
| 14 | 14q21.2 | FSCB | A | FSCB | 1.50E-07 | Gong, 2016 |
| 15 | 15q26.1 | ACAN | A | rs1516794 | 2.36E-02 | Yang, 2014 |
| 15 | 15q26.1 | ACAN | A | NO | p>0.05 | Yip, 2011 |
| 15 | 15q14 | ACTC1 | A | NO | p>0.05 | Chen, 2015 |
| 15 | 15q25.2 | AP3B2 | A | AP3B2 | 1.60E-07 | Gong, 2016 |
| 15 | 15q14 | CHRM5 | A | NO | p>0.05 | Lin, 2012 |
| 15 | 15q14 | GJD2 | GWAS | rs11073058 | 2.70E-09 | Miyake, 2015 |
| 15 | 15q14 | GJD2 | A | rs634990 | p>0.05 | Qiang, 2014 |
| 15 | 15q14 | GJD2 | A | NO | p>0.05 | Chen, 2015 |
| 15 | 15q14 | GJD2 | A | rs11073058 | 2.90E-02 | Li, 2016 |
| 15 | 15q14 | GJD2 | A | NO | p>0.05 | Li, 2015 |
| 15 | 15q14 | GJD2 | A | rs634990 | 1.80E-03 | Gong, 2016 |
| 15 | 15q14 | NA | A | rs634990 | p<8.81E-7 | Jiao, 2012 |
| 15 | 15q14 | NA | A | rs634990 | 8.78E-07 | Hayashi, 2011 |
| 15 | 15q21.2 | CYP19A1 | A | NO | p>0.05 | Chen, 2011 |
| 15 | 15q25 | NA | A | NO | p>0.05 | Jiao, 2012 |
| 15 | 15q25.1 | RASGRF1 | Meta | rs8027411 | p<0.01 | Chen,2015 |
| 15 | 15q25.1 | RASGRF1 | A | rs8027411 | 1.20E-02 | Qiang, 2014 |
| 15 | 15q25.1 | RASGRF1 | A | rs4778879 | 3.40E-07 | Oishi, 2013 |
| 15 | 15q25.1 | RASGRF1 | A | NO | p>0.05 | Chen, 2015 |
| 15 | 15q25 | NA | A | rs8027411 | 3.10E-02 | Hayashi, 2011 |
| 15 | 15q26.3 | IGF1R | A | NO | p>0.05 | Wang, 2016 |
| 16 | 16q12.2 | MMP2 | A | NO | p>0.05 | Gong, 2013 |
| 17 | 17q21.33 | COL1A1 | A | NO | p>0.05 | Zhang, 2011 |
| 17 | 17q21.33 | COL1A1 | A | NO | p>0.05 | Vatavuk, 2009 |
| 17 | 17q21.33 | COL1A1 | A | NO | p>0.05 | Nakanishi, 2009 |
| 17 | MYP5/17q22-q23.3 | COL1A1 | A | rs2269336 | 4.80E-03 | Inamori, 2007 |
| 17 | MYP5/17q22-q23.3 | COL1A1 | A | NO | p>0.05 | Liang, 2007 |
| 17 | MYP5/17q22-q23.3 | COL1A1 | Meta | rs2269336 | 3.00E-02 | Gong, 2016 |
| 17 | MYP5/17q22-q23.3 | COL1A1 | Meta | NO | p>0.05 | Jin, 2016 |
| 17 | 17q21.2 | HSD17B1 | A | NO | p>0.05 | Chen, 2011 |
| 17 | 17q21.2 | IGFBP4 | A | NO | p>0.05 | Mak, 2012 |
| 17 | 17p12 | SHISA6 | A | rs2969180 | 3.30E-02 | Oishi, 2013 |
| 17 | 17p12 | SHISA6 | A | NO | p>0.05 | Ye, 2015 |
| 18 | 18p11.31 | LAMA1 | A | NO | p>0.05 | Sasaki, 2007 |
| 18 | MYP2/18p11.31 | TGIF1 | A | NO | p>0.05 | Hasumi, 2006 |
| 18 | 18p11.31 | TGIF1 | A | rs4468717 | 9.00E-03 | Ahmed, 2014 |
| 18 | 18p11.31 | TGIF1 | A | NO | p>0.05 | Wang, 2009 |
| 19 | 19p13.2 | INSR | A | rs3745551 | 1.71E-02 | Liu, 2015 |
| 19 | 19p13.2 | RDH8 | A | rs3760753 | p>0.05 | Yu, 2010 |
| 19 | 19q13.2 | TGFB1 | A | rs4803455 | 1.00E-02 | Khor, 2010 |
| 19 | 19q13.2 | TGFB1 | A | rs4803455 | 1.00E-03 | Zha, 2009 |
| 19 | 19q13.2 | TGFB1 | A | NO | p>0.05 | Wang, 2009 |
| 19 | 19q13.2 | TGFB1 | Meta | rs4803455 | p<0.01 | Meng, 2015 |
| 19 | 19q13.2 | TGFB1 | A | Codon 10 | p<0.001 | Lin, 2006 |
| 19 | 19q13.2 | TGFB1 | A | rs1982073 | 1.00E-03 | Rasool, 2013 |
| 21 | 21q22.3 | UMODL1 | A | NO | p>0.05 | Zhu, 2012 |
| 21 | 21q22.3 | UMODL1 | A | rs2839471 | 2.70E-04 | Nishizaki, 2009 |
| 22 | 22q11.23 | ADORA2A | A | NO | p>0.05 | Chen, 2011 |
| 22 | MYP6/22q12 | CRYBA4 | A | rs2009066 | 1.54E-05 | Ho, 2012 |
| 21 | 21q22.3 | COL18A1 | A | NO | p>0.05 | Sandhya, 2007 |
| 22 | 22q12.1 | ZNRF3 | A | NO | p>0.05 | Li, 2016 |
| 22 | 22q13.31 | WNT7B | GWAS | rs10453441 | 2.90E-40 | Miyake, 2015 |
| X | Xp11.3 | TIMP1 | A | NO | p>0.05 | Liang, 2006 |

Note: CHR, chromosome; A, association study; AL, axial length, CC, Corneal curvature; GWAS, genome-wide association study;Meta: Meta analysis; NA, not available.