

Table 2. Primer sequences and 5' positions within the β -globin locus

| Relevant features | Fragment number | Primer name | Primer sequence | 5' nucleotide |
|-------------------|-----------------|-------------|-------------------------------|---------------|
| None | 001BG | hBG1F | 5'-gaattctaattcctcctc-3' | 1 |
| None | 001BG | hBG2R | 5'-cgcccccttctgtactgg-3' | 985 |
| HS4 | 002BG | hBG3F | 5'-cagggtatatgtagacatctc-3' | 986 |
| HS4 | 002BG | hBG4R | 5'-ctacactcccattgggtgac-3' | 2027 |
| None | 003BG | hBG5F | 5'-tgcaaaatctcggctcactgc-3' | 2028 |
| None | 003BG | hBG6R | 5'-ttaacctactaactgaagac-3' | 3017 |
| None | 004BG | hBG7F | 5'-ctttgtgaagtgaaaactgtg-3' | 3018 |
| None | 004BG | hBG8R | 5'-catccatcacgtatgctc-3' | 4118 |
| HS3 | 005BG | hBG9F | 5'-agtaagagaggagagggaagg-3' | 4119 |
| HS3 | 005BG | hBG173F | 5'-caggagtcttaaggacttg-3' | 4476 |
| HS3 | 005BG | hBG174R | 5'-cataggagtcaaggcactgc-3' | 4850 |
| HS3 | 005BG | hBG10R | 5'-acatcaggctctgagactgg-3' | 5075 |
| None | 006BG | hBG11F | 5'-taatttagcaatggctggg-3' | 5076 |
| None | 006BG | hBG12R | 5'-aatgtagacagtaggagagc-3' | 6101 |
| None | 007BG | hBG13F | 5'-acatgagcttattaactgg-3' | 6102 |
| None | 007BG | hBG14R | 5'-ggcaatacaagacctgag-3' | 7057 |
| None | 008BG | hBG15F | 5'-cagtgacatgcacactggtc-3' | 7058 |
| None | 008BG | hBG16R | 5'-tcagcctccaaagtgtg-3' | 8066 |
| HS2 | 009BG | hBG17F | 5'-ggtgggtggactgctggagc-3' | 8067 |
| None | 009BG | hBG151R | 5'-gctggccagaactgctca-3' | 8576 |
| HS2 | 009BG | hBG152F | 5'-ccctgctggggtcagtgcc-3' | 8577 |
| HS2 | 009BG | hBG175R | 5'-cacattctgtctcaggcatcc-3' | 8853 |
| None | 009BG | hBG154F | 5'-cataaagaaaatggatgcct-3' | 8821 |
| HS2 | 009BG | hBG18R | 5'-agcatgtctcctaacagc-3' | 9204 |
| None | 010BG | hBG19F | 5'-cacatacgggtcagatctg-3' | 9205 |
| None | 010BG | hBG20R | 5'-ttaggctgtgacctctgc-3' | 10596 |
| None | 011BG | hBG21F | 5'-cgaacagaattctgtctgattg-3' | 10941 |
| None | 011BG | hBG155F | 5'-cttctgcttctaccactgc-3' | 11467 |
| None | 011BG | hBG22R | 5'-cgctactttaagtagtatgg-3' | 12022 |
| None | 012BG | hBG23F | 5'-atacccttcaccctgtcc-3' | 12023 |
| None | 012BG | hBG190R | 5'-gttgatatgtgttgactgctc-3' | 12261 |
| None | 012BG | hBG191F | 5'-aaggatgtatgctgacacatcc-3' | 12271 |
| None | 012BG | hBG192R | 5'-cttacataaacatgagtgtc-3' | 12545 |
| None | 012BG | hBG193F | 5'-caattaattgttcatcagtcagg-3' | 12546 |
| None | 012BG | hBG194R | 5'-tggacagccaggaagcacag-3' | 12754 |
| None | 012BG | hBG195F | 5'-gtccaaatctctaatgataagc-3' | 12782 |
| None | 012BG | hBG24R | 5'-ggaacatcacacactggggcc-3' | 13050 |
| HS1 | 013BG | hBG25F | 5'-cctccctgtgtccatggatc-3' | 13051 |
| HS1 | 013BG | hBG176F | 5'-ctgagaaggcaatagcaggagc-3' | 13389 |
| HS1 | 013BG | hBG177R | 5'-gacactagtgtcaccagtctcc-3' | 13678 |
| HS1 | 013BG | hBG26R | 5'-gtgctagaactgagaagtc-3' | 14191 |
| None | 014BG | hBG27F | 5'-tagagtggaatcttagc-3' | 14192 |
| None | 014BG | hBG28R | 5'-agatgatctcatcactcagg-3' | 14977 |
| None | 015BG | hBG29F | 5'-atacaacaaccccttgac-3' | 14978 |
| None | 015BG | hBG30R | 5'-tctcattattgcttcgatgc-3' | 16034 |
| None | 016BG | hBG31F | 5'-ctgcccgcagcctacctgac-3' | 16035 |
| None | 016BG | hBG32R | 5'-aagatctgaatacctatgg-3' | 16914 |
| None | 017BG | hBG33F | 5'-attgcagatattttaattcac-3' | 17219 |

| Relevant features | Fragment number | Primer name | Primer sequence | 5' nucleotide |
|-------------------|-----------------|-------------|------------------------------|---------------|
| None | 017BG | hBG34R | 5'-ccatccatttctaccatttc-3' | 17919 |
| ε-PROMOTER | 018BG | hBG35F | 5'-atggatgtagaacaagccag-3' | 17920 |
| ε-PROMOTER | 018BG | hBG178F | 5'-gagcctcaggatccagcacac-3' | 19299 |
| ε-PROMOTER | 018BG | hBG36R | 5'-gatgccaggcctgagagcttgc-3' | 19540 |
| ε | 019BG | hBG37F | 5'-atggtgcattttactgctgagg-3' | 19541 |
| ε | 019BG | hBG149R | 5'-tccaggggtaaacacagag-3' | 19777 |
| ε | 019BG | hBG38R | 5'-ttgaagtctcaggatccac-3' | 19976 |
| ε | 020BG | hBG39F | 5'-ggtgagttcaggtgctggtg-3' | 19977 |
| ε | 020BG | hBG40R | 5'-tcagtggctactatggccag-3' | 20961 |
| None | 021BG | hBG41F | 5'-gttctctccagtttgcagg-3' | 20962 |
| None | 021BG | hBG42R | 5'-ttgaaccattgtatctgtcc-3' | 22056 |
| None | 022BG | hBG43F | 5'-acccaagaggagcagtgag-3' | 22057 |
| None | 022BG | hBG44R | 5'-ttaattgaaagccctgaagc-3' | 23099 |
| L1 | 023BG | hBG45F | 5'-cataatgacctctgttcc-3' | 23100 |
| L1 | 023BG | hBG46R | 5'-aacaatgagtcgggatagc-3' | 24047 |
| L1 | 024BG | hBG47F | 5'-gaatagggtgcccttccc-3' | 24048 |
| L1 | 024BG | hBG48R | 5'-cggtttacaagacatacc-3' | 24997 |
| L1 | 025BG | hBG49F | 5'-attttctgagtttagtc-3' | 24998 |
| L1 | 025BG | hBG50R | 5'-cacacaccaggcctgtcg-3' | 26067 |
| L1 | 026BG | hBG51F | 5'-atgtcccctccctgttcc-3' | 26068 |
| L1 | 026BG | hBG52R | 5'-ctgaaactgtacccttcc-3' | 27084 |
| L1 | 027BG | hBG53F | 5'-ttttatcatattgctagcc-3' | 27085 |
| L1 | 027BG | hBG54R | 5'-gtcaacaatgaaatcaagac-3' | 28008 |
| L1 | 028BG | hBG55F | 5'-ccaatgatcattcaggagc-3' | 28009 |
| L1 | 028BG | hBG56R | 5'-tcagcagaaacgtaaaagc-3' | 29078 |
| L1 | 029BG | hBG57F | 5'-gaaatctgctgtaaatctg-3' | 29097 |
| L1 | 029BG | hBG58R | 5'-ggagtctgtagacctgatgg-3' | 30025 |
| L1 | 030BG | hBG59F | 5'-aggctgtactgggtttgtc-3' | 30026 |
| L1 | 030BG | hBG60R | 5'-cagattgctcatgtaggacc-3' | 31081 |
| None | 031BG | hBG61F | 5'-cttcttcagagggtgtgtg-3' | 31082 |
| None | 031BG | hBG62R | 5'-tgetcctcctcagactaagg-3' | 32386 |
| None | 032BG | hBG63F | 5'-caccagtctctgacacattc-3' | 32746 |
| None | 032BG | hBG197F | 5'-ggaagatactgataagttgac-3' | 32973 |
| None | 032BG | hBG196R | 5'-cagtatctccagttactcac-3' | 32983 |
| None | 032BG | hBG198R | 5'-tggaatctggcttattggag-3' | 33241 |
| None | 032BG | hBG199F | 5'-gtttctgacgtcataatctacc-3' | 33244 |
| None | 032BG | hBG201F | 5'-caataaaacagtcctgcctc-3' | 33475 |
| None | 032BG | hBG200R | 5'-attgactaatagtccacacac-3' | 33477 |
| None | 032BG | hBG64R | 5'-atgatgtgtattatcactgg-3' | 33708 |
| γG-PROMOTER | 033BG | hBG65F | 5'-cgggtgcctacatacatacc-3' | 33709 |
| None | 033BG | hBG156R | 5'-gttttaggcataggtccagg-3' | 34034 |
| None | 033BG | hBG157F | 5'-acatttcacaatccctgaac-3' | 34035 |
| None | 033BG | hBG158R | 5'-tagcctttgccttgttccg-3' | 34240 |
| γG-PROMOTER | 033BG | hBG159F | 5'-attaagcagcagtatcctc-3' | 34249 |
| γG-PROMOTER | 033BG | hBG66R | 5'-ggcgtctggactaggagc-3' | 34530 |
| γG-PROMOTER | 033BG | hBG160R | 5'-cttcccagggtttctctcc-3' | 34622 |
| γG | 034BG | hBG67F | 5'-atgggtcatttcacagagg-3' | 34531 |
| γG | 034BG | hBG68R | 5'-cttgaagttctcaggatccac-3' | 34967 |
| γG | 035BG | hBG69F | 5'-gtgagtccaggagatgttccag-3' | 34968 |
| γG | 035BG | hBG70R | 5'-tcagtggatctggaggacagg-3' | 35982 |
| None | 036BG | hBG71F | 5'-gctcactgccatgatgcagag-3' | 35983 |
| None | 036BG | hBG72R | 5'-agcgttaagttcataacacc-3' | 37003 |
| None | 037BG | hBG73F | 5'-tgtgtctccagaaaattcac-3' | 37004 |

| Relevant features | Fragment number | Primer name | Primer sequence | 5' nucleotide |
|------------------------|-----------------|-------------|--------------------------------|---------------|
| None | 037BG | hBG74R | 5'-atcttcaaattagttatcc-3' | 38162 |
| γ A-PROMOTER | 038BG | hBG75F | 5'-acagcttgccctccgataagc-3' | 38163 |
| γ A-PROMOTER | 038BG | hBG76R | 5'-ggcgtctggactaggagcttattg-3' | 39466 |
| γ A | 039BG | hBG77F | 5'-atgggtcatttcacagagg-3' | 39467 |
| γ A | 039BG | hBG78R | 5'-cttgaagtctcaggatcc-3' | 39903 |
| γ A | 040BG | hBG79F | 5'-gtgagtcaggagatgttcagc-3' | 39904 |
| γ A | 040BG | hBG80R | 5'-tcagtggatctggaggacag-3' | 40898 |
| γ A 3'-ENHANCER | 041BG | hBG81F | 5'-gcctctgcccattgattcagag-3' | 40899 |
| γ A 3'-ENHANCER | 041BG | hBG180F | 5'-ctgtgagatcaaaatgtagtgg-3' | 41639 |
| γ A 3'-ENHANCER | 041BG | hBG82R | 5'-gcggacttctcactgtg-3' | 41971 |
| None | 042BG | hBG83F | 5'-catctgcaatccaggaagagaacc-3' | 41972 |
| None | 042BG | hBG84R | 5'-ccaaaattaactccggatgg-3' | 43141 |
| None | 043BG | hBG85F | 5'-ataaggtataaggaaggag-3' | 43142 |
| None | 043BG | hBG161R | 5'-ttcattcatatgccatcc-3' | 43459 |
| None | 043BG | hBG162F | 5'-acttcatggatgacatatgg-3' | 43460 |
| None | 043BG | hBG163R | 5'-tcagccaaccaggaattcgg-3' | 43740 |
| None | 043BG | hBG164F | 5'-tggaagatggggcaactgt-3' | 43741 |
| None | 043BG | hBG86R | 5'-tacttgatatattgagagg-3' | 44068 |
| L1 | 044BG | hBG87F | 5'-gactaaaatattgtgtctc-3' | 44069 |
| L1 | 044BG | hBG165R | 5'-ctcatgtgctgcacgtctc-3' | 44359 |
| L1 | 044BG | hBG166F | 5'-acacgtgcagcagcctgtgg-3' | 44360 |
| L1 | 044BG | hBG167R | 5'-aactgggttttattactgtg-3' | 44691 |
| L1 | 044BG | hBG168F | 5'-ttccccttacttcctagt-3' | 44692 |
| L1 | 044BG | hBG88R | 5'-cgatctctgctcactgcagc-3' | 45022 |
| L1 | 045BG | hBG89F | 5'-cgccactgcacactccagcc-3' | 45023 |
| L1 | 045BG | hBG169R | 5'-atccaggtggcctctcagg-3' | 45457 |
| L1 | 045BG | hBG170F | 5'-tctatcagaactcgaatgtc-3' | 45458 |
| L1 | 045BG | hBG90R | 5'-agtgtcagatctgggagttcc-3' | 45709 |
| L1 | 045BG | hBG171R | 5'-ctgcccagaatctcacctcc-3' | 45800 |
| ψ η | 046BG | hBG91F | 5'-gtagtgcatctcactgtgac-3' | 45710 |
| ψ η | 046BG | hBG92R | 5'-ccaggaagtctcagggtcc-3' | 46145 |
| ψ η | 047BG | hBG93F | 5'-tgagttagtaagtaactcagc-3' | 46146 |
| ψ η | 047BG | hBG94R | 5'-tcagtggctcttggggctac-3' | 47124 |
| None | 048BG | hBG95F | 5'-gttccctgtccactatgtttg-3' | 47125 |
| None | 048BG | hBG96R | 5'-ccttttaactgtgtttgc-3' | 48170 |
| None | 049BG | hBG97F | 5'-ctgagattaggaacagc-3' | 48171 |
| None | 049BG | hBG184F | 5'-tgtgtccaccccaagagctc-3' | 48841 |
| None | 049BG | hBG98R | 5'-tacaagacagcagttgagtg-3' | 49023 |
| None | 050BG | hBG99F | 5'-gcatacattaattaagcac-3' | 49024 |
| None | 050BG | hBG100R | 5'-ggtccatcaaggaaaggaca-3' | 50104 |
| None | 051BG | hBG101F | 5'-aaccattatcagttactcaacc-3' | 50105 |
| None | 051BG | hBG102R | 5'-aattatttgagctttgtacc-3' | 50872 |
| None | 052BG | hBG103F | 5'-gtgaattttgtagaagg-3' | 51206 |
| None | 052BG | hBG104R | 5'-ggaaagaatagcatctactc-3' | 51960 |
| None | 053BG | hBG105F | 5'-caaatcctctcaatgcaatcc-3' | 52296 |
| None | 053BG | hBG106R | 5'-gtagaattgataaattacgg-3' | 53285 |
| δ -PROMOTER | 054BG | hBG107F | 5'-tgttgtaagcatttaagtgg-3' | 53286 |
| δ -PROMOTER | 054BG | hBG181F | 5'-aacaactgctgaaagagatcgg-3' | 54506 |
| δ -PROMOTER | 054BG | hBG108R | 5'-ggtgtctgtttgaggttgc-3' | 54789 |
| δ | 055BG | hBG109F | 5'-atggtgcatctgactcctgag-3' | 54790 |
| δ | 055BG | hBG110R | 5'-cctgaagtctcaggatccac-3' | 55232 |
| δ | 056BG | hBG111F | 5'-gtgagtcaggagatgcttc-3' | 55233 |
| δ | 056BG | hBG112R | 5'-tcaatgttactgtgagcc-3' | 56295 |

| Relevant features | Fragment number | Primer name | Primer sequence | 5' nucleotide |
|----------------------|-----------------|-------------|------------------------------|---------------|
| None | 057BG | hBG113F | 5'-gatcctggactgttctctg-3' | 56260 |
| None | 057BG | hBG114R | 5'-cacggagtgtgtgtgtgc-3' | 57032 |
| None | 058BG | hBG115F | 5'-ctttataagcaattctgcc-3' | 57033 |
| None | 058BG | hBG116R | 5'-gctcggcacatgtcccatcc-3' | 58022 |
| None | 059BG | hBG117F | 5'-aacacaattactatatgctagg-3' | 58023 |
| None | 059BG | hBG185F | 5'-taatgaacaaggtgcagactg-3' | 58864 |
| None | 059BG | hBG118R | 5'-agtaaacaactcagcagc-3' | 59110 |
| None | 060BG | hBG119F | 5'-gagagattgtgtatctgcg-3' | 59111 |
| None | 060BG | hBG120R | 5'-ccttcttaagacttacc-3' | 59974 |
| None | 061BG | hBG121F | 5'-tgacaatttctccaatcagg-3' | 59975 |
| None | 061BG | hBG122R | 5'-aattaaacagcaaaggtagc-3' | 60949 |
| β -PROMOTER | 062BG | hBG123F | 5'-acatctttaatagcaggaagc-3' | 60950 |
| β -PROMOTER | 062BG | hBG182F | 5'-caattgtactgatggtatgg-3' | 61907 |
| β -PROMOTER | 062BG | hBG124R | 5'-ggtgtctgtttgaggtgc-3' | 62186 |
| β | 063BG | hBG125F | 5'-atggtgcacctgactcc-3' | 62187 |
| β | 063BG | hBG126R | 5'-cctgaagtctcaggatcc-3' | 62631 |
| β | 064BG | hBG127F | 5'-gtgagtctatggacccttg-3' | 62632 |
| β | 064BG | hBG128R | 5'-ttagtgatactgtgggcc-3' | 63610 |
| β -3'-ENHANCER | 065BG | hBG129F | 5'-gctcgcttcttctgtgcc-3' | 63611 |
| β -3'-ENHANCER | 065BG | hBG188F | 5'-tcacagtgacccggaatctgc-3' | 64280 |
| β -3'-ENHANCER | 065BG | hBG189R | 5'-tgctaataactgcagagccag-3' | 64570 |
| β -3'-ENHANCER | 065BG | hBG130R | 5'-actgcagagccagaagcacc-3' | 64562 |
| None | 066BG | hBG131F | 5'-tattagcatagtgttacc-3' | 64563 |
| None | 066BG | hBG132R | 5'-tttgcaaatTTTaaataac-3' | 65489 |
| L1 | 067BG | hBG133F | 5'-tttagatggagtttgctc-3' | 65511 |
| L1 | 067BG | hBG134R | 5'-atcgattgtgtatatgcag-3' | 66585 |
| L1 | 068BG | hBG135F | 5'-tacacaattaggtgtgaagg-3' | 66586 |
| L1 | 068BG | hBG136R | 5'-tcaagcctggacaatggtgg-3' | 67535 |
| L1 | 069BG | hBG137F | 5'-gcaggtaaacaaagccgcc-3' | 67536 |
| L1 | 069BG | hBG138R | 5'-ccatcactttcagctacacc-3' | 68598 |
| L1 | 070BG | hBG139F | 5'-ggagaatgaaccaagtgg-3' | 68599 |
| L1 | 070BG | hBG140R | 5'-cagtgggtgttaaagtctcc-3' | 69622 |
| L1 | 071BG | hBG141F | 5'-tcaacattagacagatcaacg-3' | 69623 |
| L1 | 071BG | hBG142R | 5'-tgttattggtctattcagag-3' | 70531 |
| L1 | 072BG | hBG143F | 5'-ggctctgaaattgaggca-3' | 70532 |
| L1 | 072BG | hBG144R | 5'-taagcatggaatgttctcc-3' | 71584 |
| L1 | 073BG | hBG145F | 5'-tgggtaggaagaatcatatcg-3' | 71585 |
| L1 | 073BG | hBG146R | 5'-gagatggtatctcattgtgg-3' | 72508 |
| L1 | 074BG | hBG147F | 5'-acaccagttagaatggcga-3' | 72509 |
| L1 | 074BG | hBG150F | 5'-ggcagggatagcactaggag-3' | 73066 |
| L1 | 074BG | hBG148R | 5'-gttaactgactgagaaaacac-3' | 73308 |