Supplementary Materials

Supplementary file 2

(Predicted) ORF Sequences of the Immune-Signature Genes Analyzed in Table 1.

In cases where GenBank accession numbers are not given, the sequences were assembled from SRA reads.

Elephant Shark

T_H1-Signature Genes

T-bet (XM_007909399)

ATGTTCCCGTTCCTGAGCTTTAACATCACGGGGCTGGAGCCCACGGCTCACTACAATGTCT
TTGTGGACGTGGTCCTGGCTGACCAGCATCACTGGAGGTACCAGGGCGGCAAGTGGGTGC
AGTGTGGCAAGGCGGAGGGCAGCATGCAAGGTAACAGGACGTACATGCACCCAGACTCG
CCCAACACTGGAACCCATTGGATGCGGCAGGAAATCTCGTTCGGGAAACTCAAACTGACG
AATAACAAGGGAGCGTCCAACAATGTCACTCAGATGATCGTGCTCCAGTCGCTGCACAAG
TACCAGCCACGGCTGCACATTGCGCCGGTGAAGGAGGACGGCTCTGACGACCCCTATCTC
ACCCCCAAGCTTCAGGCCTTCAGCTTCCCCGAGACTCAGTTCATCGCTGTCACCGCCTACC
AGAATGCAGATATCACACAGCTCAAGATTGATCACAATCCCTTTGCCAAAGGATTCCGAG
ACAACTTTGACTCGTGA

STAT1 (XM_007890161)

ATGTCTCAGTGGTATGAGTTACAACAGTTGAATTCCAAGTTCCTGGAGCAAGTCGATCAG
CTTTACGATGACAACTTTCCAATGGAAATCAGACAGTATCTTGGACATTGGCTGGAGACC
CAGGATTGGGAGCACGCTGCTACGAATGACTCCATGGCCACTCTGCTCTTCCATGAAATG
TTGGTGCAGCTGGATGATCAGTACAGCCGCTTCACCTTGGAGAACAACTTCTTACTACAG
CACAACATCAGAAAAATCAAACGCAATCTTCAGGTTTTCTTCCAGGAAGATACTATTTATA
TGGCGTTGACGATATCCAACTGCCTTAAGGAAGAAAAGAAAATTCTAGACAATGCTCAGA
AAGCTGAACAGAACCACATTGGTCATATCCAGAACACTGTTATCCAGGATAAACAAAAG
AAGCTTGACCAGAAAGTGAGAAACGTGAAGACTGGCGTCCAGGAAATTGAACAGGAAAT
CAAATCTCTTGAAGATCTTCAGGATGAATTTGACTTCAGATCCAAAACGCTGCAGAGTCG
AGAGTTGGAAGTGAACGGCTTGGCTCAAAATGAGATTAAACAAGAAAAGCTTCAAATCC
ACAACATGAAGTTGACTCTGGATAAGAAACGAAAGGAAGTGATCAACAAAACCGCTTGTC
TCCTGAATGAAACGGAACAGATTAATGGCATTCTGATCAACGAAGAACTATTGGAATGGA
AACGTCGGCAGCAGATTGCTTGCATCGGAGGACCTCCAAACACTTGTCTTGACCAGCTCC
AGAACTGGTTCACACTGGTGGCTGAGAGTCTGCAGCAGGTTCGACAGCAGCTGAAAAAG
CTGGAAGAATTGGAGCAGAAATATTCGTACGAAGGAGACCCCATCACCCAAAACAAGCAG
TTCCTAGAGGAACGAAACAACAACTTGTTCTGCAACCTTATTGTGAGTTCCTTTGTGGTAG
AGAGGCAGCCTTGCATGCCCACCCACCCCCAGAGGCCGATGGTCCTGAAGACCGGCGTCC
AGTTCACTGTGAAGCTCAGACTCCTGGTCAGGCTCCCCGAGCTAAACTATCAGTTGCGGG
TGAAGGCGTTATTTGACAAGGATGTCACTGAAAAGTGTTCGGGAAAGGGATTTAGAAAAT
TTAACATACTTGGGACAAACACAAAGGTCATGAACATGGAGGAATCAACTAATGGAAGT

TTGGCTGCAGAGTTCCGACATCTGCAACTGAAGGAGCAGAAAAATGCAGGCACCAGAAC
GACTGAAGGCCCTCTCATTGTGACTGAGGAGCTTCACTCCATCAGCTTTGAGACTCAGTTC
TGTCACCAAAACCAGATAATAGATCTTGAGACTACATCTCTCCCGTTGGTTGTCATCTCCAA
TGTTAGCCAGCTCCCCAATGGCTGGGCCTCTATTCTCTGGTACAACATGCTCGTAAGCGATT
CCAAGAACTTGGCATTTTTCAACAACCCCCCAGTTGCCAAGTGGAGTCAGCTGTCTGAGGTA
CTGAGCTGGCAGTTCTCCTCGGTCACCAAGAGAGGCCTTAGCGTCGAACAGCTCAGTATGC
TGGGCGAGAAATTGCTAGGTCTGAATAACTGCTTCAATGATAATGGGATTCCATGGACAA
GATTCTGCAAGGAGAATCTAAATGAAAAACCTTTCTCATTCTGGCTCTGGATCGAAGGGA
TTTTAGAATTGATTAAAAAACATCTTCTTCCTCTCTGGAATGATGGCTGTATCATGGGGTT
CGTAAGTAAGGAGAAGGAGCGAACTTTGCTGAAGGACAGAAACCCGGGAACCTTTTTACT
GAGGTTCAGTGAGAGCAGCAGAGAAGGTGCCATCACGTTTACCTGGGTAGAGAAGTCAC
CAACTGATGAGTCTCAGTTTCATTCGGTGGAACCGTACACAAAGCATCAATTATCCGCAG
TTACCTTCCCAGACATCGTTCGGAATTACAAAGTCATGGCAGCCGAGAACATTCCGGAAA
ATCCACTGAAGTACCTGTACCCTGATCACCCCAAAGATCAGGCATTTGGAAAGTATTACTC
CAGACCAAAAGATCCTGCAGAGCCTATGGATGTGGATGATTCCAAGACCAGTGGTTACAT
AAAGACTGCACTCATTTCAGTGTCTGAAGTTCACCCATCTAGGCTGCAGTCAACAGAAAAT
CTTCTACCTATGTCCCCAGAAGAGTATGGTGAACTCGAACGTCAACTGAGTCCATCTGAAA
TGGACACAGTGATGTGCTCATATTCAAATTAA

STAT4 (XM_007890162)

ATGTCCCAGTGGCATCAACTGCATCAGCTGGACTCCCAGTTCCTGGAACAAGTGGACCAG
ATGTACGATGACACTTTTCCCATGGAAGTCCGACAGTTCCTAGCACATTGGTTGGAAAACC
AAGACTGGGAACTTGCGTCAAGGAATGAATCTTTGGCCACACTTCTGTTTCATAATTTATT
AAAACAAATAGACGACCAGTACAGCCGCTTCTCTATTGAAAAAAACTTCTTACTTCAGCAC
AATCTGAAAAGAATTAAACAAAACCTTCAGGTACAGTACCTGGGGAACCCTTTGCACATG
GCATCAGTTATCGCTGCCTGCTTGAGGGAAGAGCAGAGGATTCTGGCAGCAGTGAACACA
CCGGAGCAGGGGGACGAGGAAAAAATCATGCAGAACTCAATGATTTCGGAAAGACAGAG
AGAACTGGAACAGAGAATGACAGCCATGAAATCCAATGTACAGGTGGTCGAACAGGATG
TAAAGTTCCTCGAGGACCTGCAGGATGAATTTGATTTCAGATACAAGACACTACAGACAC
AAGAACACTGTGATAGGAACAGTATTCATGTGAAGGAGGAAGTTTTCCGGTTACAAGGAA
TGCTTAACCAACTGGATCATAAAAGAAAGGAGATTCTCCAAAAAATCACAGAACTGTTGA
ACCAAATGGATTTTCTCATGAACAGACAACTGATAGAAGAGCTGATAGAATGGAAGCGG
CGACAGCAGATCGCCTCCATCGGAGGGCCTCTGAACACATGCCTCGATCAGCTGCAGAAC
TGGTTCACGATGCTAGCAGAGAGCCTGTTTCAGGTCAGGAGACAAGTGAAAAAACTGGA
AGAGCTGCTGCAGAAGGTGACTTATGAAGGTGATCCTGTTCCACTGCAGAGACCCCACTT
GGAGGAAAAAGTAAACATTTTGATCTACAGCCTCATCAAAAGTTCCTTTGTGGTGGAAAG
GCAGCCTTGCATGCCCACCCATCCCCAGAGACCCATGGTCCTCAAGACTGGAGTCCAGTT
CACTGTCAAAATAAGGTTTTTGGTAAAATTGCCCGAACTGAACTATCAGCTAAAAGTGAA
AGCTACAATTGACAAGGAAAGTCTAACTGCAAGAGGCTATCGTAAGTTCAATATCCTAGG
CACTAATTGCAAAGTAATGAACATGGAGGAGTCAGTGAATGGAAGCCTTTCTGTGGAATT
CAGGCATTTGCAACTCAAAGAACAGAAATCCTCTACAGGAACCAAAGGAAATGAGGGTCC

TCTGATTGTGACAGAAGAGCTCCATTCAATCAATTTTGAGACACAGTTTTGTCACCAGGAT
TTAACAATAGATTTAGAGACCAGTTCTTTGCCTGTCGTAGTCATCTCCAACGTGTGTCAGC
TACCCAGCGGCTGGGCCTCTGTTATATGGTACAACATGCTGATGAACGACCTCAAGAATTT
GGCTTTCTTCACCAACCCGCCTGCTGCCATTTGGAGTCAGCTTTCAGAGGTGCTGAGCTGG
CAGTTCTCATCTTATGTGGGTCGAGGTCTCAATTCTGACCAACTAAACATGTTGGCAGAG
AAACTACTTGGACAACAACTGAATTATAATGATTGCCAAGTTTCGTGGAGTAAATTCTGT
AAGGAGACCCTCCCTAATCGGTTCAGTTTCTGGCTTTGGTTGGATGGGATCTTGGAACTG
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GAGAAGGAGCGAGCTTTACTGAAAGACAAGCTGCCAGGGACGTTTTTACTGAGGTTCAG
CGAGAGCAGCAGGGAAGGCGCTATCACATTTACTTGGGTGGATCGGTCAGAGAATGGGG
AAATGAGACTTCATTCAGTGGAACCTTACTCCAAGAGTCAGCTGTTAGCTGTTCCTTTGC
CTGACATCATTCGCGACTACAAAGTAATGGTGGCTGAGAACATTCCAGAGAACCCCCTGC
AGTACCTGTATCCTGACATCCCGAAGTATAAAGCCTTTGGCAAACATTACAACAATAAGC
CGAAAGAAGTTTCTGAGCCCACAGAGACAGAGAAGAAAGGGTATATCTCCTCAAGGTTT
ATCCCGTTCTCTGAATTTCCAAATGCTTCCACAGCCCCAGTTTCCTCATCAGACCTACTTC
CCATGTCACCGGGAGTATATGCTGAACTGAAACAGCAACTGAGTCCAGCAGAAATCGAG
ACTGCTGTATGTTTTGAAGAAATGATTTGA

<u>IFNγ (XM_007904994)</u>

ATGAAGCTGTGTTTCATCATTGGGTTGGTCACTTGTCTACTATTACTGGGCTCTGCGAGCT
GTGACCGTCTGCAGGACGAAATTAATAACCTGAAATCGCACTTTGATACAAGCAGTCATG
AGGTGGCTGACGGTGGGCCGCTATTTTTGAATATGCTGGAGAAGTGGAAGGGCTCGCCTG
AATCGGGGATTGTGTTTCATCGGATACTACTCTGGTACGAAAATTTCTTTAAAAACATCAA
AGGGGCTCCTGGAAAGAACAAGGAACTGGACATTAGCAACATTGGGAATCTCATTTCTAA
GTGGATAGTAGAGGACAGATACAAACCAGTGGAACTGAAATATGATCTCGATAAATTAGA
CAATATTCAGTGGAATAAACAATTAGTCCAACGCAAAGCAGTCCTTGAACTTGAAATGCT
ACTACCAAGAATGAATGTAAATGGGAGAAGAAGACGCAGAAGCAACATGGGAGGTAGA
AGGCGATCAAGGACTTAA

T_H17-Signature Genes

<u>IL-17A like 1 (SINCAMT00000016888)</u>

ATGGTGATGTTGAAATGGGTGCTGTGCTTTGTGCTGGCCATCACTCTGCCGTGTGTGTCAG
CACGAGGAGCTCACAGGAGAGGCTGTGGGAGACAAGTCGGCCGGAGGTGCTCAAAGCAG
CAGAAGTTCATGCTGAGGTTCAGAGAAGCAAAGCCCCTGTCAACCTGGCTCCCTGGGAAC
TCTGGCTATAGCAACCGCTCCATCTCCCCCTGGGTCTACAGGAAAGATGTTGACCCTGACC
GGTACCCAGACATCATAGCGATGGCGGAGTGTATCCACACTCACTGTGTCACTGCTCAGGG
GCACCTGGACCTGGGCCTGAACTCACGCCCAGTGCAGCAGGAGATGGTAGTGCTGAGGAG
GCAGCGCCATGGCCACAAGCTCACCTACCTGGTGGACAAGATGGTCGTTCCCATCGCCTG
TGTGTGTGTCCGTCCCCAGTTAGTTCAGGCCTGA

IL-17A like 2 (SINCAMT00000018117)

ATGATGGTTAAAGCCGCCCTGAGCTTTGTGCTGGTCATGGCTGCGCTGTGTGTGTCGGCG
AGAGCTGCTCCCACCAAAGGCAGTGGGAAAGCAGACCAGGAGGGGGGCCGGGAGCGAG
GCCGCTACCAACATCAGCCAAAGTACACGCTGAGCTTCAGAGAGAGCCCCGGGAGCAGC
GACTGGAGCCGAGGTCACAGCCAGGACCAGGGCCACGGCCAGGGACATGCAGGCATCAA
AAGCCGGTCCATCTCACCGTGGATTTACAAGAACAATTATGACCCTGATCGATACCCAGC
CACCATCTGGGAGGCTCACTGCGTCCACTCACACTGTATCAACGCCAGAGGCAAACTGGA
TGAAGACCTGAACACACAGCGAGTCTGGCAGAGAGTGCTGGTCCTCAGGAGAGAGTCCA
GCGCCAGCAAACTCAACTTCCTGGTGGAGGAGATACCGGTACCAGTCGCCTGTGTGTGTG
TCCGCGCTCGCGTTCTCCAGGCCTGA

IL-21L (Dijkstra *et al*. 2014 [1])

ATGAACAGGATCATCTTTTACAGCTTCATCCTCGCTGCTTTCATTGCTGTTCTTCATGCAGC
TCCCAGACGTGATCATGTGGTTCTGAAAGAGATGATGAAGGATGTCCGAAATTTGAAAAA
AATGTTTGGGCAATCTGGCGTTACAGTTCGCACTACAGAAAGCAAATTGGATAACCTTTCC
TGTTACATGGCCGAACTAAAAGGCCTCAAGAAATCCCGGATGCAAATTAATACCGTAGAA
AAACTGAACAGAAAAGCAAAACAGCTGAACCTTTTAAATATCGACTGCCCCAACAGTGAA
AATTACATGAAGAACAGCCTCGAACAGTTCCTGAATCAATTTTATGTACATCTGCAAAAG
AAATTCCATGCAGCTGTCAAGGTCGGTCAGCAGCTCAATAAAGTTCAGGTGAACATTTAA

IL-22 (XM_007904995)

ATGCCTTGCCTTTGGAGTCCAGCAGTATTGGTCCTTGGCTATGCCACTCTCCTGGTCAACT
GTGCACCGTGTAAGGAGTCTTGCCATGTGGATAAATATTACATGCATTTCATGCGACCCA
CTATCTTTGACCTGTCAAAAGAGGCTCAAGAGCATGACAAGGATACAGCAACAAGACTGAT
AGGAAAGAAGCTGTTCCAGGGTCTTCAGGAAGAGGACAAATGCTATCTGCTCCACAAAGT
TGTTGACTTCTATTTGAGAAATGACCTGGCATCTGAAGAACTGCACAGGAAATATTCACAT
ATCAAAAAAGTCAGGGAGGCGTTTACCACTCTGAAAATGAGCATATCTAAATGTGATGTT
CAAGAAATGAAGAAAGTAGATCACAAACTTGAAGAGCTAGAACGGGAAGTGAGGAAGCT
CGGAAAGAACAGAGAGGCCAAGGTTGTAGGAGAGCTGTACATGCTATTTCAGGATATAGG
GAAATATTGTTCAAAACCAAGAACTGGAAAGAAAGATTGA

T_{reg}-Signature Genes

Foxp3 (XM_007885996)

CTAACCGCTGAGCTGCAGGACGGCACAGATGAAACGTTAACGTGGATTAACCCTTTCCGT
TCCTCGCCACAGAAACCAGGGGAGGCCGGAGCGAGCAGCGTGTTCGAGGAGAACAGAGT
GGGTGTCAGAAACAGCGGGAAAGCTTGGACTCAAGTCTGGGACAAACACACCACTCTCT
ACCCAGACGTGAGTTCGAATCTGGAATATTACAGAGTCTATAATATCAGGCCACCGTTTA
CATACGCAGCTCTGATCAGATGGGCTATTCTGGAGACCAGTGAGAAACAGATGACTCTGA
ACGAAATCTATCTCTGGTTCACAAGGAAGTTTGCTTTCTTTCGCAACAACACAGCTACCTG

GAAGAACGCGGTGAGGCACAATCTGAGTCTCCACAAGTGTTTTGTGAGAGTGGAGAATAT
GCGAGGAGCTGTGTGGACAGTGGACGAAATGGAGTTTCAGAGACGGAAATCACCGAAAA
TCACCAGCAGAGACATGCAAATGAGATGGGAGTCGCACTAA

IL-10 (XM_007899549)

ATGCAGCGTGCAACTGTTGTTCTGTGGATGCTGCTCACGCTGTTTAATATTCAGTGTTGCT
GTTGCAGTCATAGACAGGCAGCTGGGCTATGCCTTAGCACATCTGTGCTGCATATTCATCT
CAGAGAACTCAGGACAGCTAATCAGAAAATAAGCAGCTATTTTCAAAGGAGAGACGGCA
ATATTCGTGTATCGCTGCTGAGAGGGAAATTTCAGCATGAATTTAAGGGTCGTTTAGGAT
GTCAGTTTTTGAAGGAAATGTTAGATTTCTACCTCAGTCACATAATCCCAGCCGCCAAGAC
GCAAAGCAAAGCCTACAACACCCACATCAGTAAAATCGGGAACACGCTGTTCGAACTAC
AACAGAACATAGAGAATTGCCACCAACTCTTTAACTGTGACACCTGCAACTGCAATCGCA
GTAATTACATCGAGGAGATATACAACATGTACAAGAAGTTGCAGGATAAAGGTATATAC
AAGGCTATGGGAGAGCTCAACACCTTTATTGACTGGCTCGATAGGTTTCTGTCGATGAAA
CTGAAAGGAGCGAACAAGAAGAGAAAGTGA

TGFβ1 (fragment on scaffold_19954)

ATGCATAACCTGTCCTCCCACAAAGACGAAAAAAACTGCCGCGTCCATCAGTTGTACATA
AACTTCCGGAACGATTTGGATTGGAAATGGATCCACGAACCCAAAGGATATTACGCCAAT
TTCTGTATGGGGCCCTGTCCTTATATCTGGAGCGCAGACACCCACCA

T_H2-Signature Genes

GATA3 (XM_007885971)

ATGGAAGTGGATCAGCCGCGTTGGATGACACATCACCATCCAGCGGTGTTAAATGGACAG
CACCCGGATTCTCACCATCCCGGGCTCAGCCATGGCTATGTGGACTCCTCGCCCTATCTCC
CGTCCGAAGAAGTGGATGTACTGTTCAACATCGACAGCCAAGGCAACCACGTCTCGTCTT
ATTATGGCAACTCGGTCAGAGCCGCCGTTCAGAGATATCCACCGCCACATCACGGGAGTC
AGGTCTGCCGTCCTCCCTTGCTTCACAGCTCCCTGTCCTGGATAGATGGAGGCAAGGCTCT
TGCCTCCCACCACAATGCTTCGCCATGGAATCTGAGTGCTTTCAGCAAGGCCCCCCTTCAC
CACGGCTCCCCGGGGGCTCTTTCAGTCTACCCTCCATCCTCCTCCTCGTCCCTCTCCACAG
GACATTCCAGCCCCCACCTGTTCACCTTCCCCCCGACCCCACCCAAGGATGTCTCCCCCGA
CCCTAACATCTCCGGTGCTGGATCCAACGGCTCGGGCCGACAGGAGGACAAGGAGTGCGT
GAAATATCTGACCGAGGGAATGAAACTGGAGACATCCTCTCACCTGAGAGGCAGCATGG
GATCACTAGGAGGAGGTGCGAGCTCGGCACATCACCCCCTGGCTTCTTACCCGCCTTACG
TCTCAGAGTATGGCGCTGGGCTGTTCCCCCCTGGCAGTCTGTTGGGTGCGTCTCCCCCAGG
CTTCCCTTCGAAAGCAAGACCCAAGGCCCGCTCCAGCACAGGGGATCGGGAAAAAATAC
CTCGGGACTGTAAATTGCACCATTTGGAGGTTGACCGAGCAAGCTGTAGTGAGCTGGGCA
TTTGTTCATTCGACATTTTAATAGAAGGTCGTGAATGTGTGAACTGTGGAGCCACTTCTAC
TCCACTGTGGAGAAGAGATGGGACAGGACATTATCTGTGCAATGCCTGTGGTCTGTACCA
CAAAATGAATGGGCAGAACCGACCACTCATTAAACCCAAGAGGAGATTGTCTGCTGCCA

GGCGAGCGGGCACATCATGTGCTAACTGCCAAACGACCACCACCACATTGTGGAGAAGG
AATGCCAATGGGGACCCTGTGTGCAACGCGTGTGGATTGTATTACAAACTACACAACATT
AACCGACCACTGACCATGAAGAAGGAAGGCATCCAGACGAGGAACAGGAAGATGTCCAG
CAAATCCAAAAAGGCCAAAAAATGCCACGACGGGCTGGATGAGTTCTCGAAGAGCCTGA
TGGAGAAAGCGAGCTCCTTCAGCCCTGCCACGCTCTCAAGACACATGTCTCCCATCGGGC
ACATCCCACACTTCAGCCATGCAGGCCACATGCTGTCGACACCGACACCCATGCACCCCT
CGTCCGGCCTCTCCTTCGGACCCCACCATCCCTCCAACATGGTCTCCGCCATGGGATAA

STAT6 (SINCAMT00000012771)

ATGTCTCTCTCTAACCGCCGGTGGCTGTTCCAGGACCGGTTGCCGTTCCACATCCCGGAGC
GAGTGCTGTGGGGAGCCATGTGTCGGACGCTGGACATGAAGTTCACGGCGGAGGTTCAG
GCTCCACAAGGTCTGTGCCCCGAACACTTCCTCTTCCTCGCTCAGAAGGTGTTCGACGAAC
AGACTTACAGCCAGGACTTCAGTGCCAGGATGGTGTCCTGGTCACAGTTTAACAAGGAGA
ATTTACCGGGGAGAACGTTCACTTTCTGGCAGTGGTTTGACGGGGTGATGGAGCTCACCA
AAAGACACCTGAAAGATTACTGGAACAACGGGTAG

IL-4/13A (contig_23087; Dijkstra *et al.* 2014 [1])

ATGTCGAAGGCCGTGAGCATCATGATCGTTCTGATGACAGTCTTCGCCAGAAGCGACTGC
GGAGTTCTGAGAGAGATATTATCCAAACGGCAGGCCATGGGGGAACTCATTCAAACTCTG
TTACAGTTAACTGCAGGAGAGGTTGCTTGTGGTAACACCATGGTGGCTGATGTTGTATTTG
CTGGAAACGCGGCACCTGAATCGTTCTGCAAAGCTGCTAGAGCGTTGCTGCAAGCACCTT
CGTGCAAACCCATTGAACAGCAACTGAACAACCTGATCATAAACCTGCAAATAACAGGA
GTGGAGACATCCAACTGCTCCCTTGACGAAAATTCTGAGGTTGAAATGAGCACCTTTCTG
ATAAGCCTGAAGAAATTCTGCAAAAAAGTCTTCAGCTTGCAATAA

IL-4/13B (XM_007902042; Dijkstra *et al.* 2014 [1])

ATGGCTCACATACTGAAAGCTGCAGCTCTCCTCTCTATCCTATTGAGTGCTGTGTGTGCCA
CTCAGATCACCACAAAGGCCAGACATCAGTCTCTGAAGGAGATCATCAGTACCATCCGGC
ACATTTTAGAAAACCAGGTTCATCATCATCAAAACCACGTGCCAGAGATATTCGAGGACG
TAAAGGATCGCAGTGATTCAGAGGTTTTTTGCAAAGCGGCCCAAGTCCTGGAGTTGCTTC
CATTTTACAATAACCTCAAAGAATTGCACAAACTTCGACACAACCTAATTCACATGGGAG
GGCAGATAACTGAGTGTGAAGTCAGTGAACTTTCTCAGGTCGAGTTCAAAAACTTTCTGA
AAAGACTGTTGAACTTCTCCCAGAAGAAATTTAGGACAAATGGTGACAAGAATCATTTGA
CGACAAAATCGAAGGGTTGA

IL-4/13C (contig_23087; Dijkstra *et al.* 2014 [1])

ATGAAGCCACTTACAATCGCGTTCATGTTTCTCGTCCTGACCTTCTCCGAAGGCTGCAAAT
GCAGGGCAGTGACTGAAATTATCACAGACCTGGGCTTTCTGGAAAAACACATGGCAAAA
CTGGTCCCGGTCATTTGGAATGAAAACATCAGAcCATCCAACGGGTCTGTTTCTTGCAAAT
CCCACGATGTGCTGAGAAAGACTGTGTTGAACAGAAGTGGCTTCGTAGCGAAACGTACTG

AGCAATTGATCCACAACCTTTTAGCTGTGGGCAGTGTGAATCAGACGTGCGTGCTGAACG
CGCGGTCGGAAATCGACCTGCCCGCCCTGCTGAAAAGCCTGAAGAACGAAATGAGGCGG
AGGTTGTGA

IL-4/13D (XM_007902044)

ATGACTATGATGCTGAAAATTTTGACTGTTCTCACTGCCATGCTGGCTGTCAGCTATGGAA
AGGTTGACCCCAAGAAACATATCTTAAGGGAAATCACCAAAACTCTGGGACATATGACCC
AGGACAAGATTGAATGTGGTGCTACTCTAATCCCAGATGTCTTCAGTGATACGAAGGGGC
AGAGTGCATCGGAAATCTTTTGCAAGGCTGCCGAAGCTCTGGTGAAAATACCTCCCTGCG
AGTCCATCAAACGTCACTTGAAGGCTCTGAGATTAAACTTAGCGAAGGAGGGTGAACAG
ACTCTCAGCTGCCCTGTGAATAAATTCTCTGAAATCGAGCTGACTACTTTCCTGAGGAAGT
TGAGGAAGCTCTCGCAACAGAAATACAGACAATAA

IL-5A (contig_23082; Dijkstra *et al*. 2014 [1])

ATGACCAAAATGATCTGCGTCTACGTACTTCTCTTTAACAGTTTTTTGTTTGTGTTTGGCCG
AAACACTCACCCTTGCAGCAGGCCTCAGATTTATGAAACGATCAACGCCATCAAGAAACA
TGAACAGGATATAATAAAGAAGCTGCCAGCTGAACTGGAATCACCAATCAACGTTGACG
ATGAAAATTGCAAGCAGCAAATCAACAGCACATTCTATAAAGGGTTGAAGCCACTGTACG
AGACGGATTTGAAGCCTATTGCTGAAGAGATACTTTCAAACATGACCAATGACAAAGCCG
ACGTCCAGGATAAACAAAGCGACTGCAACCAGAACGTGCAAACAGTGAACGGGGCCAAG
TTCCTGAAAAGGTTTCTGAACTATCTATTCAGCAAAATGTCCCGCATGAGCCGCAGGAGA
CGGAGCCTGAAACAAATTCTGGCTAACTTCCATTAA

IL-5B (contig_23081 and 23082; Dijkstra *et al*. 2014 [1])

ATGATCAGCTTCTATATGCTTTTGTTTGCCAGCTCTTTGTTCACATTGGGCTGCTCTAGAAA
GCCCTGCCACTATTCCACGATTTGCGAAATGTTAAAAGAATTGAAAAAAGTGGAGAAACT
CGTTCTACCAGGTAACCTGCAAGCACCAATCAATGTTGAAAATAAGCAATGCGTCCAAAC
GATCATCGGCATATTCAACAGAGGATTCAAGCAACTGAAGAAAGAGCTGCACAAACGAG
ACCCGACAACGTCGGACATTTTTTGCATAATACTTTCCAACCTGCATTATGAGGAAATGCA
CCCCAAGTTGCCTTTCCAGAACAAACATAGTTCGTGCACAGCGAGTGACATAAACGTGGA
AGAAATGAACAGCGCCAAATTTCTGAAAAAATTCAAGAACTTCTTACAAGCTTACTACAA
CACTCTGTTGAACCAGAATAAAGAAAGGAAACGTTGA

Golden Mahseer

T_H1-Signature Genes

T-bet

atgggcggcATAGGCAGGAATTTGTATCTCAATATGTTGAATGGAACAGACGCGCAAAGTTTC
GCCAAAGACGCAGAACTGAACAGCCACCTGCACCGAAACCGCGACTTACCGGACTTCAA
AATGGGCATCCAAGACACGAGGTTTTACTACCAGGACTCGATTCCAAATGGACAGGACAG

TTTGACGTTGCCGTTCCATGCTGAACACCACCAAAGTGCCGGAGCACAGACGGGGAGGTT
TTACGCACCGACTCCGCTCGGCAGCTGTCACTTCACCAGCCGGAGCGGGACGGGACATAC
TTACGTTCCAGCCGGAGCCGACGCGTATTCTTCAGCCAACGGTAAAGACGTGTACCCGAG
CAGCGCAGACGGCTACCCGACGTCTTTTCAGCACGGGTATCCGCGAGCACCGATGTACTC
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GCAAAGTTCCACAAGTACCAGACAGAGATGATCATAACGAAACAAGGACGGAGGATGTT
CCCTTTCCTCAGCTTTAACATCAGCTCACTGGACCCCTCGGCTCATTATAACATATACGTG
GACGTGGTTCTTGCAGACCAGCATCACTGGAGGTACCAAGGAGGCAAATGGGTCCAGTGC
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ACAAAGGCAGTTCTAACAATGTAGCACAGATGATAGTGCTGCAGTCGCTCCATAAATACC
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CCCCCTGTCTCAGAGTCGTTTCTACAGCCGCGAGCCGGTCAGCATGACCCAGCAGTGCCC
CAAAGACCCTGCCGCCAGCCCTCACAGCCGCTTTTACCTGCCCAGCCAGCAGGGGGTGCC
GCCAAACCGCCTCGACTTCAACGCATACGAGAGCGAATACACTTCCAACAACCTCTACAA
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CAGTACCTTAATCACCCACACCACAGTAAACCCGGGTCTAGTCTTGGCTGGTTCCGAACC
ATCTCGTCCCCAGCCGCGTCTTCGTCTCCCTCAGCGACAAACTCGCGCTTCCATTCCTCCC
CGTCGCTCCTGGATCCCCAGCGCCAGCCGCTGCTCCAAGACAAGTCCAAAGAGTCTGGGG
AGGACACCTGGATGGAAGCCCCCTCGGTTAAATCGGTGGACTCAGCTGACTCAGGTTTGT
TCGAGGGAGGAGAGAGCAAGAAGAGGCGCGTGTCGCCTTACACGTCCAGCACGGAAAAT
TCCCCTCCCAACCGCAGTGCAGAGGCTTGCGAAAAGGACAATTGCAGTGACGCGGGCTAC
TACGGCTTCTACACCCACTGA

STAT1

ATGAGTCAGTGGTTGGAGCTTCAACAACTGGATTCAAAGTTTTTGGAACAGGTCGACCAA
CTGTACGATGACAGCTTTCCAATGGCCATCCGGCAGTACCTCAGCAGCTGGATAGAAAGC
CACGACTGGGATCATGTTGCAAATGTGGAGAACGAGTCTCTGGCCACCGTGAGGTTTCAT
GATCTTTTGACCCAGTTGGATCACCAACACAGTCGCTTCGCGATGGAGAAAGACTTCCTG
AACCAGCACAACATCCGCAAGATCAAGAGGAACTTGCAGAGCCTCTTCCAAGACGATCC
GGTTTCCATGGCGATGATCATAAGTAGGAACCTTAGCGAGGAAAGGAAGATTCTGGCCGC
TGCTCAAGTGTCAGAGAATCGAACCGAAAGCACCCAAAATGACATGATCGTGGAGAAAC
ATCGAGAAATGGATGGAAGGGTGAAAGACATAAAGATGAAAGTACAGGACACAGAGCA
GACTATCAAAAATCTAGAAGACCAGCAAGACGAATACGACTTCAAGAGCAAAACTCTAC
AGAGCAGAGAGGAACTGAACGGGACCATTTCAAAGGAAGACCTGAACCGTGAGAGACTG
ACTATCCGTGCCATGTTTATGAAACTCAACGACACAAGAATAAATGTGATCAGCCAGATG

TCAGAGGTGTTGAACATTATAGATCCGGTGATCTTTGAGCTCATTTCTACAGAATTAGGCG
AATGGAGGCGCCGTCAACAGATGGCTTGCATCGGTGGACTAACCAATGTCTGCTTAGACC
AGCTGCAGAACTGGTTTACTTCTCTAGGAGAATCTCTGCTTCAGCTCAGGCAGCAGCTCA
AGAAACTTCTGGAGCTGGAGCAGAAATTCACATACGACAGCGATCCAATCACCCTCAGCA
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STAT4

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<u>IFNγ</u>

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T_H17-Signature Genes

IL-17A/F1

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IL-17A/F2

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IL-17A/F3

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IL-21

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IL-22

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T_{reg}-Signature Genes

FoxP3

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IL-10

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TGFβ1

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T_H2-Signature Genes

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STAT6

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IL-4/13A

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IL-4/13B

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IL-5fam?A

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IL-5fam?B

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Northern Pike

T_H1-Signature Genes

T-bet (XM_010866213)

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STAT1 (XM_010866213)

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STAT4 (XM_010890773)

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IFNγ (XM_010882688)

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ATTCAAGGGAAGGCCCTCTCCCAGTTGAGGACCATGTACGAGGAGGCCTCCAAACTGGCC
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T_H17-Signature Genes

IL-17A/F1 (GATF01011446)

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ACATAGACCCTAAAGGCTTGGTTCCTTCCCGTCCGATCAGGCCTATTGGGAACCATTCAAT
CTCCCCATGGACTTACCACACAACGCATGACGAGAGTCGTTTTCCCAGTGTCATCTCTGAG
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IL-17A/F2 (GATF01034854)

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IL-17A/F3 (XM_010883130)

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IL-21-1 (XM_010893846)

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IL-21-2 (XM_010893845)

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IL-22 (GATF01012417)

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T_{reg}-Signature Genes

FoxP3-1 (XM_010875638)

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FoxP3-2 (XM_010875638)

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IL-10 (XM_010874587)

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TGFβ-1 (XM_010898895)

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T_H2-Signature Genes

GATA3 (XM_010901334)

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STAT6 (XM_013136358)

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<u>IL-4/13A (GATF01012417)</u>

ATGAAGACTTTGATCTTTCTGCTTTCGGTTAACCTGGCGCTGGTTGTCACTGCAATTCCGTT
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TGAGACCACAAATAAATGCAAGGACTTCTTTTGTGAAGTTGAGGCAGTTTTGGCATCTCT
GGAGCATCACTTCTTTGGTAAAAGGGGAGAGATTGTCCGATCACTGGAACAGTACAACAA
ACATATGAATTGCCCCAATGCGAATCACAGCCAAGGCAACCAAGTGGAGCTGAAGAGAC
TTCTACATGACCTTAAAGGATGTGGCCAGAAAATCAACTCCAATAAGGTTTAG

<u>IL-4/13B-1 (AZJR01088263)</u>

ATGAAGACTGTTGCTCTCCTCTTTTTTGCAATTGCATTAGGGTACAGTGCACCTATTACTG
AACCCACTGAACACAAGTATGAGCATCGGCTACTTAAAGATATCATGGATGATGTCACGG
AACTGCTCAAAGGCCCAAAGAAACTTTTGGACATGACAGTGCCTAAGGGATTCGATAAAT
ATAAGTGCTGTAGAAACGGGCAGCCTGAAGAGTTCTGCATAGCTGAGAAGATTCTGTCTG
ACATAAACTCCACACAGAACGGGATTCCAGAAAAAATTAGGAAAATCAACAGGGTGCTG

AAACAATACAATATGTTTAACCCAACTAACTGTACTGTGACAAAGAACGAAGATGAAGA
GCAGCTAAGAGTTCTTCTTCAAGATCTCGGTTGTTGTGCTCAGGACAAATACTCCCATTGG
AATCACAAAAGAGCCAAGCGTTCTGCCTACAACAAACTTAAAAATACAACATTCTGTATA
AATCAATATTAA

IL-4/13B-2 (AZJR01044272)

ATGAAGACTGTTGCTCTCCTCTTCTTCGCATTTGAACTGGTCTACACTGCACCCACTCAGG
ACGAGCATCATTTATTGAAGAGAATCATGGACACCGTCAACGATCTACTCAAGACAGGCC
CGGAGGAGTTTTTGTCAAGTATTGTGCCGCACCAATTCGATAGAGAACGCTGCGGCCGTA
AAGGGCCTGAAGATTTCTGCATAGCTGAGAAGATTTTGACTGACATAAACTATACAAAGT
ATGGGATTCCAGAAAACAGGGAAATTCACCGGTTTCTGATACAATATAATAAGTTTCATC
CAAACAACTGCACTGTGGACAAAGATGAAGAGGAGGAACAGTTAAGAGCTCTTCTTGAA
GATCTCTACTGCTGTGCTCAAGTCAAATACTCCCGTCGGAATCATAAAAGAGCCCAGCGC
TCTGCTGATCGCAATCAATGGAACATTCACCAATGTGCAAAACAACACTTTTAG

Rainbow Trout

T_H1-Signature Genes

T-bet (NM_001195793)

ATGGGCGGCATAGGTGGCAATCTTTACCTCAGTATGTTGAATGGGACAGATACGCAAACT
TTCGGAAAAGACACCGATATCAACAATCACCTTCAACGCAGCAAGAATTCCGTGGATTTT
AAAATGGGAATTCAGGACACCAGATTATATTACCAAGACTCAATTCAAAACGGACAGGA
CGGATCGGCACTGCCGTACCACGCAGACCAAACTGTGGCCGGATTCGGAGCGCAACCCG
GGAGGTTTTACTCACCAACTCCCCACAATAGCTGCCATTTCAGCAGTGTCAGGTCGCCGA
CTAGAAACGGAACGGGACAGACTTATTTACCAACGGGAAGCGAAGGTTTCTCGACAACT
AGCAAAGAAGTTTACCCTGCCTCTGCGGAGAGTTATCCCGCACCCGTTCAACATGGGTAC
TATCGCGCGCCACTCTACCCATTACCTGGGCTACAGGTGTGCGGAAAGACGCAGGCTCTC
CTCAACAACTATCCTCTGTGGGCGAAGTTCCACAAATACCAAACCGAAGTGATCATAACG
AAACAGGGGCGGAGGATGTTCCCCTTCCTGAGTTTCAACATCAGCGTTCTGGACCCGTCA
GCCCACTACAATGTGTATGTGGACGTGGTCCTATCCGACCAGCACCACTGGAGGTACCAG
GGAGGCAAGTGGGTCCAGTGTGGCAAAGCAGAGGGTAACATGCCAGGGAACAGGATGTA
TATGCACCCAGACTCTCCCAACACAGGGGCTCACTGGATGAGGCAGGAGGTATCGTTTGG
CAAGCTCAAGCTCACCAACAACAAGGGCAGTGCCAACAACGTGGGCCAGATGATCGTTCT
GCAGTCACTTCATAAGTACCAGCCACGGTTGCACATCGTCGAAGTGAAGGAGGATGGTTC
TGAGGACCTCTTCCTCACCGCCAAGGCCCAGACCTTCATCTTCCCAGAGACCCAATTCATC
GCCGTCACAGCCTATCAGAACGCAGACATCACCCAGCTAAAAATAGACCATAACCCCTTT
GCGAAAGGTTTCCGGGACAATTATGACGCGCTGTACGCACCACCTGACTCAGACCGCGTC
ACCCCCTCTCCCACCGAGGGCCAGCAGCTTTTGGCAGGTACCTGCTATACCCAGGGGTAC
CTGATGGACCAGTACATGAACCCACTGCCCCAGAACCGCTTCTACAGCCGGGAGCACATG
GCAGCCATGGGCCATCAGACCAAAGACCCCTCAGCCAGCCCCCACAACCGCTGGTACCGC

TCCCCCCAGCAGAGTGTCACCTCCAACCGGCTGGACTTTAACTCCTATGAGGGTGACTTCT
CCAGCAACAGCTTCTACAAGCCCTTCCCCCTGCAGACGTCAGCCCACCACACGCTGAGCT
ACTACGAGGACAGCCCGTTCGCCACGGCCAGCGTATCCGTCTCACGAGCCTCCTCGGCAG
CCTGGAGCACCGGCCGGCCCTCCCCTCAGTACCTCAACCATCACTGTTCCAGTAAAGTCG
GCCCCAGTCTAGGCTGGTTCAGGCCTGTGTCCTCTACCTCTCCAGGTCACCCCAGGCTCCA
CCCCCCGTCCCTCCTGGAGCCACTCCGCCCCCCACCTTCACTGCAGGACAAGCCCAAGGA
GGCGGGGGTGGTAGGAGAGGACCTCTGGCTGGAACCCCCCTCGGTCAAATCGGTGGACTC
TGCTGACTCCGGCCTGTTCGAGGACGGGGCAGAGGGCAAGAAGCGACGAGTGTCACCCT
ACGCTTCCAGCACGGAGAACTCGCCGCCCACCCGCAGCGTGGAGGTCTGTGAAAAGGACT
GCAGTAGTGATGCCGGCTACTACGGCTTTTATACCCACTGA

STAT1-1 (NM_001124707)

ATGGCCCAGTGGTGCCAGCTGCAACTACTGGAGTCTAAATACCTGGAGCAGGTCGACCAG
CTCTACGATGACTCCTTCCCCATGGACATCAGACAGTACCTCAGCAAATGGATTGAGAGC
ATCGACTGGGAAAATGTGGCTGTTCAGGACTCCTTAGCAACAGTACGTTTCCATGACCTC
CTAGCCCAGCTGGATGATCAACACAGCCGCTTCGCCCTGGAAAACAACTTCCTGCTACAA
CACAACATCCGCAAGATCAAGAGAAACCTCCAGGACCACTTTCAGGAGGACCCCGTTCAC
ATGGCCATGATCATCTCCAGAAACCTGAAGGAGGAGCAGAAGATCCTGGCTGCTGCCAA
AAGCATAGAGACCAACAGAGAAAACACACAGACTAGCATGGTTCTGGAGAAACAAAAAC
TGGACAACAAAGTCAAAGACATGAAAAACAAGGTTCAGGAAGCGGATCAGAATGTAAAG
TCTCTGGAATACCTTCAAGATGAGCATGACTTTAAGGAAAATACTCTTAAGAACAGAGAA
CATGAAATGAACGGGCTGACACCGAAACAGCTGGAACACGAGAAGCTGCTGATTGCAGA
GATGTGTTTGAAGCTGAAGATCAAGAGAGGGGAAGTGGTTGGCCAGTTGGCGGAGGTGC
TCAACATGGCCGAGGCGGTCCAGTCAGACCTGATCTCAGAGGAGCTGGCGGAGTGGAAG
AAGAGGCAGCAGATCTCCTGTATCGGAGGACCACCCAACGCATGTCTGGACCAACTGCAG
AACTGGTTCACAGCGGTGGCGGAAAGCCTGCAGCAGGTGAGGCAGCAGCTGAAGGAGCT
CCAGGAACTAGAGCAGAAGTACACATACGACAACGACCCAATCAAACAGCAGAAAGGCT
TCCTGGAGGGGCGGGCCCTGACACTGTTCCGGAACCTCCTAGAACATTCCTTGGTGGTGG
AGAGACAGCCCTGTATGCCCACACATCCACAGAGACCTCTGGTGCTGAAGACACAGGTGC
AGTTCACTGTCAAGCTCAGATTTCTTGTGAAGCTCCAGGAATTCAATTATCAACTCAAAGT
GAAAGCTTTGTTTGACAAGGACGTTACAGAAAAGAAAGGGTTTCGTAAGTTCAACATATT
GGGCACCAACACAAAAGTTCTGAATATGGAGGAGTCAAATGGAAGCCTGGCTGCAGAGT
TTCGCCATTTGCAACTGAAAGAGCAGAAAGTAGCCGGCAACAGAACAAATGAGGGGCCT
CTCATTGTGACAGAGGAGCTGCACTGCATCTGCTTTGAGTCTGAACTCAACCAGTCAGGT
CTGGAGCTCAAGCTAGAGACCATCTCCCTGCCCATCGTGGTCATCTCCAACGTCAGCCAG
TTGCCCAGTGGCTGGGCCTCCATCCTGTGGTACAACATGCTGACCAGCGAACCCAAGAAC
CTGAAGTTCTTCCTGAGCCCTCCTGCAGCATCCTGGGGTCAGCTGTCTGAGGTGCTGAGCT
GGCAGTTCTCCTCTGTCACCAAGAGGGGACTCAATGAAGAGCAGCTAGGCATGCTGGCCG
ACAAACTACTGGGCCAGAAAGCACAGAGGAATCCTGAGGGCCTTATCCCCTGGACCAAG
TTCTGTAAGAGTCTCAATGAGAAGAGCTTTCCCTTCTGGCTGTGGATCGAAGCTATCCTGG
ATCTCATCAAGAGACACCTGCTGTCCCTGTGGAACGATGGTTGCATCCTGGGCTTTGTGAG

TAAGGAGAGGGAGAAGGCCCTGCTGACTGGGAAGTGTCCAGGCACGTTCTTGCTGCGCTT
CAGTGAGAGTAGCAGAGACGGAGCCATCACATTCACTTGGGTGGAACACGACCAATACA
ATAAGCCTGTATTCCATGCAGTGGAGCCCTACACCAAGAAGGAACTGTCTGCCGTCTCTC
TGCCTGACATCATCCGCACCTACAAGGTGATGGCAGCTGAGAACATCCCAGAGAACCCAC
TCCGCTTCCTCTACCCAGACATCCCCAAAGACAAGTCCTTCGGAAAGTACTACGCTAGGG
CCTCCGAGGCATCGGAGCCCATGGATGTGGAGGGTTCCAGCAGCACAGGGTACATGAAG
ACAGAACTCATATCAGTGTCAGAAGTTCACCCATCTAGACTGCAAGACAACATGATGCCC
ATGTCGCCAGACGTGTTCGGAGAGCTGAAGAGGAGCGTTGCACCAGTGTTCCAGTGTTGG
ACTGGTCCTAAGGAAATTGATGCTGTGATGACACCTGACTCGGACTGCAACTGA

STAT1-2 (NM_001124746)

ATGGCCCAGTGGTGCCAGCTGCAACTACTGGAGTCTAAATACCTGGAGCAAGTCGACCAG
ATCTATGATGACTCCTTCCCCATGGACATCAGACAGTACCTCAGCAAGTGGATTGAGAGC
ATCGATTGGGAAAATGTGGCTGTTCAGGACTCCTTAGCAACAGTACGTTTCCATGACCTCC
TAGCCCAGCTGGATGACCAACACAGCCGCTTCGCCCTGGAAAACAACTTCCTGCTACAAC
ACAACATCCGCAAGATCAAGAGAAACCTCCAGGACCGCTTTCAGGAGGACCCCGTTCACA
TGGCCATGATCATCTCCAGAAACCTGAAGGAGGAGCAGAGGATTTTGGCTGCTGCCAAAA
GCATAGAGACCGACAGAGAAAACACACAGACCAGCATGGTTCTGGAGAAGCAAAAGCTG
GACAACAAAGTCAAAGACATGAAAAACAAGGTTCAGGAAGCGGATCAGAATATAAAGTC
TCTGGAATACCTTCAAGACGAGCGTGACTTTAAGGAAAATATTCTTAAGAACAGAGAACA
TGAAATTAACGGGCTGACACCCAAACAGCTGGAACACGAGAAGCTGCAGATTGTAGAGA
TGTGTTTCAAGCTGAAGTTCAAGAGAGTGGAAGTGGTTGGCCAGTTGGCGGAGGTGCTCA
ACATGGCCGAGGCGGTCCAATCAGACTTGATCTCAGAGGAGCTGCCTGAGTGGAAGAAG
AGGCAGCAGAGCTCCTGTATTGGAAGACCACCCAACGCATGTCTGGACCAACTGCAGAAC
TGGTTCACAGCGGTGGCAGAAAGCCTGCAGCAGGTGAGGCAGCAGCTGAAGGAGCTCCA
GGAACTAGAGCAGAAGTACACATACGACAACGACCCAATCAAACAGCAGAAAGGCTTCC
TGGAGGGGCGGGCCTTGGCACTGTTCCGGAACCTCCTAGAACATTCCTTGGTAGTAGAGA
GACAGCCCTGTATGCCCACACATCCACAGAGAACTCTGGTGCTGAAGACACAGGTGCAGT
TCACTGTCAAGCTCAGATTTCTTGTGAAGCTCCCGGAATTCAACTATCAACTCAAAGTGAA
AGCTTTGTTTGACAAGGACGTTACAGAAAAGAAAGGGTTTCGTAAGTTTAACATATTGGG
CACCAACACAAAAGTTATGAATATGGAGGAGTCAAATGGAAGCTTGGCTGCAGAGTTTCG
CCACTTGCAACTGAAAGAGCAGAAAGTAGCTGGCAACCGAACAAATGAGGGGCCTCTCA
TTGTGACAGAGGAGCTGCACTGCATCTGCTTTGAGTCTGAACTCAACCAGTCAGGTCTGG
AGCTCAAGCTAGAGACCATCTCCCTGCCCATCGTGGTCATCTCCAACGTCAGCCAGTTGCC
CAGTGGCTGGGCCTCCATCCTGTGGTACAACATGCTGACCAGCGAACCCAAGAACCTGAA
GTTCTTCCTGAGCCCTCCTGCAGCATCCTGGGGTCAGCTGTCTGAGGTGCTGAGCTGGCAG
TTCTCCTCTGTCACCAAGAGGGGACTCAATGAAGAGCAGCTAGGCATGCTGGCCGACAAA
CTACTGGGCCAGAAAGCACAGAGGAATCCTGAGGGCCTTATCCCCTGGACCAAGTTCTGT
AAGAGTCTCAGTGAGAAGAGCTTTCCCTTCTGGCTGTGGATCGAAGCTATCCTGGATCTC
ATCAAGAGACACCTGCTGTCCCTGTGGAACGATGGTTGCATCCTGGGCTTTGTGAGTAAG
GAGAGGGAGAAGGCCATGCTGACTGGGAAGTGTCCAGGCACGTTCCTGCTGCGCTTCAGT

GAGAGTAGCAGAGACGGAGCCATCACATTCACTTGGGTGGAACACGACCTATACGATAA
GCCTGTATTCCATGCAGTGGAGCCCTACACCAAGAAGGAGCTGTCTGCCGTCTCTCTGCCT
GACATCATCCGAACCTACAAGGTGATGGCAGCTGAGAACATCCCAGAGAACCCACTCCGT
TTCCTCTACCCAGACATCCCCAAAGACAAGTCCTTCGGGAAGTACTACACCAGGGCCTCC
GAGGCATCGGAGCCCATGGATGTGGAGGGTTCCAGCGTCACAGGATACATGAAGACAGA
ACTCATATCAGTGTCCGAAGTTCACCCGTCTAGGCTGCAAGACAACATGATGCCCATGTC
GCCAGACGTGTTCGGAGAGCTGAAGAGGAGCGTTGCACCAGTGCTCCAGTGTTGGAGTAG
TCCTAAGGATATTGATGCTGTGATGACACCTGACTCGGACTGCAACTGA

STAT4-1 (CDQ57838, FR904292)

ATGACTTGTGTCCCCGAACGTGGATATTTCTGTGATAGCGCACCAGTCCAAAGACACAGC
ATGAGTCAATGGAAACAAATTCAACAGCTCCAGATCAAATACCAGGAGCAGGTGGGCTA
CCTTTATGATGACAACTTCCCTATGGACATACGGCAGGTGCTCTCCAACTATATTGAGAGC
CAGGACTGGGATACTGCCGCAAACCATGAGTCCATGGCGACAGTTCTCCTCAGCAATCTC
CTGTCTCAGCTGGACAGGCAGTGTTCTCAGGAACAGAACTTCCTACAAAGACACAACTTG
AAGTTCATCTACCAGCAGTTACAGACTAAATGCAAAGCCAACCCTCTGCTGATGGCCGGG
GTCATTTCCACTTGCCTCAGAGAGGAGCGTCGTATCATCTCCACAGCCAGCATTCAAGAA
CAGGGCCCATTGGAGAAGTCAATGCAGAATTCGGTGGCCTTCGAGAGACAGAAGAACAT
GGACAACAGGGTTGCTGTGATCAGGAGTAGTGTGCAGATGATGGACCAGGCAGTGAAAT
ACCTAGAAGACATGCAAGACGACTTTGACTTCCGCTATAAAACTCTCCAGTCTCGAGATC
CAGTGGACAGGAACACAGCGGCGATGAAACAGGAAGTGACCCGACTGCAGGAGATGCTC
AACAACCTGGACTTTAAGAGGAAGGAGAACCTATCTAAGATGAGTGACGTGATAAAAGA
GATTGATGCTCTGATAGTCTCCCAGCTGAACCCAGAGCTGATGGAGTGGAAACGCAGGCA
GCAGATCAACTGTATAGGTGGCCCACTGCTCACTGGACTGGACCAGCTCCAGAACTGGTT
TACACTGACAGCCCAAAGTCTGTTCCAGATGAAGCGTCAGCTGGACAAACTGGGGGAACT
TATATTAAAGGTGACGTATGAGAGTGACCCCATCCCACTGCAGAGACCGCAGATGGAGG
AGCAGGTCAAATACCTCATCTACCACCTCATCAAAAGCTCCTTTGTGGTGGAGAAGCAGC
CATGTATGCCAACCCACCCCCAGAAACCTCTCATCATCAAGACCGGGGTGCAGTTCACCA
CCAAAGTCAGATTGCTGGTCAAACTTCCAGAGGTGGATTACCAACTAAAAGTGAAGACAA
TATTTGACAAGGACCTCCCCCCTGGTAGAGTGAATCGTCAGTTCTTCATCCTGACTACCAC
CACCAAAGTAATGGACGTGGAGGAATCATCCAATGGCTGCCTGTCTGTAGAGTTTCGACA
CTTGCAGCTGAAAGAGAAGAAATACGTTAATGGAACCAAGGTGAACGAGGGCAAATTCC
TTATCCCGTTGATAGAGCCTGCCGTGTTTTTCATTGAGATGTGTTCAACTTTTTGGTGTGTC
CCTCACTGCACAAAAAATACCTGCTCCTTTCCTCTGGTGGTCATCTCCAATGTTAGCCAAC
TGCCTGGAGGTTGGGCATCTGTCATGTGGTACAACCTGCTGACTGACGAACCCAGGAACC
TGGGCTTCTTTGCCAGTCCTCAGCGGGCCAGTTGGGGCCAGCTCTCTGAGGTACTGAGTTG
GCAGTTCTCCACCTTCGCTGGGCGGGGCCTCAACAGGGAACAGCTGTGCATGCTAGGAGA
GAAACTCTTGGGTCAGCAAGCCTCCCAAAACGAATGTCAGGTATCCTGGTCCAAATTCTG
CAAGGAGAATATTCATGGGAAGAATTTCAGTTTCTGGATGTGGCTGGATTCCATCCTGGA
GCTCATCAAGAAGCACCTACTTCCCATCTGGAACGACAACTGCATCATGGGTTTTGTCAGT
AAGGAGACTGAGAGGGCCCGTCTGAAGGACAAGGAGCCTGGGACTTTCCTGCTGCGCTTC

AGCGAGAGCCACCTGGGCGGGATCACCTTCACCTGGGTGGAGCAGTCCGATAGTGGAGA
GGCCAAGTTCATCTCGGTGGAGCCGTACACCAAATCACGCCTCAGCGCTCTCCCGTTTGCC
GACATTATCCGGGACTACAAGGTCATCGCAGACGGAGAGGTCCCTGAGAACCCACTAAA
GTTCCTCTACCCAGACATCCCCAAAGACGAGGCCTTCGGACGACTTTACAACAGCCAGCA
GAGCAAAGGCAAGATGTCTGCCAAGACATTCTTTCCATACATACCATCTATGCTGATCCC
CATCTCAACTTTGCAAACCACACCTCCCCCCTGCTCCTCCCCAGAACCCCCCATGTCCCCT
GGGATGTTTGACATGCTCACCCAGCACCTCAGCCCCTTGGAGATTGAGACTGCCATGAGT
TCTCCGTACTCCGAGTAA

STAT4-2 (CDQ57312, FR904285)

ATGAGTCAATGGAAACAAATTCAACAGCTCGAGTTCAAATACCTGGAGCAGGTGGATTAC
CTTTATGATGACAACTTCCCTATGGGGATTCGGCAGGTGCTTTCTGACTGGATTGAAAGCC
AGGACTGGGATATGGCCGCACACCATGAGTCCATGGCGACAGTTCTCCTCAGCAATCTCC
TGTCTCAGTTGGACAGGCAGTGTTCTCAGGAACAGAACTTCCTAGAAAGACACAACCTGA
AGAACATCAACAAGCAGTTACAGATAAAATACAAAGCCTACCCTCTGCTCATGGCCGGGG
TCATCTCCACTAGCCTCAGAGAGGAGCGTCGTATCATCGCCTCAGCCAACATACCGGAAC
AGGGCCCGTTGGAGAAGTCTGTACAGAATTCCGTGGCCTTCGAGAGACAGAAGAACATG
GACAACAGGGTGGTCGTGATCAGGAGTAGTGTGCAGATGCTGGACCCGGCAGTGAAATG
TCTAGAGGACATGCAAGATGACTTTGACTTACGCTTCAAAACTATCCAGTCTCGAGATCA
GGCGGACAGGAACACAGAGCGGATGGAACAGGAAGTGGCCCGACTGCAGGAGATTCTCA
ACAACCTGGACTTTAGGAGGAAGGAGATCCTGTCTAAAATGAGTGACGTGATGAAAGAG
ATTGACGCTCTGATAGCCTCCCAGCTGAACCCAGAGCTGATGGAGTGGAAACGCAGGCAG
CAGATCAACTGTATAGGTGGCCCACTGCTCACTGGACTGGACCAGCTCCAGAACTGGTTT
ACTCTGACGGCCCAGAGTCTGTTCCAGATGAAACGTCAGCTGGACAAACTGGGAGAACTT
ATCCTGAAGGTGACCTATACGAGCGACCCCATCTCGTTGCAGAGACCGCAGCTGGAGGAG
CAGGTCAAATACCTCATCGACCACCTCATCAAAAGCTCATTTGTGGTGGAGAAGCAGCCA
TGGATGCCAACCCACCCCCAGAAACCTCTCATCATTAAGACCGGGGTGCAGTTCACCACC
AAAGTCAGATTGCTGGTCAAACTCCCAGAGGTGGATTATCAACTGAAAGTGAAGACGATA
TTTGACAAGCACCTCCCCCCTGGCAGAGTACATCGTCAGTTCTTCATCCTGACTTCCACCA
CCAAAGTAATGGACGTGGAGGAATCATCTAATGGCTGTCTATCTGTAGAGTTCAGACACT
TGCAGCTGAAAGAGAAGAAATATGTCAACGGTATAAAGGTGAACGAGGGTCCTCTCTCTG
TGACGGAGGAGCTCCACTCCCTCAGCTTCGAGGCCCAGTTCAACATACAGGGCATTAACA
TCGACCTGGAGACCTGCTCTTTTCCTCTGGTGGTCATCTCCAATGTTAGCCAGCTGACTGG
AGGCTGGGCCTCCATCATGTGGTACAACATGCTGACTGACGAACCCAGGAACCCGGACTT
CTTTGCCAGTCCTCCGCGGGCCAGTTGGGGCCAGCTCTCTGAAGTGCTGAGTTGGCAGTTC
TCGACTTTCACTGGGCGGGGCCTCAACAGGGAGCAGCTGTGCATGCTGGGAGAGAAACTC
ATGGGTCAGCAAGCCTCTCACAATGAATGTCAAGTATCCTGGTCCAAATTCTGCAAGGAG
AATATTCCTGGGAAGCCTTTCAGTTTTTGGATGTGGCTGGATTTCATCCTGGAGCTCATCA
AGAAGCACCTGCTTCCCATCTGGAACGACAACTGCATCATGGGCTTTGTCAGTAAGGAGA
CAGAGAGGGCCTGTTTGAAGGACAAGGAGCCTGGGACATTCCTGCTGCGCTTCAGTGAGA
GCCACCTGGGTGGGATCACTTTCACCTGGGTGAAGCAGTCCGACAGTGGAGAGGCTAAAT

TAATCTCAGTGGAGCCGTACACCAAATCACGCCTCAGCGCTCTCCCGTTCGCCAACATCAT
CCGGGACTACAAGGTCATCGCAGACGGAGAGGTCCCTGAGAACCCGCTCAAGTTCCTCTA
CCCCGGCATCCCCAAAGACGAGTCCTTCAGACGACATTACAACAGTCAGCAGAGCAAAG
GCAAGATGGTTACCAAGACACGTTTATGA

IFNγ-1 (NM_001160503)

ATGGATGTGTTATCAAGGGCTGTGATGTGTTTCTGCTTGATGGGCTGGATGACTTTAGGAT
GGAGTAATGCTGCTCAGTTCACATCAATTAACATGAAGAGAAACATAGACAAACTGAAAG
TCCACTATAAGATCTCCAAGGACCAGCTGTTCAACGGAAACCCTGTTTTCCCCAAGGACAC
GTTTGAGGACAGTGATCGGAGGGTGTTGATGAGTGTGGTTCTGGACGTGTATCTGAGTATC
TTCGGCCAGATGCTGAACCAGACGGGGGACCAGGAAATGATTGAGAGTCTGAAATATGTC
AAGGGGAAAATTCAGGATCTCCAGAAACACTATTTCCTGGGGAGGATACCTGAGCTGAGG
ACACACCTGCAGAACCTGTGGGCCATCGAGACCAGCGACACCACAGTCCAGGGGAAGGCT
CTGTCCGAGTTCATTACCATCTACGAGAAAGCCTCCAAACTGGCCCTTAAGTTCCATCTAA
AGAAGGACAACCGCAGGAAGAGACGGCAAGCCCAGAGGCTCAAATCACACATCATGTAG

IFNγ-2 (NM_001160503)

ATGGATGTGTTATCAAGGGCTGTGATGTGTTTCTGCTTGATGGGCTGGATGACTTTAGGAT
GGAGTAATGCTGCTCAGTACACATCAATTAACATGAAGAGAAACATAGACAAACTGAAAG
TCCACTATAAGATCTCCAAGGACCAGCTGTTCAACGGAAACCCTGTTTTCCCCAAGGACAC
GTTTGAGGACAGTGAGCAGAGGGTGTTGATGAGTGTGGTTCTGGACGTGTACCTGAGTATC
TTCAGCCAGATGCTGAACCAGACGGGGGACCAGGAAGTGAGGGAGAGGCTGGACCAGGTC
AAGGGGAAGGTTCAGGAGACCCAGAAACACTATTTCCTGGGGAGGGTACCTGAGCTGAGG
ACACACCTGCAGAACCTGTGGGCCATCAAGACCAGTGACACCACAGTCCAGGGGAAGGCT
CTGTCCGAGTTCATTACCATCTACGAGAAAGCCTCCAAACTGGCCCATGAGATCCATCTAA
AGAAGGACAACCGCAGGAAGAGACGGCAAGCCCAGAGGCTCAAATCACACATCATGTAG

T_H17-Signature Genes

IL-17A/F1a (KJ921977)

ATGGGTTCTACTTCAAACGTACACTTTTTGATGGTGCTGTGTTTAATGGGGTTGTTGGTGA
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GCTCACAGAACAACCTTCAGGGACACAAGAAGCCTGTAGAGCCTTCAGCTCCAAACACA
ATAACTGTCCCCCTGCACCTGGACCCGAGCGACTTGATTCCAGCCCGTCCCGTCAGATCCA
TTGGGAACCACTCCATCTCCCCATGGACTACCAACACCACCTATGATGAGTCCCGCTTTCC
CAATACCATCTCGGAGGTCAAGTGCTCTCTGGAGGGCTGTCTGAACGTCGCGGGTAAGGA
GGACAGGAGCCTGGAGTCCAAACCCATTTACCACCAGATCCTGGTCCTGAGGAAGGTGAT
GGGGAGCAAGGACAGATACTACTACCGGCTGGAGGCAAAGATCATCGCGGTGGGCTGCA
CCTGTGTCAGGCCTAGCATTGAGCACCAACAGTAA

IL-17A/F1b (KJ921978)

ATGGTATCTACTTTAAGCTTCCAGTCTTTGACGGTGCTGTGTATGAAGGGGGTTTTGGTGA
TGATGATGGGGGCAGAGGCGGCCCCCCGTGCCCATCCAGAGAAGACAGAGAGCCACACA
CGGACCACACTGCAGACACACAAGAAGCCTGCAGAGTCAGAGTCTTCAGGTCCCGACAC
AGTAATTCTCCCCCTGCACCTAGACCCAAATTACTTGGTTCCTTTCCATTCCATCAGACCT
ATTTACAACCATTCAATCTCCCCATGGACTTACAACACTACCTATGATGATAGACGCTTTC
CCGCCATCATCTCGGAGGTCAGGTGCTCTCTGAAGGGATGTCTGAACATCAAGGGTAAGG
AGGACAGGAACCTGAAGTCCAAACCCATCTTCTACCAGATCCTGGTCCTGAGGAAGGTGA
TGGGAAGTGGGAAGAAATGCCACTACCGACTGGAGTCAAAGGTCATCTCGGTGGGCTGC
ACCTGTGTCAGGCCTACCATCGAACAGTAA

IL-17A/F2a (AJ580842)

ATGGAGCTCAAAAGCAACGTGTCGAAGTACCTGGTTGTGTGCTGTGTGTCTATGCTGCTG
GGCCTGACCATGGCGAAAGGAATGAAGGTGACAAAGGAGAGGTGTAACGAAACACTGAT
CATCCCTTCAGACTTCTACAAGATTCCCACAGAGGAATCAGAGGGAAATGGGAACATTCA
CACACGCTCTCTGTCACCCTGGACCTGGAAAAGCACTACAGTGGAGAACCGTATTCCTCA
GACCATGTGGGAGGCCGAGTGCAGCTCTATGTACTGTGTCTACCCCACCAACAGAAGCCA
GTACATGCGCTACAGGCAGAACTCTGTACCTATCTACCAGCAGGTCGTGGTACTCTACAC
TTCAGCCACCAGGAAGTGCTACAGCGCCTCCTTCCTGTCTGTGGCCGTGGGGTGCACCTGT
GCCTGGGCAAGGACTACTTGA

IL-17A/F2b (KJ921979)

ATGCACCACTCAGACAGAAGGATGTGGAAGACATCAGAGATGGAGCTCAAGAACAATGC
GTCGAAATACCTGGTTGTGTGCTGTGTGTCTATGCTGCTGGGCCTGACAATAGCCAAAGG
GGAGGTAGGGGAGAAGGAGAGGTGTGAGGACATACTGACCATTCCTTCAGACTACTACA
AGACTCCTTCAGAGGAATCAGAGGGAAACGGGAACATCAACACACGCTCCCTGTCCCCCT
GGACCTGGAAACCCATTACAGTGAAGAACCGTATTCCTCCGACCATTTGGGAGGCCAAGT
GCAGCTCTATGTACTGTGTCTACCCCACCAACGGCAGCCAGGCCGTGGGCTACCAGCAGA
ACTCTGTACCTATCTACCAGCAGGTCATGGTGCTCCATAGCTCAGCCACTAGGAAGTGCTA
CAACGTCACCTTCCTGTCCGTGGCCGTGGGGTGCACCTGTGCCTGGGCAAGAACCACTTGA

IL-17A/F3 (KJ921980)

ATGCATCTGGTCATGGTCTTCAGAGGTTTACTGGTGCTGGGTCTGATCATGTCACTGGATG
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GTCTTTGGACGGAGAGTAATGACTGTAGGTTTAGTTATGGATCCTAACCTGAAGACCGCT
GTCTTCCCTGTCCTTCATAAAGCCACCAGGTCTCTCTCTCCGTGGACATACAGCGACACAT
ACGATGAGACCCGGGTCCCTCAACATATCTCCCAGGCTCAGTGCCAGAGGTCTGGCTGTC
TGACCCCAGGCGGAGAAGAGGACATGGGGTTGGAGTCCAAACCCATACTCTATCAGACCT
TGGTGCTCCGCAGGGTTCAGGGAGAGAAGGGCAGCAGTGGAGGGAGGAGGAGGAAGAA

GGGGAGGAAGAACAAGGGTTATTTCTACAAACTGGACAGTGAGAGTGTAAATGTGGGCT
GTACCTGTGTGAGACCCAGCATTTTCCCTCAGAAGCAGTGA

IL-21 (NM_001246331)

ATGAAGCTGCTTGTTTGTTATCTCCTAGCCATCACCTGTGTATTGGTGGATGCAGACAAGG
GTGAGAGAATCCTGAAGCTGACTGAAGTAATAAAGGAATTAAAAGCGCTAAACAGAACTG
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GTCTGCCTTGAAGTGCTTCCGGGCGATGGTACCTCATCTCAAGGCCAAAAATAAGACCCTT
CAGCGTAAAGTTATCAAAAACCTCAACAACCGAATGATTTTGGGAAGTCTGGACTCCTGCA
GTCAGGAGGAGAGAGAGAAAACAGTCTGCCAAGGATGTGATTCATATCCAAAGGACAGCC
AGAAATGTGTACAACAGTTGGAATCTCTGCTTCAAAAGGCCATCAGTAGACTGGCGTGA

IL-22 (NM_001164064)

ATGAAGTTCAGCACGGTCCAACTCGTAGCCGCTGTGGTAGTGGTGATGAGCGTCTGTCTG
CTGCGCGAATCCGTGGCGCACTCCATCCATCGCCCGCTCAGCGCCCCCCTGCACAGCGCG
GATACCGACACCATGGTACAGCAGGTGGCTCAACATGCGCAAAGTTCTGACACCGATACT
GACACTAAACTGATGCCAGACATCGATACTAAAAAGAACCACAGAGACATCTGCTGCCTG
CATGCTAACATCCTGGACTTCTACCTGAGTAACATCCTGACCACTAAGGAGAAGCAGGAC
AAGCATCATCCTAAACTCCCTGCCCTGAAGGAAGACCTGGCCCGAGTCAGCAGAGACCTG
AAGGAACACGGCTGTGCTATTAAACACTACAATGACCACCACCACAGCATTGCTTTCCGC
AAGAAGTTGTCCGAGATGGAGGAGGGGAAAGGAATCAAGAAAGCCATTGGAGAGATCG
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T_{reg}-Signature Genes

FoxP3-1 (FM883710)

ATGCTACAGACTGAGAGTGAGAGGTTGAAGAGTGGGCGACTGAACAGTGGGCGACATCA
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TGGAGTTTCACTTATGGCCTCGTCTCAGCTCCAAAGCATATTGTTACGGCAGTGTTCCAGT
GAGGAGGAGGGGAGATCGCTCCTGCAACGGGTGTCTCTGTGCCCCCAGTTGAGCCAGCAC
AGACCCTCTGTTCTACGCCAGGGTGTCCAGGCTGCCCACGTGCGACCGCAGGCACCATGC
ACTCTAACAGAGGCCAGTTCAGCTCAGCCCATCTCACTGTGCAAGGTGGAGGTGGACACA
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CCCTCTCCCCCGAGGACAGCCAGTCCTAAGCAGAGCTCCATCATCACCAGGCAACATGAG
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CCGTCTGGACAGTGGATGAAATGGAATATCAAAGGAGAAAGGGACAAAAATACCACAGG
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FoxP3-2 (FM883711)

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TGTTCCAGTGAGGAAGAGGGGAGACCTTTGCTGCAGCGGGTGTTTCGGTGCCCCCAGTTGA
GCCAGCACAGACCCTCTGTCCTACGCCAGGCTGTCCTGGCTGCCCACGTACGACCACAGAC
GGCCGGTTCAGCTCAACCCATATCACCGTGCAAGGTGGAGGTGGACACAGGGAGCCGTGG
ACAGTCCTCACCCCCACACTCTGAGCACTCTCCTGGGCCCACTCGTCACCCCTCTCCCCTGA
GGAGAGCCAATCCTAAGCAGAGCTCCATCATCACCAGGCATAATGAGCCAGGTCACCCAA
CCCTACGGAGCTCCAGTGCTCTGTTTCTCAACGGACTCTGCTGCTGGCCAGGCTGCGATGC
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CAACTGACATGAAGGCAGGTTCAGATTGGCCCTACAGTCACAGCCTGGCACTAGTCCTGCC
CCAGTACTCATCCCCGGCCTTGGCAGCAGATGGAGTGCCACGCTGCTCCACTAAAGAGCCA
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IL-10 (AB574339)

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ACGCAAACACTGA

TGFβ-1a (KF870471)

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CATACTTTGCAAAGGAGGTCCACAAGTTCAACATGAAACAAAGTGAGAACACCAGTAAG
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GTGTAGCTAG

TGFβ-1b (NM_001281366)

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CGTGGCTGGTCTAGCCAAGAACATGAGGAAGCCTCACATCTTGGCCATGTCCATCCCCCA
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CTGCACAGATAAAACAGAGAACTGTTGCGTGAGGAAACTCTACATCGACTTCAGGAAAG

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CATGCACCTACATCTGGAATGCTGAAAACAAATACTCTCAGATCCTTGCCCTGTACAAGC
ACCACAACCCAGGAGCGTCGGCCCAGCCGTGCTGTGTACCCCAGGTCTTGGAACCTCTGC
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T_H2-Signature Genes

GATA3 (NM_001195792)

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CAATGCAGCACCACAGCACTTCCCCATGGAACCTGAGTCCTTTCCAGAAGAGCTCACTGC
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TCTTCTAGTTATGGTTCCAAAACAAGACCAAAAACAAGGTCATGTTCAGAAGGTAGAGAGT
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GTGTAACGCCTGCGGACTCTATCACAAGATGAACGGGCAGAATCGGCCCCTCATCAAACCC
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CGACTTCTCCAAGAGCCTGATGGAGAAGAGCAGCTCGTTCAGCCCCGCCGCTCTGTCCCGC
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STAT6 (CDQ66037, FR904526)

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CAGCTGGTACTCACAGTCAGGGATGTCCTGAGGAAGGAGAGAGAGCTGCTCAGTCAGGC
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ACACACACACACACACACACACACACAAACAGACTTCACAAGGGACCAGGGGAATGGAGCC
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CCCCAGTACCCCTACAGGGGGGGATGTATCCTGACCCCCTCTCCAATCCCAATGGACTCTT
TCCTGGCTCGGACATGTGAGTGA

<u>IL-4/13A (AB574337)</u>

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AGGGCAACCAGGTAGAGCTGAGGAGACTTCTCCTCGACCTAAAAGAATGTGGCCAAAAA
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IL-4/13B-1

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IL-4/13B-2

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Atlantic salmon

T_H1-Signature Genes

T-bet (NM_001199226)

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GGCGGGGGTGGGGGGAGAGGACCCCTGGCTGGAACCCCCCTCGGTCAAATCGGTGGACT
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STAT1 (BT045567)

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<u>STAT4 (NM_001173670)</u>

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AAGAAGCACCTACTTCCCATCTGGAACGACAACTGCATCATGGGTTTTGTCAGTAAGGAG
ACTGAGAGGGCCCGTCTGAAGGACAAGGAGCCTGGGACTTTCCTGCTGCGCTTCAGCGAG
AGCCACCTGGGTGGGATCACCTTCACCTGGGTGGAGCAGTCCGATAGTGGAGAGGCCAA
GTTCATCTCGGTGGAGCCGTACACCAAATCACGCCTCAGCGCTCTCCCGTTTGCCGACATT
ATCCGAGACTACAAGGTCATCACAGACGGAGAGGTCCCTGAGAACCCACTAAAGTTCCTC
TACCCAGACATCCCCAAAGACGAGGCCTTCGGACGACTTTACAACAGCCAGCAGAACAA
AGTGTTTCCATACATACCATCTATGCTGATCCCCATCTCAACTTTGCAAACCACACCTCCC
CCCTGCTCCTCCCCAGAACCCCCCATGTCCCCTGGGATGTTTGACATGCTCACCCAGCACC
TCAGCCCCTTGGAGATTGAGACTGCCATGAGATCTCCGTACTCCGAGTAA

IFNγ (NM_001123558)

ATGGATGTGTTATCAAGGGCTGTGATGTGTTTCTGCTTGATGGGCTGGATGACTTTAGGAT
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TCCACTATAAGATCTCCAAGGACCAGCTGTTCAACGGAAAACCTGTTTTCCCCAAGGACAC
GTTTGAGGACAGTGAGCGGAGGGTGTGGATGAGTGTGGTTCTGGACGTGTATCGGAGTATC
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ACACACCTGCAGAACCTGTGGGCCATCGAGACCAGTAACACCACAGTCCAGGGGAAGGCT
CTGTCCGAGTTCATTACCATCTACGAGAAAGCCTCCAAACTGGCCCTTAAGATCCATCTAA
AGAAGGACAACCGCAGGAAGAGACGGCAAGCCCAGAGGCTCAAATCAAGCATCATGTAG

T_H17-Signature Genes

IL-17A/F1a (KJ921970)

ATGGGTTCTACTTCAAACGTACACTTTTTGATGGTGCTGTGTTTAATGGGGTTATTGGAGA
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CACAGAGAAACCTTCAGGGACACAATAAGCCTGTAGAGCCTTCAGCTCCAAACACAATA
ACTGTCCCCCTGCACCTGGACCCGAGCGACTTGATTCCTTCCCGTCTCGTCAGATCCATTG
GGAACCACTCGATCTCCCCATGGACTACCAACACCACCTATGATGAGTCCCGCTTTCCCCA
AACCATCTCGGAGGTCAGGTGCTCTCTGGAGGGCTGTCTGAACGTCGCGGGTAAGGAGGA
CAGAAGCCTGGAGTCCAAACCCATTTACCACCAGATCCTGGTCCTGAGGAAGGTGATGGG
GAGCGTGGACAGATACTACTACCGGCTGGAGTCAAAGATCATCGTGGTGGGCTGCACATG
TGTCAGGCCTAGCATTGAGCACCAACAGTAA

IL-17A/F1b (KJ921971)

ATGGTATCTACTTTAAGCTTCCAGTCTTTGACGGTGCTGTGTATGAAGGGGATGTTGGTGA
TGATGATGGGGGCAGAGGTGGCCCCCCGTGCCCATTCAGAGAAGACAGAGAGCCACACA

CGGACCACACTCCAGACACACAAGAAGCCTACAGAGTCTACAGGTCCCGACACAGTAATT
CTCTCCCTGCACCTAGACCCAAATTACTTGGTTCCTTTCCATTCCATCAGACCCATTTGGA
ACCATTCAATCTCCCCGTGGACTTACAACACTACCTATGACGATCGACGCTTTCCCCCCAT
CATCTCGGAGGTCAGGTGCTCTCTGAAGGGATGTCTGAACATCAAGGGTAAGGAGGACA
GGAACCTGAAGTCCAAACCCATCTTCTACCAGATCCTAGTCCTGAGGATGGTGATGGGAA
GTGGGAAGAAATGCCACTACCGGCTGGAGTCAAAGGTCATCTCAGTGGGCTGCACCTGTG
TCAGGCCTACCATCGAACAGTAA

IL-17A/F2a (KJ921972)

ATGGAGCTCAAAAGCAACGTGTCGAAGTACCTGGTTGTGTGCTGTGTGTCTATGCTGCTG
GGCCTGACCATGGCAAAAGGAAAGAAGGGGACAAAGGAGAGGTGTAACGAAACACTGA
TCATACCTTCAGACTACTACAAGATTCCCACAGAGGAATCAGAGGGAAATGGGAACATTC
ACACACGCTCTCTGTCACCCTGGACCTGGAAAACCACTACAGTGGAGAACCGTCTTCCTC
AGACCATGTGGGAGGCCGAGTGCAGCTCTATGTACTGTGTCTACCCCACCAACAGCAGCC
AGTACGAGCAGAACTCTGTACCTATCTACCAGCAGGTCGTGGTACTCTACACTTCAGCCA
CCAGGAAGTGCTACAGCGCCACCTTCCTGTCTGTGGCCGTGGGGTGCACCTGTGCCTGGG
CAAGGACCTCTTGA

IL-17A/F2b (KJ921973)

ATGTGGAAGACATCAGAGATGGAGCTCAAAAACAACACGTCGAAATACCTGGTTGTGTG
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AGGGAAACGGGAACATCAACACACGCTCCCTGTCCGCCTGGACCTGGAAACCCATTACAG
TGGAGAACCGTATTCCTTCAACCATTTGGGAGGCCAAGTGTAGCTCTATGTACTGTGTCTA
CCCCACCAACAGCAGCCAGGTCGTGGGCTACCGGCAGAACTCTGTACCTATCTACCAGAA
GGTCCTGGTGCTCCATATCTCAGCCACTAGGAAGTGCTACAGCGTCTCCTTCCTGTCCGTG
GCCGTGGGGTGCACCTGTGCCTGGGCTAGAACCTCTTGA

IL-17A/F3 (KJ921974)

ATGCTTCTGGTCATGGTCTTCAGAGGTTTGCTGGTGCTGGGTCTGATCATGTCGCTGGACG
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GTCTTCCCTGTCCTTCATATAGCCAACAGGTCTCTCTCTCCATGGACATACAGCGACACAT
ACGATGAGACCCGAGTCCCTCAACATATCTCCCAGGCTCAGTGCCAGAGGTCTGGCTGTC
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TTGGTGCTCCGCAGGGTTCAGGGAGAGATGGGCAGCAGCGGAGGGAGGAGGAAGAAGG
GGAAGAAGAAGGGGTATTTCTATAAACTGGAGAGTGAGAGTGTAAACGTGGGCTGTACC
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GCTGTTTTGGGGTTTTAGGCTGGGTTTCTGTACAGCACTTTGA

IL-21 (EU816603, ACJ02096)

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CTATCTACCTTGGAGTGCTTCCAGAAGATGGTACCTCGTCTCAAGACCAAACAAAAGAAAT
TGCAGTGTAAAGTTAGCAGAAACCTCAACCCACTGACTTTTACAGGTGTAGACTCCTGCAG
TCGGGAGGAGAGAGAGAAAAAAGTCTGCCAAGGATGTGATTCCTACCCAATGAAGGACAG
CAGGGAATTTGTACAACAGTTGGAATCTCTTCTTCAAAAGGTAGCAGGTTATTATGAATAA

IL-22 (AGKD04046435, AGKD04023486)

ATGAAGTTCAGTTCGGTCCAACTCGTAGCCGCTGTGGTAGTGGTGATGAGCGTCTGTCTGC
TGCGCGAATCCGTGGCGCACTCCATCCATCGCCCGCTCAGCGCCCCCCTGCACAGCGCGG
ATACCGACACCATGGTACAGCTGGTGGCTCAACAGGCGCAAAGTTCTGACACTGATACTG
ACACTAAACTGATGCCAGACATCGATACTAAAAAGAACCACAGAGACATCTGCTGCCTGC
ATGCTAACATCCTGGACTTCTACCTGAGTAACATCCTGACCACTAAGGAGAAGCAGGACA
AGCATCATCCTAAACTCCCTGCCCTGAAGGAAGACCTGGCCCGAGTCAGCAGAGACCTGA
AGGAACACGGCTGTGCTATTAAACACTACAATGACCACCACCACAGCATTGCTTTCCGCA
AGAAGTTGGCCGAGATGGAGGAGGGGAAAGGGATAAAGAAAGCCATTGGAGAGATTGA
CATCCTCTTCACCTTCCTGAAAGACTTCTGTGTGCACGCCTAG

T_{reg}-Signature Genes

Foxp3 (NM_001198847)

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GATGATTAGACCTGGACGTCCACTTATGGCCTCATCTCAGCTCCAAAGCATACTGTTACAG
CAGTGTTCCAGTGAGGAGGAGGGGAAACCGTTCCTGCAGCGGGTGTCTCGGTGCACCCAG
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CAGGCAGCGGCCGGTTCAGCTCAACCCATATCACTGTGCAAGGTGGAGGTGGACACAGG
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CTCGCCCCTGAGGAGAGCCAGTCCTAAGCAGAGCTCCATCATCACCAGGCATCATGAGCC
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CCACCTACTCCCAGATCTTGTCCCGAGTGTTGAGTGTTACAAATACAACAACATCCGGCCT

CCGTACACCTACGCCTGCCTGATAAGATGGTCTATAATGGAGACTCCAGACAAGCAGCGC
TCTCTGAATGACATCTACAACTGGTTCACCACCATGTTCTTCTACTTCCGACACAACACGG
CCACATGGAAGAACGCTGTCCGTCATAATCTTAGCTTGCACAAGTGTTTTGTGCGAGTGG
AGGGAGGCAAGGGGGCTGTCTGGACAGTGGATGAAATGGAATATCAAAGGAGAAAGGG
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GAGGAACCTTGA

IL-10 (AGKD04000716)

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TGGAGACTTCCCTGTTGGACGAAGGCATTCTACACCACTTGAAGAGCCCGGTGGGGTGTCAC
GCTATGGACAGCATCCTGAAGTTCTACCTCGACACGGTGTTGCCCACCGCCATGAACAACAG
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TGFβ1 (BT059581)

ATGAGGGCAGAATGTTTGACGCTGGTTGTCTTATTGGCGCTGGAATATATGTGTCGGAGTG
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CCATCCGTGGACAGATACTGAGCAAGCTGCGGCTGCCCAAGGAGCCAGAGATTGACCAGG
AGGGAGACTTCGAGAAAGTCCCAACCTCCCTGATATCCATCTACAACAGCACAGTGGAGCT
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CATGAACATGCCAAAGCCTCACATTTTACTGATGTCACTTCCTGTGGAACGCCACAGCCAG
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ACACAAGGTGGAGCAGTTGTCCAATATGATTGTTAAGTCCTGCAAGTGTAGCTAG

T_H2-Signature Genes

GATA3 (NM_001171800)

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CAGGTGTGTCGCCCCTCTCTACTGCACGGCTCTCTGCCGTGGCTGGACGGAAGCAAAGCGA
TGCAGCACCACAGCACTTCCCCGTGGAACCTGAGTCCTTTCCAGAAGAGCTCACTGCACCA
CGGTTCCCCGGCAGGTCTCTCTGTCTACCCTTCGGCGTCCTCCTCCTCCCTGTCTGGGGGCC
ACTCAAGCCCGCACCTCTTCACCTTTCCCCCCACTCCTCCGAAAGACGTGTCCCCAGACCCA
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AGGAAGATGTCCAGCAAGTCGAAGAAGAGCAAAAAGTCCCACGACAGCATGGACGACTTC
TCCAAGAGCCTGATGGAGAAGAGCAGCTCGTTCAGCCCCGCCGCTCTGTCCCGCCACATGT
CCTCCTTCCCCCCCTTCTCACACTCCGGCCACATGCTGTCCACCCCCACGCCCATGCACCCC
TCCTCCTTCGCCCCTCACCCCCACTCCAGTATGGTCTCTGCCATGGGCTAG

STAT6 (AGKD04000009, GBRB01023434)

ATGGCACAGTGGACGCAGATGAAACAGCTGATCCCCTATCTGGCCACACAGACCCTCAAC
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CAGCTGGTACTCACAGTCAGGGATGTCCTGAGGAAGGAGAGAGAGCTGCTCAGTCAAGC
GTCTACCCAGATCCCGGCCCTAGCCCTCTTCTCTCAACCCCCAGCCCAGGATTCCATGGCT
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TGCAGACAGCAGATCCACCAGCTGCAGGAGGAGCTCAACTGGGAGAGGCAGAACTATGA
GTCCATGCAGGGCACTCTCCAGCAGACCCAGACCAATGGGATGGACTCCAGCATTTCAGA
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AGTTGAGACAGGAAGTGATGCTGGCCGGGGAACCAATCCCAGAGCTGCAAGAGAGACTG
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GATCTCTGTGCCGGTGGTGGTGATCGTTCACGGTAGTCAGGATAACAATGCCCTAGCAAC
CATCATCTGGGACTGTGCCTTTTCTGAACCGGAAAGGATTCCGTTTTTGGTTCCGGAACGC
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CAGCGTTGCCTAGACAACTACAACCAACACTTCCTGGCCCAAAAGATCTTCGACAAGCCA
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AATACTACACAGGCAAGTCCACACACACACACACGAGTCTGAATCACTCACTCACATATG
CACACACACACACACTTCACAAGGTCTTCATCATTCTCTCTTAGGGACCAGGGGAATGGA
GCCAGTGCATCACCATTCTACTCTCTCTCTCCGAACAACCAGTTCCAAACCCCCTTCCAGC
TGGCCCCAGTACCCCTACAGGGGGGAATGTACTCTGACCCCCTCTCCAATCCCAATGGAC
TCTTCCCTGGCCCGGACATGTGAGTGA

<u>IL-4/13A (AB574339)</u>

ATGAAGTCGGTGATCCTTCTCTCTGTTGCGATGGTGCTATTTAACTCTGGAACTCTGCCTGCC
AACGCTGCAGCGTACCGGCAGCATAAAAATCACCATTCCAATTTAGAGGCAATTATTAGCA
TGGCGGAACAATACACACACAATCTGACAGAGGATCTTCTGAGAACATTACTCATAGATGT
TACACATTTGACTGGGACCACCACAAAATGCAAGGAGTTCTTCTGCGAAGCTGAGAAAATC
TTGGCCTCCGTGAAAAATGCCACGTTTGGAAATATTGTCCGACATCTGAGGGTTTACAACAA
ACATCAATACTGCATCGTTGTGAAGAGCCAAGACAACCAGGCGGAGGGCAACCAGGTGGA
GCTGAGGAGACTTCTCCTCGACTTAAAAGAATGTGGCCAAAAAATCAACTCCAAACCATGA

<u>IL-4/13B1 (GBRB01017951)</u>

ATGAAGACTCTTGCTCTCCTCTTCTCCTTTGCATTTGTGCTGGTCTTCACTGCGCCCACTAA
GACATCTGATGAGCATCATCTACTGAGGAGGATCATGATCAAGGCTAACAAGACCCGCGA
TGAAGGCCCGGAGGCCCTTTTGGACAGTCTAGTGCCAGCGCAATTCAATCAAGTTCGCTG
CAAGGAACACGGGCCTAAAGATTTCTGCATAGCGGAGAAGATTCTGTCTAACATAAACGA
AGAGCAGTACGGGACTTCAGACAACAACATTGGGACAATCAGCAGAGAGCTGAAGCAGT
ACAATATGCTTCACCCTTCCAACTGCACAGTGAAGAATAACGTTGACGAGGAACAGCTCC

GCGCTCTCCTGATGAACCTCTACGACTGTGCCCAAATCATCTATGCCCGTCCCCACCCTGT
CACTCATCACAAAACGACCCCAGCACTTTGA

IL-4/13B2 (AGKD04001089)

ATGAAGACTGTCACACTCCTCTTCTCCTTTGCATTTGTGCTGGTCTTCACTGCGCCCACTGA
TGAGACTCATCTATTGCTTACGATCATCGACGAGGCTAACAAGATCCTCAATGGAGGTTT
GGAGTTTCAGGCCCTTGTGGACAGTCTAGTGCCAGCGGGATTCGATCAAGATCGCTGCAG
GGAAAACGGGCCTGAAGATTTCTGCATAGCTGAGACTATTCTGTCTGCCATAAACCATGC
GCAGTACAGGAGTCCATTAAACAACATATCTAAAATCAGTAGAGTGCTGAAGCTGTACAA
TAAGTTTCATCCAACCAACTGCACTGTGAAGGAGAACGGTGATGAGGAACAGCTCCACGA
TCTCCTGACAAACCTCTTCAACTGTGCCCAGGCCATTTACTCTTGTCCCTCACCCTGCCGCT
CATCACAAACAACCCTATAG

References

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