

>gi|70798435|gb|DQ100924.1| Homo sapiens isolate N1887H immunoglobulin heavy chain variable region (IGHV1-69) mRNA, IGHV1-69*01 allele, partial cds

CTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGTCCTCGGTGAAGGTCTCCTGCAAGGCTTCTGGAGGCA
CCTTCAG
CAGCTATGCTATCAGCTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATCATCCCTATC
TTTGGTA
CAGCAAACCTACGCACAGAAGTTCCAGGGCAGAGTCACGATTACCGCGGACGAATCCACGAGCACAGCCTACAT
GGAGCTG
AGCAGCCTGAGATCTGAGGACACGGCCGTGTATTACTGTGCGGTGGGCCGTGGATATGGCAACCCCGCTACTT
TTTACTA
CTACTACTACGGTATGGACGTCTGGGGCCAAGGAACCCCTGGTCAC

>gi|54780327|gb|AY671487.1| Homo sapiens clone 2d464 immunoglobulin mu heavy chain mRNA, partial cds

GTCAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGCTGT
CTATGGT
GGGTCCTTCAGTGGTTACTACTGGAGCTGGATCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAA
TCAATCA
TAGTGGAAGCACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAG
TTCTCCC
TGAAGCTGAGCTCTGTGACCGCCGCGGACACGGCTGTGTATTACTGTGCGAGATGGAGGCGTGGCGGACCCGA
TGCTTTT
GATATCTGGGGCCAAGGGACAATGGTCACCGTCTCTTCAGGGAGTGCATCCGCCCCAACCCCTTTTCCCCCTCG
TCTCCTG
TGAGAATTCCCCGTCTGGGATACG

>gi|270053867|dbj|AB203789.1| Homo sapiens gene for immunoglobulin heavy chain variable region, partial cds, clone: CB11_III-3E

CAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTCGGGGACCCTGTCCCTCACCTGCGCTGTCTCTGGTG
GCTCCAT
CAGCAGTAGTAACTGGTGGAGTTGGGTCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAATCTAT
CATAGTG
GGAGCACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACAAGTCCAAGAACCAGTTCTC
CCTGAAG
CTGAGCTCTGTGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGTAATAACGTATTACGATATTTTGA
CTGGTTA
TACGACCCTCAACTGGTTCGACCCCTGGGGCCAGGGAAC

>gi|122892309|gb|EF178067.1| Homo sapiens clone HVK1-6 immunoglobulin heavy chain variable region mRNA, partial cds

ATGGCCCAGGTGCAGCTGGTGCAGTCTGGAGCAGAGGTGAAAAAGCCCGGGGAGTCTCTGAAGATCTCCTGTA
AGGGTTC
TGGATACAGCTTTACCAGCTACTGGATCGGCTGGGTGCGCCAGATGCCCGGGAAAGGCCTGGAGTGGATGGGG
ATCATCT
ATCCTGGTGA CTCTGATACCAGATACAGCCCGTCCTTCCAAGGCCAGGTCACCATCTCAGCCGACAAGTCCAT
CAGCACC
GCCTACCTGCAGTGGAGCAGCCTGAAGGCCTCGGACACCGCCATGTATTACTGTGCGAGAGAGCGCCCCGCCG
AGCAGTA
TTACTATGGTTCGGGGAGTTATTATAACCCCTCCCCTTTTGGGTACTGGGGCCAGGGAACCCCTGGTCACCGTC
TCCTCA

>gi|270053693|dbj|AB203702.1| Homo sapiens gene for immunoglobulin heavy chain variable region, partial cds, clone: CB11_IV-3B

GTGCAGCTGGTGGAGTCCGGGGGAGGCTTAGTTACAGCTGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTG
GATTAC
CTTCAGTAGCTACTGGATGCACTGGGTCCGCCAAGCTCCAGGGAAGGGGCTGGTGTGGGTCTCACGTATTAAT
AGTGATG

GGAGTAGCACAAAGCTACGCGGACTCCGTGAAGGGCCGATTACCATCTCCAGAGACAACGCCAAGAACACGCT
GTATCTG
CAAATGAACAGTCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCAAGGGCTTTATATTGTAGTAGTACCA
GCTGCTA
TTGTTACTACTACTACTACGGTATGGACGTCTGGGGCCA

>gi|112690850|emb|AM077222.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
CE07A15

CGCGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTG
GGGAGG
CTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATGCCATG
AGCTGGG
TCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATACTACGC
AGACTCC
GTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAG
CCGAGGA
CACGGCCGTATATTACTGTGCGAAATGGGTGGGGGAGGGTACAGCCCCGATGAATCTGCTCTACTGGGGCCAG
GGAACCC
TGGTCACCGTCTCCTCAGGTGAGTCCTCACAACCTCTCTCCTGCTTTAACTCTGAAGGGTTTTGCTGCATTTT
TGGGG

>gi|112701772|emb|AM082709.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
AC01C01

TGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTC
CAGTGTG
AGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTC
TGGATT
ACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTA
GTGGTAG
TGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACG
CTGTATC
TGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAATAACACCAGGCGTTACTATG
GTTCCGGG
GAGTTATTAAACCGGGCTACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTC
AGGTAAG
AATGGCCACTCTAGGGCCTTTGTT

>gi|402288696|gb|JX432797.1| Homo sapiens isolate MS D04_VHL1_N_4_2010-
11-02_004_D09 immunoglobulin heavy chain variable region (IGHV) gene,
partial sequence

CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGGCCTCAGTGAAGGTTTCCTGCAAGGCAT
CTGGATA
CACCTTCACCAGCTACTATATGCACTGGGTGCGACAGGCCCCCTGGACAAGGGCTTGAGTGGATGGGAATAATC
AACCCTA
GTGGTGGTAGCACAAAGCTACGCACAGAAGTTCCAGGGCAGAGTCACCATGACCAGGGACACGTCCACGAGCAC
AGTCTAC
ATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCGTGTATTACTGTGCGAGAGAAGGACGGTTACGATATT
TTGACTG
GTTAGGAAATACTTTCCCCGTAGGCCCTGACTACTGG

>gi|47846372|emb|AJ579097.1| Homo sapiens partial mRNA for IgM
immunoglobulin heavy chain variable region (IGHV3-30 gene), clone T1.3.4
CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCGT
CTGGATT
CACCTTCAGTAGCTATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGGCATTATATA
CGGTATG

ATGGAAGTAATAAATACTATGCAGACTCCGTGAAGGGCCGATTACCATCTCCAGAGACAATTCCAAGAACAC
GCTGTAT
CTGCAAATGAACAGCCTGAGAGCTGAGGACACGGCTGTGTATTACTGTGCGAAAGATCCCAGTTACTATGGTT
CGGGGAC
AATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCA
>gi|270053703|dbj|AB203707.1| Homo sapiens gene for immunoglobulin heavy
chain variable region, partial cds, clone: CB11_IV-9H
GATCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACCCCTCCTGTGCAGCCTCTG
GATTCGC
CTTCAGTAGCTATGTTCTGCACTGGGTTCGCCGGGCTCCAGGGAAGGGTCCGGAGTGGGTATCAGCTATTGGT
ACTGGTG
GTGATACATACTATGCAGACTCCGTGATGGGCCGATTACCATCTCCAGAGACAACGCCAAGAAGTCCTTGTA
TCTTCAA
ATGAACAGCCTGATAGCTGAGGACATGGCTGTGTATTATTGTGCAAGAGTTGAGGATTCCCGAATTACTATGG
TTCGGGG
AGTTATTATAGTGTCTACTACTACTACGGTATGGACGTCTGGGGCCA
>gi|5051303|emb|AJ245350.1| Homo sapiens mRNA for immunoglobulin gamma
heavy chain variable region, partial, clone 1A-3GP10
CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCTGGGAGGTCCCTGAGACTCTCCTGTGCAGCCT
CTGGATT
CACCTTCAGTAGCTATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGGCAGTTATA
TCATATG
ATGGAAGTAATAAATACTATGCAGACTCCGTGAAGGGCCGATTACCATCTCCAGAGACAATTCCAAGAACAC
GCTGTAT
CTGCAAATGAACAGCCTGAGAGCTGAGGACACGGCTGTGTATTACTGTGCGAAAGATCACGGCAGTGGCTGGC
AGTACTT
TGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|247424996|gb|FJ488810.1| Homo sapiens isolate ADM-VH3-132
immunoglobulin heavy chain variable region (IGHV3) gene, partial cds
GAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCT
CTGGATT
CACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATT
AGTGGTA
GTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTACCATCTCCAGAGACAATTCCAAGAACAC
GCTGTAT
CTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGTCCCTACGGTGGTAACTC
AATCTTA
CTACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGGGAGT
>gi|112702131|emb|AM082892.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
CF07B14
TGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTT
TGCAGGT
GTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCT
GTGCAGC
CTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTC
TCAGCTA
TTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTACCATCTCCAGAGACAATTC
CAAGAAC
ACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAACTCCCCCGGG
GGTCGTA
AATTACAATATTGTAGTAGTACCAGCTGCTATGAGCTGAGGTATGGACGTCTGGGGCCAAGGGACCACGGTCA
CCGTCTC
CTCAGGTAAGAATGGCCACTCTAGGGCCTTTGTT

>gi|270052842|dbj|AB203238.1| Homo sapiens gene for immunoglobulin heavy chain variable region, partial cds, clone: T18_III-12A
CAGGTGCAGCTGCAGGAGTCGGGCCAGGACTGGTGAAGCCTTCACAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGG
CTCCATCAGCAGTGGTAGTTACTACTGGAGCTGGATCCGGCAGCCCGCCGGAAGGGACTGGAGTGGATTGGGCGTATCT
ATACCAGTGGGAGCACCAACTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACAGTTC
TCCCTGAAGCTGAGCTCTGTGACCGCCGAGACACGGCCGTGTATTACTGTGCGAGATCAAGGGAATATCAGTATTACTA
TGATAGTAGTGGTTACCTAAAGGGGGCTTCTACTTTGACTACTGGGGCCAGGGAAC
>gi|402288331|gb|JX432432.1| Homo sapiens isolate MS VH1_K2b_6_2010-09-10_001_E05 immunoglobulin heavy chain variable region (IGHV) gene, partial sequence
CAGGTTTCAGCTGGTGCAGTCTGGAGCTGAGGTGAAGAAGCCTGGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGTTA
CACCTTTACCAGCTATGGTATCAGCTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGGATGGATCAGCGCTT
ACAATGGTAACACAACTATGCACAGAAGCTCCAGGGCAGAGTCACCATGACCACAGACACATCCACGAGCACAGCCTAC
ATGGAGCTGAGGAGCCTGAGATCTGACGACACGGCCGTGTATTACTGTGCGAGAGATAGTATATGGTTCGGGGAGTCCCA
CGCGCGTTACTACTACTACGGTATGGACGTCTGG
>gi|47846508|emb|AJ579165.1| Homo sapiens partial mRNA for IgM immunoglobulin heavy chain variable region (IGHV4-34 gene), clone T2.4.30
CAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGTTGAAGCCTTCGAGACCCTGTCCCTCACCTGCGCTGTCTATGGTGG
GTCCTTCAGTGGTTACTACTGGAGCTGGATCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAATCAATCATA
GTGGAAGCACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTCTCCCTG
AAGCTGAGCTCTGTGACCGCCGCGGACACGGCTGTGTATTACTGTGCGACCGGCGGGCCCGATATTTTGACTGTCGTAG
CTGGTTCGACCCCTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|46254320|gb|AY393196.1| Homo sapiens clone RA702-M5-23.fa immunoglobulin heavy chain mRNA, partial cds
CTCCTCCTGGCTGTTCTCCAAGGAGTCTGTGCCGAGGTGCAGCTGGTGCAGTCTGGAGCAGAGGTGAAAAAGCCGGGGGA
GTCTCTGAAGATCTCCTGTAAGGGTTCTGGATACAGCTTTACCAGCTACTGGATCGGCTGGGTGCGCCAGATGCCGGGA
AAGGCCTGGAGTGGATGGGGATCATCTATCCTGGTGACTCTGATACCAGATACAGCCCGTCCTTCCAAGGCCAGGTCACC
ATCTCAGCCGACAAGTCCATCAGCACCGCCTACCTGCAGTGGAGCAGCCTGAAGGCCTCGGACACCGCCATGTATTACTG
TGCGAGACACCTCCGCGGGTATAACTGGAACGACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGGGA
GTGCATCCGCCCCAACCCCTTTTCCCCCTCGTCTCCTGTGAGAATTCCCCGTGCGATACGAGCAGCGTGGCCGTGGCTGC
CTCGCACAGGACTTCCTT
>gi|112692157|emb|AM077876.1| Homo sapiens partial IGHV3-23*01 gene for immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone CE03A09
TGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTTGTGTGCAGGT

GTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCT
GTGCAGC
CTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTC
TCAGCTA
TTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTC
CAAGAAC
ACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGAAAACCTTC
CGATTTG
GAGTGGTTATTTCGGAATACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCA
GGTAAGA
ATGGCCACTCTAGGGCCTTTGTT
>gi|54780273|gb|AY671459.1| Homo sapiens clone 1d420 immunoglobulin mu
heavy chain mRNA, partial cds
CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCACTGTCT
CTGGTGG
CTCCATCAGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCAGGGAAGGGACTGGAGTGGATTGGGTATATC
TATTACA
GTGGGAGCACCAACTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTT
CTCCCTG
AAGCTGAGCTCTGTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGAGATCGGAGTACGGCAGCTGGTACG
ACTACTG
GGGCCAGGGAACCCTGGTCACCGTCTCCTCAG
>gi|5834019|gb|AF174030.1|AF174030 Homo sapiens clone 77u-c17
immunoglobulin heavy chain variable region precursor (IgH) mRNA, partial
cds
ATGGAATTGGGGCTGAGCTGGGTTTTCTTTGTTGCTATTTTAGAAGGTGTCCAGTGTGAGGTGCAGCTGGTGG
AGTCTGG
GGGAGGCTTGGTCCAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGTAGCTAT
TGGATGA
GCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTGGCCAACATAAAGCAAGATGGAAGTGAGAAATA
CTATGTG
GACTCTGTGAAGGGCCGATTCACCATCTCCAGAGACAACGCCAAGAACTCACTGTATCTGCAAATGAACAGCC
TGAGAGC
CGAGGACACGGCTGTGTATTACTGTGCGAGAGATGGGGATATCGGTGACTGGTGGTTCGACCCCTGGGGCCAG
GGAACCC
TGGTCACCGTCTCCTCAGGG
>gi|5834215|gb|AF174128.1|AF174128 Homo sapiens clone sc77u-56
immunoglobulin heavy chain variable region (IgH) mRNA, partial cds
CAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTCACAGACCCTGTCCCTCACCTGCACTGTCT
CTGGTGG
CTCCATCAGCAGTGGTGGTTACTACTGGAGCTGGATCCGCCAGCACCCAGGGAAGGGCCTGGAGTGGATTGGG
TACATCT
ATTACAGTGGGAGCACCTACTACAACCCGTCCCTCAAGAGTCGAGTTACCATATCAGTAGACACGTCTAAGAA
CCAGTTC
TCCCTGAAGCTGAGCTCTGTGACTGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGTAAATCCCACCGGGG
ACTACTA
CTACGGTATGGACGTCTGGGGCCAAGGGACCACGGACCCCGTATCC
>gi|15886959|emb|AJ414009.1| Homo sapiens partial mRNA for immunoglobulin
heavy chain variable region (IGVH gene), isolate CLL023
CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGTCTCGGTGAAGGTCTCCTGCAAGGCTT
CTGGAGG
CACCTTCAGCAGCTATGCTATCAGCTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATC
ATCCCTA

TCTTTGGTACAGCAAACACTACGCACAGAAGTTCCAGGGCAGAGTCACGATTACCGCGGACAAATCCACGAGCAC
AGCCTAC
ATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCGTGTATTACTGTGCGAGAGCGTGGAAGGCTCCTGATT
ACGATTT
TTGGAGTGGTTATTATACCGGTATTCTCTGGTTTCGACCCCTGGGGCCAAGGAACCCTGGT

>gi|112692329|emb|AM077962.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
BU04A28
TGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTTGT
TGCAGGT
GTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCT
GTGCAGC
CTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTC
TCAGCTA
TTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTC
CAAGAAC
ACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATTCCCACA
CAAGTTA
TAGCAGCAGCTGGTACGCCTGGGGCTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTC
TCCTCAG
GTAAGAATGGCCACTCTAGGGCCTTTGTT

>gi|3171060|gb|AF062294.1|AF062294 Homo sapiens clone 48sc-27
immunoglobulin heavy chain variable region (IGH) mRNA, partial cds
GTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTCAAGCCTGGAGGGTCCCTGAGACTCTCCTGTGCAGCCTCTG
GATTAC
CTTCAGTGACTACTACATGAGCTGGATCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTTTCATACATTAGT
AGTAGTG
GTAGTACCATATACTACGCAGACTCTGTGAAGGGCCGATTACCATCTCCAGGGACAACGCCAAGAACTCACT
GTATCTG
CAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTGTATTACTGTGCGAGAGGGGTGGGATATTGTAGTGGTG
GTAGCTG
CCAAAACCTGGTTTCGACCCCTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGGG

>gi|112693473|emb|AM078535.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
AG14A21
GGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGA
GTCTGGG
GGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATG
CCATGAG
CTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATAC
TACGCAG
ACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCT
GAGAGCC
GAGGACACGGCCGTATATTACTGTGCGAAAGATCGAATAGGGTTTGC GGACCGACTCACTTCCTACTACTACG
GTATGGA
CGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCCTTTGTT
>gi|18092601|gb|AF455551.1|AF455551 Homo sapiens clone RIZMVH7 anti-
cardiolipin immunoglobulin heavy chain mRNA, partial cds
CAGATCACCTTGAAGGAGTCTGGTCCTACGCTGGTGAAACCCACACAGACCCTCACGCTGACCTGCACCTTCT
CTGGGTT
CTCACTCAGCACTAGTGGAGTGGGTGTGGGCTGGATCCGTCAGCCCCCAGGAAAGGCCCTGGAGTGGCTTGCA
CTCATTT

ATTGGAATGATGATAAGCGCTACAGCCCATCTCTGAAGAGCAGGCTCACCATCACCAAGGACACCTCCAAAA
CCAGGTG
GTCCTTACAATGACCAACATGGACCCTGTGGACACAGCCACATATTACTGTGCACACAGACCTGCAAATTACG
ATTTTTG
GAGTGGTTATTATACCGGTAGTGGCTGGTTTACGCCCCTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|237702013|gb|FJ385358.1| Homo sapiens isolate RSV240H immunoglobulin
heavy chain variable region mRNA, partial cds
GGGAGGCTTGGTACAGCCTGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTAT
GCCATGA
GCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATA
CTACGCA
GACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCC
TGAGAGC
CGAGGACACGGCCGTATATTACTGTGCGAAATCCCGATCTGCCGATCGCGCTAGATTACGATATTTTACTGG
TTATCGC
CTCCTTTTACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|54780697|gb|AY671685.1| Homo sapiens clone 5fb62 immunoglobulin mu
heavy chain mRNA, partial cds
CAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGCTGTCT
ATGGTGG
GTCCTTCAGTGGTTACTACTGGAGCTGGATCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAATC
AATCATA
GTGGAAGCACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTT
CTCCCTG
AAGCTGAGCTCTGTGACCGCCGCGACACGGCTGTGTATTACTGTGCGAGAGGCGATTGTAGTAGTACCAGCT
GCTATAT
CTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAG
>gi|112690631|emb|AM077112.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
CD07B08
TGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTTGT
TGCAGGT
GTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCT
GTGCAGC
CTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTC
TCAGCTA
TTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTC
CAAGAAC
ACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAAACATGGCCC
AATACCA
GCTCGCTATCCCTGCTTTTGATATCTGGGGCCAAGGGACAATGGTCACCGTCTCTTCAGGTAAGATGGCTTTC
CTTCTGC
CTCCTTTCTCTGGGGCCAGCGTCCTCTGTCC
>gi|112692720|emb|AM078158.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
AQ02B27
GCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGAC
TCTCCTG
TGCAGCCTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAG
TGGGTCT
CAGCTATTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGA
CAATTCC
AAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGACC
TCATGTA

TAGCAGCAGCTGGTACGACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCA
GGTAAGA
ATGGCCACTCTAGGGCCTTTGTT
>gi|270054451|dbj|AB204107.1| Homo sapiens gene for immunoglobulin heavy
chain variable region, partial cds, clone: CB11_VII-11A
GTAAGGGGCTCCCCAGTCACTGGGCTGAGGGAGAAACCAGCACAGTCAAGTGAGACTTCATGCACTCCCATCT
CCTCTCC
ACAGGTGCCCCTCCAGGTGCAGCTGGTGCAATCTGGGTCTGAGTTGAAGAAGCCTGGGGCCTCAGTGAAGG
TTTCCTG
CAAGGCTTCTGGATACACCTTCACTAGCTATGCTATGAATTGGGTGCGACAGGCCCCCTGGACAAGGGCTTGAG
TGGATGG
GATGGATCAACACCAACACTGGGAACCCAACGTATGCCAGGGCTTCACAGGACGGTTTGTCTTCTCCTTGGA
CACCTCT
GTCAGCACGGCATATCTGCAGATCTGCAGCCTAAAGGCTGAGGACACTGCCGTGTATTACTGTGCGAGAGATC
CCTCTTC
CTTCCAGGGTACCAGCTGGCAAGGTGGTGACGGTATTGACTACTGGGGCCAGGGAAC
>gi|402288163|gb|JX432264.1| Homo sapiens isolate JJ VH1_N1a_4_2010-09-
06_004_H05 immunoglobulin heavy chain variable region (IGHV) gene,
partial sequence
CAGGTCCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGTCTCGGTGAAGGTCTCCTGCAAGGCTT
CTGGAGG
CACCTTCAGCAGCTATGCTATCAGCTGGGTGCGACAGGCCCCCTGGACAAGGGCTTGAGTGGATGGGAAGGATC
ATCCCTA
TCCTTGGTATAGCAAACCTACGCACAGAAGTTCCAGGGCAGAGTCACGATTACCGCGGACAAATCCACGAGCAC
AGCCTAC
ATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCGTGTATTACTGTGCGAGAGCCGAGATGAAATATTGTG
GTGGTGA
CTGCTATTCCGCTACTTCCGGACGCTACTACTACTACGGTATGGACGTCTGG
>gi|602000|emb|Z46322.1| H.sapiens immunoglobulin heavy chain VDJ region
(SEBV B13)
CTACAGCAGTGGGGCGCAGGACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGCTGTCTATGGTGGGT
CCTTCAG
TGGTTACTACTGGAGCTGGATCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAATCAATCATAGT
GGAAGCA
CCAACACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCTGAA
GCTGAGC
TCTGTGACCGCCGCGGACACGGCTGTGTATTACTGTGCGAGAGAGCGAATTATGATTACATTTGGGGGAGTTA
TCGTTAT
CGACGTACCCTCCGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|3170802|gb|AF062170.1|AF062170 Homo sapiens clone 45u-45
immunoglobulin heavy chain variable region (IGH) mRNA, partial cds
ATGGACTGGACCTGGAGGATCCTCTTCTTGGTGGCAGCAGCAACAGGTGCCCCACTCCCAGGTGCAGCTGGTGC
AATCTGG
GTCTGAGTTGAAGAAGCCTGGGGCCTCAGTGAAGGTTTCTGCAAGGCTTCTGGATACACCTTCACTAGCTAT
GCTATGA
ATTGGGTGCGACAGGCCCCCTGGACAAGGGCTTGAGTGGATGGGATGGATCAACACCAACACTGGGAACCCAAC
GTATGCC
CAGGGCTTCACAGGACGGTTTGTCTTCTCCTTGACACCTCTGTCAGCACGGCATATCTGCAGATCAGCAGCC
TAAAGGC
TGAGGACACTGCCGTGTATTACTGTGCGAGAGACGTGGCTACGATCGATGAAAACCTGGTTCGACCCCTGGGGC
CAGGGAA
CCCTGGTCACCGTCTCCTCAGGG

>gi|112690719|emb|AM077156.1| Homo sapiens partial IGHV3-23*01 gene for immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone BV05A07
TGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTTGT
TGCAGGT
GTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCT
GTGCAGC
CTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTC
TCAGCTA
TTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTC
CAAGAAC
ACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATCCGCCCC
GCGGGAC
AGGAGCTACAACAACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGGTGAGTCCTCACAACCTCTC
TCCTGCT
TTAACTCTGAAGGGTTTTGCTGCATTTTTGGGG
>gi|84797993|gb|DQ322824.1| Homo sapiens immunoglobulin heavy chain variable region EM5-4-PPS-VH3-10 mRNA, partial cds
CCCTTGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCTGGGAGGTCCCTGAGACTCTCCTGTGCAG
CGTCTGG
ATTCACCTTCAGTAGCTATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGGCAGTT
ATATGGT
ATGATGGAAGTAATAAATACTATGCAGACTCCGTGAAGGGCCGATTACCATCTCCAGAGACAATTCGAAGAA
CACGCTG
TATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGAGGGGGCTCGTTTAT
GCTTTGA
CTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGAAGGGCG
>gi|112693495|emb|AM078546.1| Homo sapiens partial IGHV3-23*01 gene for immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone BU05A27
GTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGC
AGGTGTC
CAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTG
CAGCCTC
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GCTATTA
GTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCGA
GAACACG
CTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAACCTACGGTGGTAA
CTCCGAG
GGACTACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGC
CACTCTA
GGGCCTTTGTT
>gi|32648|emb|X63081.1| H.sapiens mRNA for fetal IG heavy chain (FL13-45)
CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTCAAGCCTGGAGGGTCCCTGAGACTCTCCTGTGCAGCCT
CTGGATT
CACCTTCAGTGACTACTACATGAGCTGGATCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTTTCATACATT
AGTAGTA
GTGGTAGTACCATATACTACGCAGACTCTGTGAAGGGCCGATTACCATCTCCAGGGACAACGCCAAGAAGTC
ACTGTAT
CTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTGTATTACTGTGCGGGCCAACCTGGGGGATGATGCTT
TTGATAT
CTGGGGCCAAGGGACAATGGTCACCGTCTCTTCA

>gi|5834095|gb|AF174068.1|AF174068 Homo sapiens clone sc48u-74
immunoglobulin heavy chain variable region (IgH) mRNA, partial cds
GAGGTGCAGCTGGTGCAGTCTGGAGCAGAGGTGAAAAAGCCCGGGAGTCTCTGAAGATCTCCTGTAAGGGTT
CTGGATA
CAGCTTTACCAGCTACTGGATCGGCTGGGTGCGCCAGATGCCCGGAAAGGCCTGGAGTGGATGGGGATCATC
TATCCTG
GTGACTCTGATACCAGATACAGCCCGTCCTTCCAAGGCCAGGTACCATCTCAGCCGACAAGTCCATCAGCAC
CGCCTAC
CTGCAGTGGAGCAGCCTGAAGGCCTCGGACACCGCCATGTATTACTGTGCGAGATCGAGTGACACAAAGGGGG
CATACTA
CTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTGTCTCCTCAGGG
>gi|112692181|emb|AM077888.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
BV03A62
CAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGG
CTTGGA
CAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGG
TCCGCCA
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GTGAAGG
GCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGA
CACGGCC
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GTATGGA
CGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCCTTTGTT
>gi|304435953|gb|HM474416.1| Homo sapiens clone IGH rearrangement case 8
genomic sequence
TATTACATGAAAAACATCTGTGGTTCTTCCTCCTGCTGGTGGCGGCTCCCAGATGTGAGTGTCTTAGGATGC
AGACATG
GAGATATGGGAGGCTGCCTCTGATCCCAGGGCTCACTGTGGGTTTTTCTGTTTCACAGGGGTCCTGTCCCAGCT
GCAGCTG
CAGGAGTCGGGCCCAGGACTGGTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCA
TCAGCAG
TAGTAGTTACTACTGGGGCTGGATCCGCCAGCCCCCAGGGAAGGGGCTGGAGTGGATTGGGAGTATCTATTAT
AGTGGGA
GCACCTACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCT
GAAGCTG
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GGGAGA
AAACTGGTTCGACCCCTGGGGCCAGGGA
>gi|270053561|dbj|AB203636.1| Homo sapiens gene for immunoglobulin heavy
chain variable region, partial cds, clone: CB11_I-1H
CACAGGTAAGAGGCTCCCTAGTCCCAGTGATGAGAAAGAGATTGAGTCCAGTCCAGGGAGATCTCATCCACTT
CTGTGTT
CTCTCCACAGGAGCCCACTCCCAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGGCCTCAG
TGAAGGT
CTCCTGCAAGGCTTCTGGATACACCTTCACCGGCTACTATATGCACTGGGTGCGACAGGCCCCCTGGACAAGGG
CTTGAGT
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CAGGGAC
ACGTCCATCAGCACAGCCTACATGGAGCTGAGCAGGCTGAGATCTGACGACACGGCCGTGTATTACTGTGCGA
GAGCTAG
TAGAACTGAGAGTGTAAGGGATATATACTTTGACTACTGGGGCCAGGGAAC

>gi|247424945|gb|FJ488793.1| Homo sapiens isolate ADM-VH3-115
immunoglobulin heavy chain variable region (IGHV3) gene, partial cds
GAGGTGCAGCTGGTGGAGTCTGGAGGAGGCTTGATCCAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCT
CTGGGTT
CACCGTCAGTAGCAACTACATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGTTATT
TATAGCG
GTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGATTACCATCTCCAGAGACAATTCCAAGAACACGCT
GTATCTT
CAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTGTATTACTGTGCGAGAAGTCGGTTCGGTTGGTTCGACC
CCTGGGG
CCAGGGAACCCTGGTCAACGTCTCCTCAGGGAGT
>gi|39938326|gb|AY393531.1| Homo sapiens isolate RA129-M1-67.fa
immunoglobulin heavy chain variable region mRNA, partial cds
GTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGGCCTCAGTGAAGGTTTCCTGCAAGGCTTCTGGATACACCT
TCACTAG
CTATGCTATGCATTGGGTGCGCCAGGCCCCGGACAAAGGCTTGAGTGGATGGGATGGATCAACGCTGGCAAT
GGTAACA
CAAAATATTACAGAAGTTCCAGGGCAGAGTCACCATTACCAGGGACACATCCGCGAGCACAGCCTACATGGA
GCTGAGC
AGCCTGAGATCTGAAGACACGGCTGTGTATTACTGTGCGAGAGAGTACGGTTCAAACCTACTACTACTACGGTA
TGGACGT
CTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGGAGTGCATCCGCCCCAACCCCTTTTCCCCCTCGTCTCC
TGTGAGA
ATTCCTCCGTCGGATACGAGCAGCGTGGCCGTTGGCTGCCTCGCACAGGACTTCCTTCCCGACTCCATCACTTT
CTCCTG
>gi|74095346|emb|AJ889826.1| Homo sapiens partial IGHV gene for
immunoglobulin heavy chain variable region, clone 2583310
GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCT
CTGGATT
CACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATT
AGTGGTA
GTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACAC
GCTGTAT
CTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATCTGGCGAGTATAGCAG
CTCGTTT
TGACTACTGGGGCCAGGGAACCCTGGTCAACGTCTCCTCAG
>gi|112692149|emb|AM077872.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
AS02A22
GTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGG
GAGGCTT
GGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATGCCATGAGC
TGGGTCC
GCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATACTACGCAGA
CTCCGTG
AAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAGCCG
AGGACAC
GGCCGTATATTACTGTGCGAAAAGTCTCGCGATTGTAGTAGTACCAGTTGCTATTTACTACTACGGTATGGAC
GTCTGGG
GCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCTTTTGTT
>gi|112691996|emb|AM077795.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
CF01B03

TGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTT
TGCAGGT
GTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCT
GTGCAGC
CTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTC
TCAGCTA
TTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTC
CAAGAAC
ACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATCTTCGGT
ATCACTG
GTCCGCAATATACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCAC
TCTAGGG
CCTTTGTT

>gi|112691525|emb|AM077559.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
AC01D18

TGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTT
TGCAGGT
GTCCAGTGTGGGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCT
GTGCAGC
CTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTC
TCAGCTA
TTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTC
CAAGAAC
ACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATTACTATG
ATAGTAG
TGGTTATTACTCTATCTGTCTGGGTGCTGGTTTCGACCCCTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
GGTGAGT
CCTCACCACCCCTCTCTGAGTCCACTTAGGGAGACTCAGCTTGCCAGGGTCTCA

>gi|270053759|dbj|AB203735.1| Homo sapiens gene for immunoglobulin heavy
chain variable region, partial cds, clone: CB11_I-4A
GTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTG
GATTCAC
CTTCAGTAGCTATAGCATGAACTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTTTCATACATTAGT
AGTAGTA
GTAGTACCATATACTACGCAGACTCTGTGAAGGGCCGATTACCATCTCCAGAGACAATGCCAAGAACTCACT
GTATCTG
CAAATGAACAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGAGGGGATTTTGAATTGTAGTA
GTACCAG
CTGCTCAGATGCTTTTGATATCTGGGGCCA

>gi|219566190|dbj|AB363162.1| Homo sapiens IGH mRNA for immunoglobulin
heavy chain, partial cds, clone: F021-385H
GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTAAAGCCTGGGGGGTCCCTTAGACTCTCCTGTGCAGCCT
CTGGATT
CACTTTCAGTAACGCCTGGATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTTGGCCGTATT
AAAAGCA
AAACTGATGGTGGGACAACAGACTACGCTGCACCCGTGAAAGGCAGATTACCATCTCAAGAGATGATTCAAA
AAACACG
CTGTATCTGCAAATGAACAGCCTGAAAACCGAGGACACAGCCGTGTATTACTGTACCACAGAGTATAGTGGGA
GCTATTT
CTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCGAGC

>gi|112691190|emb|AM077393.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
CM07B17

AGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTG
CAGGTGT
CCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGT
GCAGCCT
CTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTC
AGCTATT
AGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCA
AGAACAC
GCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAATCCGGCAGCGTAT
GATTACG
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CTCCTGC
TTTAACTCTGAAGGGTTTTGCTGCATTTTTTGGGG
>gi|15886975|emb|AJ414017.1| Homo sapiens partial mRNA for immunoglobulin
heavy chain variable region (IGVH gene), isolate CLL031
CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGTCTCGGTGAAGGTCTCCTGCAAGGCTT
CTGGAGG
CACCTTCAGCAGCTATGCTATCAGCTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATC
ATCCCTA
TCTTTGGTACAGCAAACACTACGCACAGAAGTTCCAGGGCAGAGTCACGATTACCGCGGACGAATCCACGAGCAC
AGCCTAC
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GTTATTC
GAACCCAGGTTGGGGCCGGGTATATACTACTACTACTACGGTATGGACGTCTGGGGGCAAGGGACCACGGT
>gi|54779922|gb|AY671268.1| Homo sapiens clone 505321+t7 immunoglobulin
mu heavy chain mRNA, partial cds
GTATGAAACACCTGTGGTTCTTCCTCCTGCTGGTGGCAGCTCCCAGATGGGTCTGTCCCAGGTGCAGCTACA
GCAGTGG
GGCGCAGGACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGCTGTCTATGGTGGGTCTTCAGTGGTT
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TACAACC
CGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGT
GACCGCC
GCGGACACGGCTGTGTATTACTGTGCGAGAGAGCCGGGTATGATTACGTTTGGGGGGGAGCTACTTTGACT
ACTGGGG
CCAGGGAACCCTGGTCACCGTCTCCTCAGGGAGTGCATCCGCCCCAACCCCTTTTCCCCCTCGTCTCCTGTGAG
AATTCCC
CGTC
>gi|21668867|dbj|AB063833.1| Homo sapiens IGH mRNA for immunoglobulin
heavy chain VHDJ region, partial cds, clone:H183
GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCTGGGAGGTCCCTGAGACTCTCCTGTGCAGCCT
CTGGATT
CACCTTCAGTAGCTATGCTATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGGCAGTTATA
TCATATG
ATGGAAGTAATAAATACTACGCAGACTCCGTGAAGGGCCGATTCACCATCTCCAGAGACAATTCCAAGAACAC
GCTGTAT
CTGCAAATGAACAGCCTGAGAGCTGAGGACACGGCTGTGTATTACTGTGCGAGCGAGCTCCGTATAGCAGTGA
AGGGTTA
CTACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCGAGC
>gi|5679489|emb|AJ389179.1| Homo sapiens partial mRNA for immunoglobulin
heavy chain variable region (IGVH gene), sample GN12
CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGTCTCGGTGAAGGTCTCCTGCAAGGCTT
CTGGAGG

CACCTTCAGCAGCTATGCTATCAGCTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATC
ATCCCTA
TCTTTGGTACAGCAAACCTACGCACAGAAGTTCCAGGGCAGAGTCACGATTACCGCGGACAAATCCACGAGCAC
AGCCTAC
ATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCGTGTATTACTGTGCGGAGGGTATGGTTCAGGGAGTTA
TTGGAAT
TTACTACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGGAGTGCATCC
GCC
>gi|37671|emb|X62956.1| H.sapiens rearranged mRNA for fetal IG heavy
chain Vh3, DM1 or Dq52 and Jh4 (clone FL13-15)
GAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGTTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCT
CTGGATT
CACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGTCTCAGCTATT
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GTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACAC
GCTGTAT
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CTTTTGA
CTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|402288387|gb|JX432488.1| Homo sapiens isolate Marc D2-VH1-69-10-rev-
34_2011-05-27_001 immunoglobulin heavy chain variable region (IGHV) gene,
partial sequence
CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGTCTCGGTGAAGGTCTCCTGCAAGGCTT
CTGGAGG
CACCTTCAGCAGCTATGCTATCAGCTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATC
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TAGTGGT
TATTAAAGGTGATGATGCTTTTGATATCTGG
>gi|270054978|dbj|AB204407.1| Homo sapiens gene for immunoglobulin heavy
chain variable region, partial cds, clone: CB11_IX-9F
CTCTGTTCCAGGGAGTCCCTGTCTCAGGTGCAGCTGCAGGAGTCGGGCCAGGACTGGTGAAGCCTTCGGGGAC
CCTGTCC
CTCACCTGCGCTGTCTCTGGTGGCTCCATCAGCAGTAGTAACTGGTGGAGTTGGGTCCGCCAGCCCCCAGGGA
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TCAGTAG
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GAGACAT
CAGCTAATTACGATATTTTAGGGGACTTTGACTACTGGGGCCAGGGAGC
>gi|112693977|emb|AM078786.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
CE16A03
GGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGA
GTCTGGG
GGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATG
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TACGCAG
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GAGGACACGGCCGTATATTACTGTGCGAACCATTACGATATTTTGACTGGTTATTATTCGTATTACTACTACT
ACTACGG
TATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCCTTTGTT
>gi|46811527|gb|AY607414.1| Homo sapiens isolate CB#4/#186/8F
nonfunctional non-productive immunoglobulin heavy chain CDR3, partial
sequence
ACTGGTGAAGCCTTCACAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCATCAGCAGTGGTAGTTAC
TACTGGA
GCTGGATCCGGCAGCCCCGCCGGAAGGGACTGGAGTGGATTGGGCGTATCTATAACCAGTGGGAGCACCAACTA
CAACCCC
TCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGA
CCGCCGC
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TGGACTA
CTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|47846446|emb|AJ579134.1| Homo sapiens partial mRNA for IgM
immunoglobulin heavy chain variable region (IGHV4-39 gene), clone T1.4.44
CAGCTGCAGCTGCAGGAGTCGGGCCAGGACTGGTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCACTGTCT
CTGGTGG
CTCCATCAGCAGTAGTAGTTACTACTGGGGCTGGATCCGCCAGCCCCAGGGAAGGGCTGGAGTGGATTGGG
AGTATCT
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CCAGTTC
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TAGAGAT
GACGAACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|4995478|emb|AJ245010.1| Homo sapiens mRNA for immunoglobulin mu heavy
chain variable region, partial, clone 1-E9
CAGGTGCAGCTGCAGGAGTCGGGCCAGGACTGGTGAAGCCTTCACAGACCCTGTCCCTCACCTGCACTGTCT
CTGGTGG
CTCCATCAGCAGTGGTGGTTACTACTGGAGCTGGATCCGCCAGCACCCAGGGAAGGGCTGGAGTGGATTGGG
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CCAGTTC
TCCCTGAAGCTGAGCTCTGTGACTGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGATCGGGCATATTGTA
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CAGCTGCTATGCGGAGGACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCA
>gi|112693489|emb|AM078543.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
AQ05A02
GGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGA
GTCTGGG
GGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATG
CCATGAG
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TACGCAG
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GAGAGCC
GAGGACACGGCCGTATATTACTGTGCGAAAGGGGGGTATTGTAGTGGTGGTAGCTGCTACCAGAAATCTTATT
ACTACTA
CTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGG
GCCTTTG
TT

>gi|46254204|gb|AY393137.1| Homo sapiens clone RA702-M1-5.fa
immunoglobulin heavy chain mRNA, partial cds
GTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGTCTCGGTGAAGGTCTCCTGCAAGGCTTCTGGAGGCACCT
TCAGCAG
CTATGCTATCAGCTGGGTGCGACAGGCCCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATCATCCCTATCTTT
GGTACAG
CAAACCTACGCACAGAAGTTCCAGGGCAGAGTCACGATTACCGCGGACGAATCCACGAGCACAGCCTACATGGA
GCTGAGC
AGCCTGAGATCTGAGGACACGGCCGTGTATTACTGTGCGAGGGCAATTCTTCTCTTGCTCGGCAGCCGGACC
CTCGCTT
TGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGGGAGTGCATCCGCCCCAACCCCTTTTCCCCCTC
GTCTCCT
GTGAGAATTCCCCGTCGGATACGAGCAGCGTGGCCGTTGGCTGCCTCGCACAGGACTTCCTT
>gi|112691185|emb|AM077390.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
CE47A36
TACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTC
TGGGGGA
GGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATGCCA
TGAGCTG
GGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATACTAC
GCAGACT
CCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAG
AGCCGAG
GACACGGCCGTATATTACTGTGCGAAAACCCAAGGGCGACGTAGAGATGGCTACAAAGGTCAATTTGACTACT
GGGGCCA
GGGAACCCTGGTCACCGTCTCCTCAGGTGAGTCCTCACAACTCTCTCCTGCTTTAACTCTGAAGGGTTTTGC
TGCATTT
TTGGGG
>gi|270054509|dbj|AB204152.1| Homo sapiens gene for immunoglobulin heavy
chain variable region, partial cds, clone: CB11_XI-2H
CAGGTAAGGGGCTTCCTAGTCCTAAGGCTGAGGAAGGGATCCTGGTTTAGTTAAAGAGGATTTTATTACCCC
TGTGTCC
TCTCCACAGGTGTCCAGTCCCAGGTCCAGCTGGTGAATCTGGGGCTGAGGTGAAGAAGCCTGGGTCTCGGT
GAAGGT
TCCTGCAAGGCTTCTGGAGGCACCTTCAGCAGCTATACTATCAGCTGGGTGCGACAGGCCCCCTGGACAAGGGC
TTGAGTG
GATGGGAAGGATCATCCCTATCCTTGGTATAGCAAACCTACGCACAGAAGTTCCAGGGCAGAGTCACGATTACC
GCGGACA
AATCCACGAGCACAGCCTACATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCGTGTATTACTGTGCGAG
AGGGAGA
TATTGTACTAATGGTGTATGCTACTGGTACTTCGATCTCTGGGGCCGTGGCAC
>gi|270054908|dbj|AB204353.1| Homo sapiens gene for immunoglobulin heavy
chain variable region, partial cds, clone: CB11_IX-10E
CTCTGTTACAGGGGTCCTGTCCCAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGTTGAAGCCTTCGGAGAC
CCTGTCC
CTCACCTGCGCTGTCTATGGTGGGTCTTTCAGTGGTTACTACTGGAGCTGGATCCGCCAGCCCCCAGGGAAGG
GGCTGGA
GTGGATTGGGGAAATCAATCATAGTGGAAGCACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCA
GTAGACA
CGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCCGCGGACACGGCTGTGTATTACTGTGCGAA
TATAGCA
GCAGCTGGTTACTTTGACTACTGGGGCCAGGGAAC

>gi|112691883|emb|AM077738.1| Homo sapiens partial IGHV3-23*01 gene for immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone BD03C16
TAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTGTTCAGGTGTCCAGTGTGAGGT
GCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGA
TTCACCT
TTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGG
TAGTGGT
GGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTACCATCTCCAGAGACAATTCCAAGAACACGCTGT
ATCTGCA
AATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATCTCCGGCCTATGGTTCGGGGA
GTTATTA
TAAGGGACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCC
>gi|122892315|gb|EF178070.1| Homo sapiens clone HVK1-9 immunoglobulin heavy chain variable region mRNA, partial cds
ATGGCCCAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGGCCTCAGTGAAGGTTTCCTGCA
AGGCATC
TGGATACACCTTACCAGCTACTATATGCACTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGGA
ATAATCA
ACCCTAGTGGTGGTAGCACAAGCTACGCACAGAAGTTCCAGGGCAGAGTCACCATGACCAGGGACACGTCCAC
GAGCACA
GTCTACATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCGTGTATTACTGTGCGAGAGATCCAAGGGGGG
GCTATGG
TTCTGGAGCCAATTACTACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCA
>gi|323431427|gb|HM995567.1| Homo sapiens isolate P2_Inf_2.3.6
immunoglobulin variable region mRNA, partial cds
GTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAGCCTGGGAGGTCCCTGAGACTCTCCTGTGCAGCGTCTG
GATTAC
CTTCAGTAGCTATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGGCAGTTATATGG
TATGATG
GAAGTAATAAATACTATGCAGACTCCGTGAAGGGCCGATTACCATCTCCAGAGACAATTCCAAGAACACGCT
GTATCTG
CAAATGAACAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGATCAAAGCAGTGGCTGGTACT
TTGACTA
CTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGGGAGTGCATCCGCCCCAACCCCTTTTCCCCTCGTCTCCT
GTGAGAA
TTCCCCGTCGGATACG
>gi|46811517|gb|AY607409.1| Homo sapiens isolate CB#4/#187/2H
immunoglobulin heavy chain CDR3 gene, partial cds
CCTTCGGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCATCAGCAGTAGTAGTTACTACTGGGGCT
GGATCCG
CCAGCCCCCAGGGAAGGGGCTGGAGTGGATTGGGAGTATCTATTATAGTGGGAGCACCTACTACAACCCGTCC
CTCAAGA
GTCGAGTCACCATATCCGTAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTGACCGCCGCAGA
CACGGCT
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ACGTCTG
GGGCCAAGGGACCACGGTCACCGTCTCCTCA
>gi|371447646|gb|JN577566.1| Homo sapiens isolate RAR0701DT
immunoglobulin G heavy chain variable region mRNA, partial cds
GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTAAAGCCTGGGGGGTCCCTTAGACTCTCCTGTGCAGCCT
CTGGATT

CACTTTCAGTAACGCCTGGATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTGGCCGTATT
AAAAGCA
AAACTGATGGTGGGACAACAGACTACGCTGCACCCGTGAAAGGCAGATTACCATCTCAAGAGATGATTCAAA
AAACACG
CTGTATCTGCAAATGAACAGCCTGAAAACCGAGGACACAGCCGTGTATTACTGTACCACAGAGGTGGATATAG
TGGCTAC
GGGGGGGCCGGTCTACTGGGGCCAGGGAACCCTGGTCAACGTCTCCTCA
>gi|237701879|gb|FJ385291.1| Homo sapiens isolate RSV15H immunoglobulin
heavy chain variable region mRNA, partial cds
ATGGCCGAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTG
CAGCCTC
TGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCA
GCTATTA
GTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAA
GAACACG
CTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATGCCAGGTGGC
TACAATT
AGAATACTTCCAGCACTGGGGCCAGGGAACCCTGGTCAACGTCTCCTCAGCCGGTACCAAGGGCCC
>gi|112691693|emb|AM077643.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
BI01C94
TGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTT
TGCAGGT
GTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCT
GTGCAGC
CTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTC
TCAGCTA
TtagtGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTC
CAAGAAC
ACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATCTTTACA
GTACCAG
CTGCTATCTAAACCTCTGTCACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCC
TCAGGTA
AGAATGGCCACTCTAGGGCCTTTGTT
>gi|158426869|gb|EU215355.1| Homo sapiens clone N-LCLB1-59 immunoglobulin
heavy chain variable region (IGHV3) gene, partial cds
TTGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGT
TTGCAGG
TGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCC
TGTGCAG
CCTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGT
CTCAGCT
ATTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATT
CCAAGAA
CACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGCCCTTTTCG
GATAGCA
GCAGCTGGTACTACTTTGACTACTGG
>gi|114386128|gb|DQ840794.1| Homo sapiens isolate D3-P-4-VH3-24
immunoglobulin heavy chain variable region mRNA, partial cds
CCCTTGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTCAAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAG
CCTCTGG
ATTCACCTTCAGTAGCTATAGCATGAACTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCATCC
ATTAGTA

GTAGTAGTAGTTACATATACTACGCAGACTCAGTGAAGGGCCGATTACCATCTCCAGAGACAACGCCAAGAA
CTCACTG
TATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGCGGGGTAGCAGCTGGTC
TTGACTA
CTGGGGCCAGGGAACCCCTGGTCACCGTCTCCTCA
>gi|15886983|emb|AJ414021.1| Homo sapiens partial mRNA for immunoglobulin
heavy chain variable region (IGHV gene), isolate CLL035
CAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGTCCTCGGTGAAGGTCTCCTGCAAGGCTT
CTGGAGG
CACCTTCAGCAGCTATGCTATCAGCTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATC
ATCCCTA
TCTTTGGTACAGCAAACCTACGCACAGAAGTTCCAGGGCAGAGTCACGATTACCGCGGACGAATCCACGAGCAC
AGCCTAC
ATGGAGCTGAGCAGCCTGAGATCTGAGGACACGGCCGTGTATTACTGTGCGAGAGTCCCCCCTCCCGTAATA
TTGTACT
AATGGTGTATGATGATGCTTTTGATATCTGGGGCCAAGGGACAATGGTCACCGTC
>gi|197115230|emb|FM206599.1| Homo sapiens partial IGHV4-34 gene for
immunoglobulin heavy chain variable region, clone 79-20, individual Blood
Donor 5
CAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGCTGTCT
ATGGTGG
GTCCTTCAGTGGTTACTACTGGAGCTGGATCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAATC
AATCATA
GTGGAAGCACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTT
CTCCCTG
AAGCTGAGCTCTGTGACCGCCGCGGACACGGCTGTGTATTACTGTGCGAGAGGTATTGTAGTAGTACCAGCTG
CTATGTC
TTATTACTACTACTACTACGGTATGGACGTCTGG
>gi|1154847|emb|Z68387.1| H.sapiens rearranged IgM immunoglobulin heavy
chain variable region 0515
TTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATGCCATGA
GCTGGGT
CCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATACTACGCA
GACTCCG
TGAAGGGCCGGTTACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAGC
CGAGGAC
ACGGCCGTATATTACTGTGCGAAAGATCACACTGCTTCTATAGCAGCAGCTGGTCCCGTGGGTGGGGTGACTT
TTGATAT
CTGGGGCCAAGGGACAATGGTCACCGTCTCTTCA
>gi|54778979|gb|AY670760.1| Homo sapiens clone CBc3bmMK-e6 immunoglobulin
mu heavy chain mRNA, partial cds
GTCAGGTGCAGCTACAGCAGTGGGGCGCAGGACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGCTGT
CTATGGT
GGGTCCTTCAGTGGTTACTACTGGAGCTGGATCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAA
TCAATCA
TAGTGGAAGCACCAACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAG
TTCTCCC
TGAAGCTGAGCTCTGTGACCGCCGCGGACACGGCTGTGTATTACTGTGCGAGAGCCTTAACCTCTCCCTAACTG
GGGGAGG
TACTACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGGGAGTGCATCCGCCCCAACCCCTTT
TCCCCCT
CGTCTCCTGTGAGAATTCCCCGTCCGATACGAGCAGCGTGGCCGTTGGCTGCCTCGCACAGGACTTCCTTCCC
GACTCCA
TCACTTTCTCCTGGAAATACAAGAACAACCTCTGACATCAGCAGCACCCGGGGCTTCCCAT

>gi|112692509|emb|AM078052.1| Homo sapiens partial IGHV3-23*01 gene for immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone AG12A61

GACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTAC
AGCCTGG
GGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAG
GCTCCAG
GGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGG
CCGGTTC
ACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCG
TATATTA
CTGTGCGAAAGCAAGTGGCTGGAATACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACC
GTCTCCT
CAGGTAAGAATGGCCACTCTAGGGCCTTTGTT

>gi|70798429|gb|DQ100921.1| Homo sapiens isolate P437H immunoglobulin heavy chain variable region (IGHV4-39) mRNA, IGHV4-39*01 allele, partial cds

GCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCACGTGTCTCTGGT
GGCTCCA
TCAGCAGTAGTAGTTACTACTGGGGCTGGATCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGAGTAT
CTATTAT
AGTGGGAGCACCTACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCCGTAGACACGTCCAAGAACCAGT
TCTCCCT
GAAGCTGAGCTCTGTGACCGCCGCAGACACGGCTGTGTATTACTGTGCGAGACATCGCCTCGGATATTGTAGT
AGTACCA

GCTGCTACTACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCA

>gi|54779836|gb|AY671223.1| Homo sapiens clone 101186+t7 immunoglobulin mu heavy chain mRNA, partial cds

GTGAGTCGGGCCCAGGACTGGTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCACGTGTCTCTGGTGGCTCCGT
CAGCAGT
GGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCAGGGAAGGGACTGGAGTGGATTGGGTATATCTATTACA
GTGGGAG
CACCAACTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCTG
AAGCTGA
GCTCTGTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGAGAGAAATCGCACCACTATCGGACTTTGACTA
CTGGGGC
CAGGGAACCCTGGTCACCGTCTCCTCAGGGAGTGCATCCGCCCCAACCCTTTTCCCCCTCGTCTCCTGTGAGA
ATTCCCC
GTCGGATACGAGCAGCGTGCCGTTGGCTGCCTCGCACAGGACTTCCTTCCCGACTCCATCACTTTCTTCTGGG
AAATACA
AAGAACACT

>gi|112691419|emb|AM077506.1| Homo sapiens partial IGHV3-23*01 gene for immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone CE09A17

GGATACGTGTGGCAGTTTCTGATCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGA
GTCTGGG
GGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATG
CCATGAG
CTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATAC
TACGCAG
ACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCT
GAGAGCC
GAGGACACGGCCGTATATTACTGTGCGAAAGTACACTACCAACAGATAAAAGAGTATTACGATTTTTGGAGTG
GTTATTA

TCCCGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGGTGAGTCCTCACAACCTCTCTCCTGCTTT
AACTCTG
AAGGGTTTTGCTGCATTTTTGGGG
>gi|112692593|emb|AM078094.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
CM03A19
GGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGA
GTCTGGG
GGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTATG
CCATGAG
CTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATAC
TACGCAG
ACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCT
GAGAGCC
GAGGACACGGCCGTATATTACTGTGCGAAGACTACGGTGACCCCTTGGTACTACGGTATGGACGTCTGGGGCC
AAGGGAC
CACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCCTTTGTT
>gi|1791104|gb|U80131.1|HSU80131 Human immunoglobulin heavy chain
variable region (V4-31) gene, partial cds
CAGGTGCAGCTGCAGGAGTCGGGCCAGGACTGGTGAAGCCTTCACAGACCCTGTCCCTCACCTGCACTGTCT
CTGGTGG
CTCCATCAGCAGTGGTGGTTACTACTGGAGCTGGATCCGCCAGCACCCAGGGAAGGGCCTGGAGTGGATTGGG
TACATCT
ATTACAGTGGGAGCACCTACTACAACCCGTCCCTCAAGAGTCGAGTTACCATATCAGTAGACACGTCTAAGAA
CCAGTTC
TCCCTGAAGCTGAGCTCTGTGACTGCCGCGGACACGGCCGTGTATTACTGTGCGAGAGGTGGGGAGTACGGTG
ACGGCTA
CTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|114386222|gb|DQ840841.1| Homo sapiens isolate D2-P-4-VH3-30
immunoglobulin heavy chain variable region mRNA, partial cds
CCCTTGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAG
CCTCTGG
ATTCACCTTCAGTAGCTATAGCATGAACTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTTTCATAC
ATTAGTA
GTAGTAGTAGTACCATATACTACGCAGACTCTGTGAAGGGCCGATTACCATCTCCAGAGACAATGCCAAGAA
CTCACTG
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GGCCCGT
CGGCTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|185615|gb|L06023.1|HUMIGHVXZ Human antiplatelet immunoglobulin heavy
chain (IGH@) variable region mRNA, partial cds
GAGTCGGGCCAGGACTGGTGAAGCCTTCGAGACCCTGTCCCTCACCTGCACTGTCTCTGGTGGCTCCATCA
GCAGTAG
TAGTTACTACTGGGGCTGGATCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGAGTATCTATTATAGT
GGGAGCA
CCTACTACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCTGAA
GCTGAGC
TCTGTGACCGCCGCGGACACGGCCGTGTATTACTGTGCGAGATCTGCTGGCCTATATAGCAGCACGTACTACT
ACTACTA
CGGTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCA
>gi|371447652|gb|JN577569.1| Homo sapiens isolate RAR0701EB
immunoglobulin G heavy chain variable region mRNA, partial cds
GAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCT
CTGGATT

CACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATT
AGTGGTA
GTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACAC
GCTGTAT
CTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATCTAGATCCAGCCCCGT
CCGGTGA
CGACGGGGACTACTGGGGCCAGGGAACGCTGGTCACCGTCTCCTCA
>gi|112692441|emb|AM078018.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
BE02A30
TGAGTGTGAATGGATAAGAGTGAGAGAAACAGTGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTT
TGCAGGT
GTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCT
GTGCAGC
CTCTGGATTACCTTTAGCAGCTATGCCATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTC
TCAGCTA
TTAGTGGTAGTGGTGGTAGCACATACTACGCAGACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTC
CAAGAAC
ACGCTGTATCTGCAAATGAACAGCCTGAGAGCCGAGGACACGGCCGTATATTACTGTGCGAAAGATCTCCATA
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TCCTCAG
GTAAGAATGGCCACTCTAGGGCCTTTGTT
>gi|4100371|gb|U97245.1|HSU97245 Homo sapiens IgM heavy chain variable
region (humha327) mRNA, partial cds
GAGGTGCAGCTGGTGGAGTCTGGGGGAGGCTTGGTAAAGCCTGGGGGGTCCCTTAGACTCTCCTGTGCAGCCT
CTGGATT
CACTTTCAGTAACGCCTGGATGAGCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTTGGCCGTATT
AAAAGCA
AAACTGATGGTGGGACAACAGACTACGCTGCACCCGTGAAAGGCAGATTCACCATCTCAAGAGATGATTCAAA
AAACACG
CTGTATCTGCAAATGAACAGCCTGAAAACCGAGGACACAGCCGTGTATTACTGTACCACAGACTATAGTGGTT
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TTGGTACTTTGACTACTGGGGCCAGGGAACCCTGGTCAACCGTCTCCTCAGGGAGTGCATCCGCCCCAACCCCTT
TTCCCCC
TCGTCTGGATCCGG
>gi|54779794|gb|AY671199.1| Homo sapiens clone 101126+t7 immunoglobulin
mu heavy chain mRNA, partial cds
GTTGAAACACCTGTGGTTCTTCCTCCTCCTGGTGGCAGCTCCCAGATGGGTCTGTCCCAGGTGCAGCTACAG
CAGTGGG
GCGCAGGACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGCTGTCTATGGTGGGTCCTTCAGTGGTTA
CTACTGG
AGCTGGATCCGCCAGCCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAATCAATCATAGTGGAAGCACCAACT
ACAACCC
GTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCTGAAGCTGAGCTCTGTG
ACGCCG
CGGACACGGCTGTGTATTACTGTGCGAGTAGGGATATAGTGGCTACGATTCTGGGCTGACTACTGGGGCCAGGG
AACCCAG
GTCACCGTCTCCTCAGGGAGTGCATCCGCCCCAACCCCTTTTCCCCCTCGTCTCCTGTGAGAATTCCCCGTGCG
ATACGAG
>gi|54780305|gb|AY671476.1| Homo sapiens clone 2d414 immunoglobulin mu
heavy chain mRNA, partial cds
GTCAGGTGCAGCTGCAGGAGTCGGGCCCAGGACTGGTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCACTGT
CTCTGGT

GGCTCCATCAGTAGTTACTACTGGAGCTGGATCCGGCAGCCCCAGGGAAGGGACTGGAGTGGATTGGGTATA
TCTATTA
CAGTGGGAGCACCAACTACAACCCCTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAG
TTCTCCC
TGAAGCTGAGCTCTGTGACCGCTGCGGACACGGCCGTGTATTACTGTGCGAGAGATTTCCCGTGGCTACGAGA
TGATGCT
TTTGATATCTGGGGCCAAGGGACAATGGTCACCGTCTCTTCAGGGAGTGCATCCGCCCCAACCCCTTTTCCCC
TCGTCTC
CTGTGAGAATTCCCCGTGG
>gi|112692922|emb|AM078258.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
AG13A49
TGGATACGTGTGGCAGTTTCTGACCAGGGTTTCTTTTTGTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGG
AGTCTGG
GGGAGGCTTGGTACAGCCTGGGGGGTCCCTGAGACTCTCCTGTGCAGCCTCTGGATTACCTTTAGCAGCTAT
GCCATGA
GCTGGGTCCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATA
CTACGCA
GACTCCGTGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCC
TGAGAGC
CGAGGACACGGCCGTATATTACTGTGCGAAAGATCCCTCTGACTACGGTGACTACTGGGTTGCGGGCGGTATG
GACGTCT
GGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCCTTTGTT

>gi|2344953|gb|U84180.1|HSU84180 Homo sapiens isolate LID IgM heavy chain
VH1 region precursor (VH1-69) gene, partial cds
ATGGACTGGACCTGGAGGTTCTCTTTGTGGTGGCAGCAGCTACAGGTAAGGGGCTTCCTAGTCCTAAGG
CTGAGGAAGGGATCCTGGTTTAGTTAAAGAGGATTTTATTACCCCTGTGTCTCTCCACAGGTGTCCAG
TCCCAGGTGCAGCTGGTGCAGTCTGGGGCTGAGGTGAAGAAGCCTGGGTCTCGGTGAAGGTCTCCTGCA
AGGCTTCTGGAGGCACCTTCAGCAGCTATGCTATCAGCTGGGTGCGACAGGCCCCCTGGACAAGGGCTTGA
GTGGATGGGAAGGATCATCCCTATCCTTGGTATAGCAAACTACGCACAGAAGTTCCAGGGCAGAGTCACG
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>gi|112692900|emb|AM078247.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
CE14A10
GTTTGCAGGTGTCCAGTGTGAGGTGCAGCTGTTGGAGTCTGGGGGAGGCTTGGTACAGCCTGGGGGGTCC
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GCCGAGGACACGGCCGTATATTACTGTGCACTACTGCAGGGCAGCAGCTGGTACGACTACTACTACTACG
GTATGGACGTCTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCCTT
TGTT

>gi|602005|emb|Z46327.1| H.sapiens immunoglobulin heavy chain VDJ region
(SEBV B53)
CTACAGCAGTGGGGCGCAGGACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCGCTGTCTATGGTGGGT
CCTTCAG
TGGTTACTACTGGAGCTGGATCCGCCAGCCCCAGGGAAGGGGCTGGAGTGGATTGGGGAAATCAATCATAGT
GGAAGCA
CCAATAACAACCCGTCCCTCAAGAGTCGAGTCACCATATCAGTAGACACGTCCAAGAACCAGTTCTCCCTGAA
GCTGAGC
TCTGTGACCGCCGCGGACACGGCTGTGTATTACTGTGCGAGAACCTACCTTATAGCAGCTCGTCCCTATCGCC
TCTATTC

CGCCAAAACTGGTTTCGACCCCTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
>gi|158714290|gb|EU099078.1| Homo sapiens isolate MC30 immunoglobulin
heavy chain variable region (IGHV) mRNA, partial cds
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AGGGGCT
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TTACTGT
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GAGCAGC
GGGCCGTGGGCTGCTCGCACAGAATTCT
>gi|112693417|emb|AM078507.1| Homo sapiens partial IGHV3-23*01 gene for
immunoglobulin heavy chain variable region, IGHV3-23*01 allele, clone
AO04A17
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GGGAGGC
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GCTGGGT
CCGCCAGGCTCCAGGGAAGGGGCTGGAGTGGGTCTCAGCTATTAGTGGTAGTGGTGGTAGCACATACTACGCA
GACTCCG
TGAAGGGCCGGTTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAACAGCCTGAGAGC
CGAGGAC
ACGGCCGTATATTACTGTGCGAAGGGCTCCAGTGGCTGGTACCGGGATTTTGGGACCTCAGGTGATACGGTA
TGGACGT
CTGGGGCCAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCCTTTGTT
>gi|106897154|gb|DQ535294.1| Homo sapiens clone HB1-57 circulating B cell
antibody heavy chain variable region mRNA, partial cds
ATGGCCCAGGTGCAGCTACAACAGTGGGGCGCAGGACTGTTGAAGCCTTCGGAGACCCTGTCCCTCACCTGCG
CTGTCTA
TGGTGGGTCTTTCAGTGGTTACTACTGGAGCTGGATCCGCCAGCCCCCAGGGAAGGGGCTGGAGTGGATTGGG
GAAATCA
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CCAGTTC
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CGGGGAG
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