

>31

QVQMKQSGAEVVRPGVSVKISCKGSGYTFTDYPMHVWKQSHAKSLEWIGFISTYYGDANYNQKFKGKATMTVDKSSNTAYMEL
ARLTSEDSAIYYCARSRYGSSYVDYWGQGTTLTVSSASGGGGSGGGSGGGGSAGEIVLTQSPVIMSASLGERVTMTCTASSS
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AAHHHHHHGAAEQKLISEEDLNGAA*

>43

QVQLKESGAELMKPGASVKISCKATGYTFTSYWIDWIKQRPBGHLEWLGEILPGSGSTKYNEKFKGKATFTADTSSNIAYMQL
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SVSYMNWYQQKPGSSPKICIIYGISNLASGVPARFSGSGSGTSYSLSLSSMEAEDAAIYYCQQWNYPLTFGAGTKLEMKRAAAA
HHHHHHGAAEQKLISEEDLNGAA*

>67

EVQLQQPGPEVVRPGVSVKISCKGSGYTFTDYAMHWVKQSHAKSLEWIGIISTYNGNTNYNQKFKGKATMTVDKSSSTAYMEL
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SVEYYGTSMLQWYQQKPGQPPLLIYAASNVESGVPARFSGSGSGTDFSLNIHPVEEDDIAMFYCQQSRKVPWTFGGGTKEI
KRAAAHHHHHHGAAEQKLISEEDLNGAA*

>79

QVQLKQSGAELVVRPGVSVKISCKGSGYTFTDYGHWVKQTHAKSLEWIGVISTYYGDSNYNQKFKGKATMTVDKSSSTAYMEL
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IDDDMNWYQEKPGEPKLLISEGNILRPGVPSRFSSSGYGTDFLFTIENMLSEDVADYYCLQSDNPLPLTFGAGTKLDLKRAAA
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>08

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SSINYMHWYQQKPGTSPKRWISDTSKLASGVPARFSGSGSGTSYSLTISSMEAEDAATYYCHQRSSYPWTFGGGTKEIKRAA
AAHHHHHHGAAEQKLISEEDLNGAA

>20

QVQLKESGPGVLVAPSQSLITCTVSGFSLTSYGVHVVWRQPPGKGLEWLGVWAGGNTNYSALMSRLSINKDNSKSQVFLKMN
SLQTDDETAMYYCARDSEAYWGQGTTLTVSAASGGGGSGGGSGGGGSAGEIVLTQSPAILASAPGEKVTMTCRASSGVSYM
WYQQKPGSSPKPWIYATSNLASGVPTRFSGSGSGTSYSLTISRMEAEDAATYYCHQRSSYPWTFGGGTKELEKRAAAHHHHH
HGAAEQKLISEEDLNGAA*

>32

QVQLKQSGAELMKPGASVKISCTAAGYTFNNYIEWVKQRPBGHLEWIGEILPGSGSTNYNEKFKVKATFTVDTSSNTAYMQL
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>44

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HHHHGAAEQKLISEEDLNGAA*

>81

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HHHHGAAEQKLISEEDLNGAA*

>10

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AAAAHHHHHHGAAEQKLISEEDLNGAA*

>22

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>46

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SLLHNGHTYLYWFLQRPQSPQLLIYRMSNLASGVPDRFSGSGSGTAFTLRISRVEAEDVGVIYCAQNLPLPWTFGGGTKLE
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>70

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HHHHGAAEQKLISEEDLNGAA*

>82

QVQLQQSGPELVKPGASVKISCKGSGYTFTDYAMHWVKQTHAKSLEWIGVISTYYGDANYDQKFKDKATMTVDKSSSTAYMEL
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LVHSNGNTYLHWYLQKSGQSPKLLIYKVSNRFSQVDPDRFSGSGSGTDFTLKISRVEAEDLGVYFCSQSTHVPWTFGGGKTLEIKRAAAHHHHHHHGAAEQKLISEEDLNGAA*

>94

DVQLQESGGGLVQPGGSLKLSCAASGFDFSRYWMSWVRQAPGKGLEWIGEINPDSSTINYTPSLKDKFIIISRDNAKNTLYLQMSKVRSEDTALYYCARRGTVVVPAMDYWGQGTSVTVSAASGGGSGGGGSGGGGSAGDIVMTQAAPSPVPTGESVSI SCRSE SLLHSNGNTYLYWFLQRPGQSPHLLIYRMSNLAGVDPDRFSGSGSGTAFTLRISRVEAEDVGVIYCMQHLEYPLTFGAGTKLV LKRAAAHHHHHHHGAAEQKLISEEDLNGAA*

>76

MITPSFGAFFLEIFNVKYLPTAAAGLLLLAAHPAMAEVQLQESGPGLVAPSQSLSITCTVSGFSLTSYGVHWVRQPPGKGLE WLGIWAGGSTNYSALMSRLSISKDNSKSQVFLKMYSLQTDDTAMYYCARFGYPFDYWGQGTTLTVFSASGGGSGGGGSGG GSGAGDIQMTQSPASLSASVGETVTITCRASGNIHNYLAWYQQKQKSPQLLVYNAKTLADGVPSRFSGSGSGTQYSLKINSL QPEDFGTYQCQHFWITPPTFGGGTKLELKRAAAHHHHHHHGAAEQKLISEEDLNGAA

>05

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>17

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>29

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>53

EVQLEESGPGLVAPSQSLSITCTVSGFSLTSYGVHWVRQPPGKGLEWLGVWAGGGTNYNSALMSRLSISKDNSKSQVFLNMN GLQTDDTAMYYCARDSEAYWGQALVTVFSASGGGSGGGGSGGGGSAGENVLTQSPAIMASAPGEKVTMTCSASSSVSYMH WYQQKSGTSPKRWIYDTSKMASGVPARFSGSGSGTSYSLTISSEVAEDAATYYCQQWSSNPPTFGAGTKLDLKRAAAHHHHH HGAAEQKLISEEDLNGAA*

>65

QMQLKESGPGLVKPSQSLSLTCTVTGHTITSYAWNWIQFPGNKLEWMGYISYSGSTTYNPSLKSRI SITRDTSKNQFFMQ LKSVTTEDTAKYYCADGYVMDHWGQGTSVTVSAASGGGSGGGGSGGGGSAGQIVLTQSPAIMASAPGEKVTITCSASSSVS YMHWFQQKPGTSPKLWIYSTSNLAGVPARFSGSGSGTSYSLTISSEVAEDAATYYCHQRSSYPWTFGGGTKLDIKRAAAHH HHHHGAAEQKLISEEDLNGAA*

>77

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>11

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>23

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>35

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>47

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>59

EVQLEESGGGLVQPGGSLKLSCAASGFTFSSYGMWVRQTPDKRLELVATINSNGGSTYYPASVKGRFTISRDNARNNTLYLQM SSLKSEDTAMYYCAREGKAWLAYWGQGTTLTVTFASGGGSGGGGSGGGGSAGENVLTQSPTTMAASPEKITITCSASSSI SYMHWYQQKPGTSPKRWIYDTSNLAGVPSRFSGSGSGTFYSLTISSEVAEDAADYYCHQWSSYPWTFGGGTKLAIKRAAAH HHHHHHGAAEQKLISEEDLNGAA*

>71

EEKLEESGAELVRPGVSVKISCKGSGYTFTDYGIHWVKQTHAKSLEWIGVISTYYGDANYDQKFKGKATMTVDKSSSTAYMEL
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AAHHHHHHGAAEQKLISEEDLNGAA*

>95

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NIYTYLAWYQQKQKSPQLLVYNAKTLAEGVPLRFSGSGSDTQFSLKINSLQPEDFGSYQCQHHYATPPTFGGGTQLEIKRAA
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>12

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HHHHHGAEEQKLISEEDLNGAA*

>24

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>56

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>68

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HGAEEQKLISEEDLNGAA*

>80

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>09

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HGAEEQKLISEEDLNGAA*

>21

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>33

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>45

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>57

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>69

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HHHHHGAEEQKLISEEDLNGAA*

>26

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>38
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>50
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>62
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>74
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>03
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>15
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SFDVAWYQQKPGQSPKLLIYYASNRYTGVPDRFTGSGYGTDFTFITSTVQAEDLAVYFCQQDYTSPLTFGAGTKLELKRAAAA
HHHHHGAAEQKLISEEDLNGAA*
>27
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RAAAHHHHHHHGAAEQKLISEEDLNGAA*
>39
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STDIDDDMNWYQQKPGEPKLLISEGNTLRPGVPSRFSSSGYGTDFVFTIENMLSEDVADYYCLQSDNLPPLTFGGGTKELEKR
AAAAHHHHHHHGAAEQKLISEEDLNGAA*
>36
EVQLELTGGDLVKPGGSLKLSCAASGFDFFSYDMSWVRQTPEKRLEWVAFISTTGGNIFYSETVKGRFTISRDNAKITLYLQM
SSLKSEDTAMYYCARQRYVDGYRGHAMDYWGQGTSVTVSAASGGGGSGGGGSGGGGSAGDIVMTQSQKFMSTSVGDRVSVTC
KASQNVGTNVVWYQLKPGQSPNTLIYSASYRYTGVPDRFTGSGSGTDFTLTISNVQSEDLADYFCQQHYSTPWTFGGGTKLAL
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>48
EVKLVESGGGLVQPGGSLKLSCAASGFTFSGYTMSWVRQTPERRLEWVATISNGGSYTYYPDSVKGRFTISRDNAKNNLYLQM
SSLRSEDTALYYCARHDPYNYDAVDYWGQGTSVTVSSASGGGGSGGGGSGGGGSAGEIVLTQSPVIMSASPGEKVTMTCSANS
SISYMHWYQQKPGTSPKRWIYDTSKLGASVGPARGSGSGSGTSYSLTISSMEAEADAATYYCQQYSGYPLTFGAGTRLEIKRAAA
AHHHHHHHGAAEQKLISEEDLNGAA*
>60
QVQLQQPGAELVRPGVSVKISCKGSGYTFDTYAMHWVKQSHAKSLEWIGIISTFNANTNYDQKFKGKATLTVDKSSSTAYMEL
ARLTSEDSAVYYCTRQLRLAMDYWGQGTSVTVSAASGGGGSGGGGSGGGGSAGDVMTQTPLTLSTIGQPASISCKSSQSL
LDSGDKTYLNLWLLQRPQYPKRLIYLVSKLDGVPDRFTGSGSGTDFTLKISRVEAEDLVGYICWQGTHFPRTFGGGTKELEIK
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>72
DVMLVESGGGLVQPGGSLKLSCAASGFTFSSYAMS WVRQTPPEKRLEWVASISSGGTTYYPDSVKGRFTISRDNARNILYLQMS
SLRSEDTAMYYCARGGRYYGSSDDMDYWGQGTSVTVSAASGGGGSGGGGSGGGGSAGDIVMTQAAFSNPVTLTGTSASISCRSS
KNLLHSNGITYLYWYLQRPQGSPQLLIYRVSNLASGVPPNRFSGSESGTDFTLRISRVEAEDLVGYIYCAQLLELPYTFGGGTKL
EIKRAAAHHHHHHHGAAEQKLISEEDLNGAA*
>84
QVQLQQSGPGLVKPSQSLSLTCSVTGFSITSGYYWTWIRQFPNGKLEWMGYISYDGSNNYNPSLKNRISITRDTSKNQFFLKL
NSVTTEDTATYYCANNYGNHYAMEFWGQGTSVTVSSASGGGGSGGGGSGGGGSAGDIVLTQSPASLAVSLGQRATISCEASQ
SVDYDGSYMIWYQQKPGQPPLLIYAASNLESIPARFSGSGSGTDFTLNIHPVEEEDAATYYCQQSIEDPPTFGGGTKLAI
KRAAAHHHHHHHGAAEQKLISEEDLNGAA*
>96

QVQLLETGGGLVKPGGSLKLSCAASGFTFSDYYMYWVRQTPEKRLEWVATISDGGSYTYYPDSVKGRFTISRDNAKNNLYLQM
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SVSNDAWAYQQKAGQSPKMLIYYASNRYTGVDPDRFTGSGYGTDFTTISTVQAEDLAVYFCQQDYRTPLTFGAGTKLELKRAA
AAHHHHHHGAAEQKLISEEDLNAA*

>06

EVKLLSESGPGLVAPSQSL SITCTVSGFSLTG YGVNWIRQSPGKGLEWLGM IWGDGGTDYNSGLKSRLSISKDNSKSQVFLKMN
SLQTDDETAMYYCARERGDY YGSSYVDYWGGTTLTVSAASGGGGSGGGSGGGGSAGQIVLTQSPAFMSASLGEEITLTCSAS
SSVVMHWYQQKSGTSPKLLIYSTSNLASGVPSRFSGSGSGTFTYSLTIS SVEAEDAADYYCHQWSSYPLTFGAGTKLELKRAA
AAHHHHHHGAAEQKLISEEDLNAA*

>18

QVQLQQSGAELMKPGASVKISCKASGYRFS SYWIEWVKQRP GHGLEWIGEILPGSGSTNYNEKFEGKATLTVDKSSSTAYMEL
SSLTSEDSAVYYCARSGY GSSYVDYWGGTTLTVSSASGGGGSGGGSGGGGSAGDIVMTQSQKFMSTSVGDRVSVTCKASQN
VGTNVAWYQQKPGQSPKALIYSASYRYS GVPDRFTGSGSGTDFTLTISNVQSEDLAEYFCQQYNSYPLTFYAGTKLELKRAAA
AHHHHHHGAAEQKLISEEDLNAA*

>30

EVMLVESGGDLVKPGGSLKLSCAASGFTFSRYAMSWVRQTPDKRLEWVATISSGGGYTYYLDSVEGRFTISRDNAKNTLYLQM
SSLKSEDTAMYYCARQEG LGRAMDYWGQTSVTVF AASGGGGSGGGSGGGGSAGEIVLTQSPA IMSASPGEKVTMTCSASS
VSYMHWYQQKSGTSPKRWIYDTSKMTSGVPARFSGSGSGTSYSLTISRME AEDAATYYCQQR SFYPRTFGGGT KLEIKRAAAA
HHHHHHGAAEQKLISEEDLNAA*

>42

QVQLQQSGAELVKPGASVKLSCKASGYTFTNYYMYWVKRPGQGLEWIGEINPTIGGTFNEKFMSKAILTVDKSSSTAYMQL
SSLTSEDSAVYYCTISPYGNYVFDYWGGTTLTVFAASGGGGSGGGSGGGGSAGENVLTQSPA IMSASLGERVTMTCSASS
VSYMHWYQQKPGTSPKRWIYDTSKLASGVPARFSGSGSGTSYSLTIS SGAEDAADYYCHQWSSYPCTFGAGTKLAIKRAAAA
HHHHHHGAAEQKLISEEDLNAA*

>54

QVQLQQSGPELVKPGASVKMSCKASGYTLSSYVMYWVKQKPGQGLELIGYINLYNDGTYNEKFKGKATLTS DKSSSTAYMEL
SSLTSEDSAVYYCARWGSYYGN YFDYWGGTTLTVSSASGGGGSGGGSGGGGSAGDIVMTQSQKFMSTSVGDRVSVTCKASQ
HVGTVNAWYQQKPGQSPKALIYSASYRYS GVPDRFTGSGSGTDFTLTISNVQSEDLAEYFCQQYNIYPLTFGGGT KLAIKRAA
AAHHHHHHGAAEQKLISEEDLNAA*

>78

EVQLLETGGGLVKPGGSLKLSCAASGFTFSSYAMSWVRQSPEKRLEWVAEISSGGSYTYYPDSVKGRFTISRDNAKNTLYLQM
SSLKSEDTAMYYCARHGGNYAMDYWGQTSVTVF AASGGGGSGGGSGGGGSAGDIVLTQSPASLAVSLGQRATISCKASQSV
DYDGDSYMNWYRQKPGQPPKLLIYAASNLESGIPARFSGSGSGTDFTLNIHPVEEEDAATYYCQQS NEDPWTFGGGT KLEIKR
AAAAHHHHHHGAAEQKLISEEDLNAA*

>07

EVKLVESGGGLVKPGGSLKLSCAASGFD FSSYDMSWVRQTPEKRLEWVAFISTGGGNTFY PDTVKGRFTISRDNAKITLYLQM
SSLKSEDTAMYYCARQRYVDGYRGHAMDYLGQTSVTVF SASGGGGSGGGSGGGGSAGDIVMTQSPASLAVSLGQRATIS C
KASQSVDYDGSYMNWYQQKPGQPPKLLI FAASNLESGIPARFSGSGSGTDFTLNIHPVEEEDAATYYCQQS NEYPYTFGGGT
RLDIKRAAAAHHHHHGAAEQKLISEEDLNAA*

>19

EVQLLETGGGLVKPGGSLKLSCAASGFTFSDYYMYWVRQTPEKRLEWVATISDGGYTYYPDSVKGRFTISRDNAKNNLYLQM
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TNVAWYQQKPGQSPQALIYSASYRYS GVPDRFTGSGSGTDFTLTISNVQSEDLAEYFCQQYNSYPLATFGAGTKLELKRAAAA
HHHHHHGAAEQKLISEEDLNAA*

>51

QVQLQQPGAELVRSGASVKLSCTASGFNIKDYMHVWKQRPEQGLEWIGWIDPENGDT EYAPKFQ GKATMTADTSSNTAYLQL
SSLTSEDTAVYYCNYYGSSYAMDYWGQTSVTVF AASGGGGSGGGSGGGGSAGEIVLTQSPA IMSASPGEKVTISCSASSSV
SYMWWYQQKPGSSPKWIYSTSYLASGVPARFSGSGSGTSYSLTIS SMEAEDAATYYCQQYHSYPTFGGGT KLEIKRAAAHH
HHHHGAAEQKLISEEDLNAA*

>63

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SRLTSEDSAVYFCTRG RYYGMDYWGGTSTVTVSSASGGGGSGGGSGGGGSAGETTVTQSPASLSVATGEKVTIRCITNTEID
DDMNWYQQKPGEPKLLISEGNI LRPGVPSRFSSSGYGTDFVFTIENMLSE DVADYYCLQSDNLPWTFGGGT KLEIKRAAAH
HHHHGAAEQKLISEEDLNAA*

>75

QVQLQQPGPEVVRPGVSVKISCKGSGYRFTDYAMHWVRQSHAKSLEWIGFISTYYGDGTYNQKFKGKATMTVDKSSSTAYMEL
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VSSI FLHWYQQKSGASQPLIHRTSNLASGVPPRFSGSGSGTSYSLTIS SVEAEDDATYYCQQWSGYPYTFGGGT KLELKRAA
AAHHHHHHGAAEQKLISEEDLNAA*

>04

DVQLVESGGGLVKPGGSLKLSCAASGFTFSSYYMSWVRQTPEKRLELVAAINSNGGSTYYADTVKGRFTIYRDN AKNTLYLQM
NSLKSEDTAMYYCASLLLRDNYFDYWGGTTLTVSSASGGGGSGGGSGGGGSAGEIQMTQT TSSLSASLGKVTISCKPGIP
SRFSGSGSGRDISFSISNLAPEDIATYYCLQYDNLHTFGGGT KLEIKRAAAHHHHHHGAAEQKLISEEDLNAA*

>16

QVQLKQSGAEVVRPGVSVKISCKGSGYTFDYPMHVWKQSHAKSLEWIGFISTYYGDTNYNQKFKGKATMTVDKSSSTAYMEL
VRLTSEDSAIYYCARSGY GSSYVDYWGGTTLTVSAASGGGGSGGGSGGGGSAGETTVTQSPASLSVATGEKVTIRCITSTD
IDDDMNWYQQKPGEPKLLISEGNTLRPGVPSRFSSSGYGTDFVFSIENTLSE DVADYYCLQSDNMPLTFGAGTKLELKRAAA
AHHHHHHGAAEQKLISEEDLNAA*

>40

EVKLMESGGGLVQPGGSRKLSCAASGFTFSSFGMHVVRQAPDKGLEWVAYISSGSSIIYYADTVKGRFTISRDNPKNTLFLQM
TSLRSEDAMYYCARGNYFYDWGQGTTLTVSAASGGGSGGGGSGGGGSAGEILLTQSPALMASPGEKVTMTCSASSSVTY
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HHHGAAEQKLISEEDLNAA*

>52

EVKLLESGPGLVKPSQSLSLTCTVTGYSITSDYAWNWIROFPGNKLEWMGYINYSGGTSYNPSLKSRISITRDTSKNQFFLQL
NSVTIEDTATYYCAISGGNYVLYWYFHVWGAGTTVTVFAASGGGSGGGGSGGGGSAGDIVLTQSQKFMSTSVGDRVTVTCKA
SQNVGTNVAWYQQKPGQSPKALIYSASYQNNGVPDRFTGSKSGTDFTLISNVQSEDLAEYFCQQYHSYPYTFGGGTMLEIKR
AAAAHHHHHHHGAAEQKLISEEDLNAA*

>64

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>01

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AAAAHHHHHHHGAAEQKLISEEDLNAA*

>13

DVQLQESGPGLVAPSQSL SITCTVSGFSLTDYGVNWVRQSPGRGLEWLGMWGDGTTDYN SALKSRLSISKDNSKSQFLKMN
SLQTDDETARYYCAKTGRENYALDYWGQGTSTVTVFAASGGGSGGGGSGGGGSAGETTVTQSPASLSVATGEKVTIRCITSTDI
DDDMNWYQQKPGEPKLLISEGNTLRPGVPSRFSSSGYGTDFIFTIENTLSEDVADFYCLQSDNVP LTFGGGTKLELKRAAAA
HHHHHGAAEQKLISEEDLNAA*

>25

EVKLDES GGGLVKLGSSKLSCAASGFTFSSYYMSWVRQTPEKRLELVAAINSNGGSTYYPDTV KGRFTISRDNKNTLYLQM
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SYMYYWYQQKPRSSPKWIYLTSLNLASGVPARFSGSGSGTSYSLTISSMEADAATYYCQQWSRNPLTFGAGTKLELKRAAAH
HHHHHGAAEQKLISEEDLNAA*

>37

EVKLVESGGGLVQPGGSRKLSCAASGFTFSSSGLHWVRQAPEKGLEWVAYISGGSNTIYYADTLKGRFTISRDNPKNTLFLQM
TSLRSEDAMYYCARKGLRLRDYAVDYWGQGTSTVTVSAASGGGSGGGGSGGGGSAGETTVTQSPSSMYASLGERVTITCKAS
QDIKTYLTWYQQKPKWSPKTLIYSATNLADGVPSRFSGSGSGQDYSLTISSLESDDTATYYCLQHVESPWTFGGGT KLEIKRA
AAAHHHHHHGAAEQKLISEEDLNAA*

>49

EVQLQESGPGLVKPSQSLSLTCTVTGYSITSDLAWNWIROFPGNKLEWMGYITYSGSTNYNPSLKSRMSLIRDTSKNQFFLQL
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QSLVHSNGNTYLHWY LQKPGQSPKLLIYKVS NRFSGV PDRFSGSGSGTDFTLKISRVEAEDLG VYFCSQSTHVPLTFGAGTKL
ELKRAAAHHHHHHHGAAEQKLISEEDLNAA*

>61

QVQLKESGAELMKPGASVKISCKATGYTFSSYIEWVWKQRPBGHLEWIGEILPGSGNTNYTEKFKGKATFTADSSSNTVYMQL
SSLTSEDSAVYYCARTARASYAMDYWGQGTSTVTVSSASGGGSGGGGSGGGGSAGETTVTQSPASLSVATGEKVTIRCITSTD
VDDMSWYQQKPGEPKFLISEGNTLRPGVPSRFSSSGYGTDFVFTIENTLSEDVADYYCLQSDNMPYTFGGGT KLAIKRAA
AHHHHHGAAEQKLISEEDLNAA*

>73

QVQLKQSGPGLVKPSQSLSLTCTVTGYSISSDYAWNWIROFPGNKLEWMGYIAYS DTTYNPSLKSRISITRDTSKNQFFLQL
NSVTTEDTATYYCARFPLTSYVYYTMDYWGQGSSTVTVSSASGGGSGGGGSGGGGSAGETTVTQSPASLSMAIGEKVTIRCI
TSTDIDDDMNWYQQKPGEPKLLISEGNTLRPGVPSRFSSSGYGTDFVFTIENTLSEDVADYYCLQSDNLPYTFGGGT KLELK
RAAAHHHHHHHGAAEQKLISEEDLNAA*

>02

QVQLKESGPGLVAPSQSL SITCTVSGFSLTG YGVNWVRQPPGKGLEWLGMWGDGSTDYN SALKSRLSISKDNSKSQVFLKMN
SLQTDDETARYYCATSGYSYAMDYWGQGTSTVTVFSASGGGSGGGGSGGGGSAGDIQMTQSPSSMSASLGDRITITCQATQDIV
KNLNWYQQKPGKPPSFLIYYATELAEGVPSRFSGSGSGSDYSLTISNLESEDFADYYCLQFYDFPYTFGGGT KLELKRAAAH
HHHHHGAAEQKLISEEDLNAA*

>14

FGAFFLEIFNVKYL LPTAAAGLLLLAAQPAMAEVKLEESGGGLVQPGGSLKLSCATSGFTFSDYYMYWVRQTPEKRLEWVAYI
SSADNTYYPDSVKGRFTISRDNARNILYLQMSSLRSEDAMYYCVRGYDYFDYWGQGTTLTVSSASGGGSGGGGSGGGGSAG
DIQMTQSPSSLSASLGERVSLTCRASQEISGYLSWLQQKPDGTIKRLIYAASTLD SGVPKRFRSGSRSGSDYSLTISSLESEDF
ADYYCIQYASYPLTFGAGTKLELKRAAAHHHHHHHGAAEQKLISEEDLNAA*

>85

EVQMKQSGPGLVAPSQSL SITCTVSGFSLSR YTVHWVRQPPGKGLEWLGMWGGGSTDYN SALKSRLTISKDNSKSQVFLKMN
SLQTDDETARYYCARRGNW HFDVWGAGTTVTVSAASGGGSGGGGSGGGGSAGDIVLTQSPASLAVSLGQRATISCRASEVD
NYGISFMNWYQQKPGQPPKLLIYAASNQGS GVPARFSGSGSGTDFSLTIDPVEADDAATYYCQQNNEDPYTFGGGT KLEIKRA
AAAHHHHHHGAAEQKLISEEDLNAA*

>86

EVKLMESGGGLVKPGGSLKLSCAASGFTFSSYAMSWVRQTPEKRLEWVASISSGGSTYYPDSVKGRFTISRDNARNILYLQMS
SLRSEDAMYYCARGDYGGYAMDYWGQGTSTVTVSAASGGGGSGGGGSGGGGSAGENVLTQSPAIMSASPGKVTMTCSATSSV
SYMHWQQTSSSTSPKLWIYDTSKLTSGVPGRFSGSGSGNSYSLTISSMEAEDVATYYCFQSGSGYPLTFGTGTKLELKRAAAAH
HHHHHGAAEQKLISEEDLNGAA*

>87

EVQLQQSGAELAKPGASVKMSCKASGYTFTTYWMHWLQKRPQGQLEWIGYINPSTGYTEYNQNFKDkatLTADKSSSTAYMQL
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VTYMYWYQQKPRSSPKWIYLTSLNLASGVPVRFSGSGSGTSYSLTISRMEAEDAATYYCQQWSSYTWTFGGGTKLAIKRAAAA
HHHHHGAAEQKLISEEDLNGAA

>88

DVQLVESGGGLVQPGGSRKLSAASGFTFSSFGMHVWRQAPEKGLEWVAYISSGSSTIYYADTVKGRFTISRDNPKNTLFLQM
TSLRSEDAMYYCARRGFYHGSYYAMDYWGQGTSTVTVSSASGGGGSGGGGSGGGGSAGEIVLTQSPAIMSASPGKVTMT
CSASSSVSYMQWYQQKSGTSPKRWIYDTSKLASGVPARFSGSGSGTSYSLTISSMEAEDAATYYCQQWSSNPPTFGAGTKLEL
KRAAAHHHHHGAAEQKLISEEDLNGAA*

>89

QIQLVQSGAELVRPGVSVKISCKGSGYTFTDYGVHWIKQTHAQSLWIGVISTYYGDANYNQKFRGKATLTVDKSSSTAYIYL
ARLTSEDSAIYYCARSRYGSNYVDHWGQGTTLTVSAASGGGGSGGGGSGGGGSAGENVLTQSPAITAASLGQKVTLTCSASS
VSYMHWFQQKSGTSPKRWIYDTSKLASGVPGRFSGSGSGTSYSLTIGTLEAEDVATYYCQQGSSLPYTFGGGTKLELKRAAAA
HHHHHGAAEQKLISEEDLNGAA*

>91

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SKSLLHSHGITYLYWYLQKPGQSPQLLIYQMSNLASGVPDRFSSSGSGTDFTLRISRVEAEDVGVYYCAQNLELPYTFGGGK
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>92

EVQLVESGGGLVQPGGSLKLSCAASGFTFSTYGMSWVRQTPDKRLELVATINSNGGSTYYPDSMKGRFTMSRDNKNTLYLQM
SSLKSEDTAMYYCAESSYSWFAYWGQGTTLTVTVFSASGGGGSGGGGSGGGGSAGDVVMTQTPKFLVVSAGDRVTITCKASQSV
NNDVAWYQQKPGQSPKLLIYYASTRYSGVPDRFTGSGYGTDFTFITSTVQAEDLAVYFCQQDYSSPYTFGGGKLEIKRAAAA
HHHHHGAAEQKLISEEDLNGAA*

>93

DVQLQESGPGVLVAPSQSLITCTVSGFSLTSYGVHWVRQPPGKGLEWLGVWAGGSTNYNSALMSRLSIIRDISKSQVFLKMN
SLQTDSTSMYYCARDDEAYWGQGTTLTVTVSAASGGGGSGGGGSGGGGSAGDIQMTQAAFSNPVTLGTSASISCRSSKSLHNS
GITYLYWYLQRPQGSPQILIRMSNLASGVPDRFSGSGSGTAFTLRISRVEAEDVGVYFCMQHLENPYTFGGGKLEIKRAAAA
AHHHHHGAAEQKLISEEDLNGAA*

Samples type	Final library
Number of positive clones	96
Number of non-coding clones	8
Number of exploitable sequences	88
Number of different sequences	88
Number of identical sequences	0
Number of different CDR3 clones	76 VH – 77 VK
Final result	85% CDR3 diversity; 100% Total Diversity