

SEQ ID NO:31

DIQMTQSPSSLSASLGDKVTITCKASQDINKYIDWYQHKPGKGPRLLIHYTSTLQPGIPS
RFSGSGSGRDYSFSISNLEPEDIATYYCVQYDDLWTFGGGTKLEIK

SEQ ID NO:1 LCDR1: ASQDINKYID

5 SEQ ID NO:2 LCDR2: YTSTLQP

SEQ ID NO:3 LCDR3: VQYDDLWT

1A5 HC

SEQ ID NO:32

10 QVQLKQSGPSLVQPSQSL SITCTVSGFSLTSYGVHWVRQSPGKGLEWLGVVIWRGGSTD
YNAAFMSRLSITKDNSKSQVFFKMNSLQADDTAIYYCANHRDWGQGT LVTVSA

SEQ ID NO:4 HCDR1: SYGVH

SEQ ID NO:5 HCDR2: VIWRGGSTDYNAAFMS

SEQ ID NO:6 HCDR3: HRD

15

3G12 LC

SEQ ID NO:33

DIQMTQSPSSLSASLGKVTITCKASQDINKYIDWYQHKPGKSPRLLIHYASTLQPGIPS
RFSGSGSGRDYSFSISNLEPEDIATYYCLQYDDLWTFGGGTKLEIK

20 SEQ ID NO:7 LCDR1: ASQDINKYID

SEQ ID NO:8 LCDR2: YASTLQP

SEQ ID NO:9 LCDR3: LQYDDLWT

3G12 HC

25 SEQ ID NO:34

QVQLKQSGPSLLQPSQSL SITCTVSGFSLTSYGIHWVRQSPGKGLEWLGVVIWRGGITDY
NAPFMSRLNITKDNSKNQVFFKMNSLQVDDTAIYYCANHRDWGQGT LVTVSA

SEQ ID NO:10 HCDR1: SYGIH

SEQ ID NO:11 HCDR2: VIWRGGITDYNAPFMS

30 SEQ ID NO:12 HCDR3: HRD

1B5 LC

SEQ ID NO:35

35 DIVLTQSPASLVVSLGQRATISCRASESVDNYGISFMNWFQKPGQPPKLLIYTTSNQGS
GVRARLSGSGCGTDFSLNIHPMEEDDSAMYFCQQSKEVPYTFFGGGTKLEIK

(SEQ ID NO:45, light chain nucleotide sequence)

DIQMTQSPSSLSASVGDRVTITCQASQDINKYIDWYQHKPGKAPKLLIHYASTLQP
GVPSRFSGSGSGRDYTFITSSSLQPEDIATYYCLQYDDLWTFGQGTKVEIK

5 (SEQ ID NO:46, light chain nucleotide sequence)

GACATCCAGATGACCCAGAGCCCCAGCAGCCTGAGCGCCAGCGTGGGCGACA
GAGTGACCATCACCTGCCAGGCCAGCCAGGACATCAACAAGTACATCGACTGGTA
CCAGCACAAGCCCGGCAAGGCCCCCAAGCTGCTGATCCACTACGCCAGCACCTGC
AGCCCGGCGTGCCCAGCAGATTCAGCGGCAGCGGCAGCGGCAGAGACTACACCTT
10 CACCATCAGCAGCCTGCAGCCCGAGGACATCGCCACCTACTACTGCCTGCAGTACG
ACGACCTGTGGACCTTCGGCCAGGGCACCAAGGTGGAGATCAAG

32-HC(SEQ ID NO:47, heavy chain nucleotide sequence)

QVQLQESGPGLVKPSQTLSTCTVSGFSISSYGIHWIRQSPGKGLEWIGVIWRGGI
15 TDYNAPFMSSRVTISKDNSKNQVSFKLSSVTAADTAVYYCANHRDWGQGTTLVTVSS

(SEQ ID NO:48, heavy chain nucleotide sequence)

CAGGTGCAGCTGCAGGAAAGCGGCCCGGGCCTGGTGAAACCGAGCCAGACCC
TGAGCCTGACCTGCACCGTGAGCGGCTTTAGCATTAGCAGCTATGGCATTCAATTGG
ATTCGCCAGAGCCCGGGCAAAGGCCTGGAATGGATTGGCGTGATTTGGCGCGGCG
20 GCATTACCGATTATAACGCGCCGTTTATGAGCCGCGTGACCATTAGCAAAGATAAC
AGCAAAAACCGAGGTGAGCTTTAACTGAGCAGCGTGACCGCGGCGGATAACCGCGG
TGTATTATTGCGCGAACCATCGCGATTGGGGCCAGGGCACCTGGTGACCGTGAGC
AGC

25 **77-HC**

(SEQ ID NO:49, heavy chain nucleotide sequence)

QVQLQESGPGLVKPSQTLSTCTVSGFSISSYGVHWIRQSPGKGLEWIGVIWRGGS
TDYNAAFMSSRVTISKDNSKNQVSFKLSSVTAADTAVYYCANHRDWGQGTTLVTVSS

(SEQ ID NO:50, heavy chain nucleotide sequence)

30 CAGGTGCAGCTGCAGGAAAGCGGCCCGGGCCTGGTGAAACCGAGCCAGACCC
TGAGCCTGACCTGCACCGTGAGCGGCTTTAGCATTAGCAGCTATGGCGTGCAATTGG
ATTCGCCAGAGCCCGGGCAAAGGCCTGGAATGGATTGGCGTGATTTGGCGCGGCG
GCAGCACCGATTATAACGCGGCGTTTATGAGCCGCGTGACCATTAGCAAAGATAAC
AGCAAAAACCGAGGTGAGCTTTAACTGAGCAGCGTGACCGCGGCGGATAACCGCGG

35