```
-139       -130       -120       -110       -100       -90        -80        -70        -60
ATGGGATGGAGCTGTATCATCCTCTTCTTGGTAGCAACAGCTACAGGTAAGGGGTTAACAGTAGCAGGCTTGAGGTCTGG
 M  G  W  S  C  I  I  L  F  L  V  A  T  A  T
Signal peptide exon 1                                   Intron

           -50        -40        -30        -20        -10        1          11         21
ACATATATATGGGTGACAATGACATCCACTTTGCCTTTCTCTCCACAGGCGTGCACTCCGAAGTGCAGCTGGTGGAGTCT
                                                        G  V  H  S  E  V  Q  L  V  E  S
Intron                                                  Signal peptide exon 2  VH

           31         41         51         61         71         81         91         101
GGCGGAGGCTTAGTACGGCCTGGAGGGTCCCTGAAACTCTCCTGTACAGCCTCCGGATTCACTTTCAGTGACTTTGACAT
 G  G  G  L  V  R  P  G  G  S  L  K  L  S  C  T  A  S  G  F  T  F  S  D  F  D  M
       *                                                CDR1H
VH

           111        121        131        141        151        161        171        181
GGCCTGGGTCCGCCAGGCTCCAACGAGGGGTCTGGAGTGGGTCGCTTCCATTAGTTCTGGTCCTGCTAACACTCACTATC
 A  W  V  R  Q  A  P  T  R  G  L  E  W  V  A  S  I  S  S  G  P  A  N  T  H  Y
CDR1H                                                   CDR2H
VH

           191        201        211        221        231        241        251        261
GAGGCTCCGTGAGGGGCCGATTCACTGGCTCCAGGAATGATGCAAAAAGCACCCTATACCTCCAAATGGACAGTCTGAGG
R  G  S  V  R  G  R  F  T  G  S  R  N  D  A  K  S  T  L  Y  L  Q  M  D  S  L  R

VH

           271        281        291        301        311        321        331        341
TCTGAGGACACGGCCACTTATTACTGTGCAAGACCGTTTGGTTCGGGATACTACTTTGATTACTGGGGCCAAGGAGTCGT
 S  E  D  T  A  T  Y  Y  C  A  R  P  F  G  S  G  Y  Y  F  D  Y  W  G  Q  G  V  V
                                   CDR3H
VH

           351        361        371        381        391        401        411        421
GGTCACAGTCTCCTCAGGTGGAGGCGGTTCAGGCGGAGGTGGCTCTGGCGGTGGCGGATCGGACACTGTGCTGACCCAGT
 V  T  V  S  S  G  G  G  G  S  G  G  G  G  S  G  G  G  G  S  D  T  V  L  T  Q
                   Linker
VH                                                      VL

           431        441        451        461        471        481        491        501
CTCCTGCTTTGGCTGTGTCTCTGGGGCAGAGGGTCACCATCTCCTGTAAGGCCAGTGAAAGTGTCAGTTCATCTACCTCT
S  P  A  L  A  V  S  L  G  Q  R  V  T  I  S  C  K  A  S  E  S  V  S  S  S  T  S
                                                CDR1L
VH

           511        521        531        541        551        561        571        581
AATTATATGCACTGGTACCAACAGAAACCAGGACAACGACCCAAACTCCTCATTTATCTTGCATCCAACCTAGAATCTGG
 N  Y  M  H  W  Y  Q  Q  K  P  G  Q  R  P  K  L  L  I  Y  L  A  S  N  L  E  S  G
CDR1L                                                   CDR2L
VH

           591        601        611        621        631        641        651        661
AGTCCCTGCCAGGTTCAGTGGCAGTGGGTCTGGGACAGACTTCATCCTCAACATTGATCCTGTGGAGGCTGATGATGTTG
 V  P  A  R  F  S  G  S  G  S  G  T  D  F  I  L  N  I  D  P  V  E  A  D  D  V

VH

           671        681        691        701        711        721        731        741
                                                                                NotI (874)
CAACCTATTTCTGTCAGCAGAGTTGGAATGATCCTCCGACGTTCGGTTCAGGCACCAAGGTGGAATTGAAAGCGGCCGCA
A  T  Y  F  C  Q  Q  S  W  N  D  P  P  T  F  G  S  G  T  K  V  E  L  K  A  A  A
                   CDR3L
VH

           751        761        771        781        791        801  804
GAACAAAAACTCATCTCAGAAGAGGATCTGAATGGGGCCGCAAGCGAGAAGGACGAGCTGTAG
 E  Q  K  L  I  S  E  E  D  L  N  G  A  A  S  E  K  D  E  L
myc epitope tag                                ER retention signal
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