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(54) Title: USE OF ANTI-ALPHA5BETA1 ANTIBODIES TO INHIBIT CANCER CELL PROLIFERATION

(57) Abstract: The present invention provides methods for direct killing of cancer cells using anti-α5β1 antibodies. Generally, the method comprises contacting a cancer cell that expresses α5β1 on its surface with an anti-α5β1 antibody, and thereby inducing the death of the cancer cell. The methods of the invention may be employed at an early stage of cancer development in a patient to prevent tumor establishment. In addition, the methods may be used to treat previously formed tumors especially in cancer that have not proven susceptible to anti-angiogenesis therapy. The methods may be employed as a combination therapy of anti-α5β1 antibodies together with cancer chemotherapeutic agents or other molecular-based cancer therapeutic agents.

A. IIA1 V_H sequences
[NA, SEQ ID NO: 1; AA, SEQ ID NO: 2]

```
   1  ATGGCTGTCCTGGGGCTGCTTCTCTGCCTGGTGACTTTCCCAAGCTGTGTCCTGTCCCAG
        M  A  V  L  G  L  L  L  C  L  V  T  F  P  S  C  V  L  S  Q
  61  GTGCAGCTGAAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGAGCCTGTCCATCACA
        V  Q  L  K  E  S  G  P  G  L  V  A  P  S  Q  S  L  S  I  T
 121  TGCACCATCTCAGGGTTCTCATTAACCGACTATGGTGTTCACTGGGTTCGCCAGCCTCCA
        C  T  I  S  G  F  S  L  T  D  Y  G  V  H  W  V  R  Q  P  P
 181  GGAAAGGGTCTGGAGTGGCTGGTAGTGATTTGGAGTGATGGAAGCTCAACCTATAATTCA
        G  K  G  L  E  W  L  V  V  I  W  S  D  G  S  S  T  Y  N  S
 241  GCTCTCAAATCCAGAATGACCATCAGGAAGGACAACTCCAAGAGCCAAGTTTTCTTAATA
        A  L  K  S  R  M  T  I  R  K  D  N  S  K  S  Q  V  F  L  I
 301  ATGAACAGTCTCCAAACTGATGACTCAGCCATGTACTACTGTGCCAGACATGGAACTTAC
        M  N  S  L  Q  T  D  D  S  A  M  Y  Y  C  A  R  H  G  T  Y
 361  TACGGTATGACTACGACGGGGGATGCTTTGGACTACTGGGGTCAAGGAACCTCAGTCACC
        Y  G  M  T  T  T  G  D  A  L  D  Y  W  G  Q  G  T  S  V  T
 421  GTCTCCTCA
        V  S  S
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B. IIA1 V_L sequences
[NA, SEQ ID NO: 3; AA, SEQ ID NO: 4]

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   1  ATGGATTTTCAGGTGCAGATTTTCAGCTTCCTGCTAATCAGTGCCTCAGTCATAATGTCC
        M  D  F  Q  V  Q  I  F  S  F  L  L  I  S  A  S  V  I  M  S
  61  AGAGGACAAATTGTTCTCACCCAGTCTCCAGCAATCATGTCTGCATCTCTAGGGGAACGG
        R  G  Q  I  V  L  T  Q  S  P  A  I  M  S  A  S  L  G  E  R
 121  GTCACCATGACCTGCACTGCCAGTTCAAGTGTAAGTTCCAATTACTTGCACTGGTACCAG
        V  T  M  T  C  T  A  S  S  S  V  S  S  N  Y  L  H  W  Y  Q
 181  CAGAAGCCAGGATCCGCCCCCAATCTCTGGATTTTATAGCACATCCAACCTGGCTTCTGGA
        Q  K  P  G  S  A  P  N  L  W  I  Y  S  T  S  N  L  A  S  G
 241  GTCCCAGCTCGTTTCAGTGGCAGTGGGTCTGGGACCTCTTACTCTCTCACAATCAGCAGC
        V  P  A  R  F  S  G  S  G  S  G  T  S  Y  S  L  T  I  S  S
 301  ATGGAGGCTGAAGATGCTGCCACTTATTACTGCCACCAGTATCTTCGTTCCCCACCGACG
        M  E  A  E  D  A  A  T  Y  Y  C  H  Q  Y  L  R  S  P  P  T
 361  TTCGGTGGAGGCACCAAGCTGGAAATCAAA
        F  G  G  G  T  K  L  E  I  K
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