FIG. 1

```
h3G10       VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANGYT
h3G10.A57   VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANFYT
h3G10.2.42  VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKVNFYT
h3G10.1.7   VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANKYT
h3G10.1.60  VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANVYT
h3G10.2.5   VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANIYT
h3G10.1.91  VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANFET
h3G10.2.37  VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANFYT
h3G10.2.45  VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANFYT
h3G10.3.25  VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANFYT
h3G10.1.33  VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANFYT
h3G10.2.54  VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANFYT
h3G10.A59   VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANTYT
h3G10.A62   VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVGFIRHKANLYT
h3G10.B44   VH EVQLVESGGGLVQPGGSLRLSCAASGFTFSDYYMSWVRQAPGKGLEWVSFIRHKANFYT

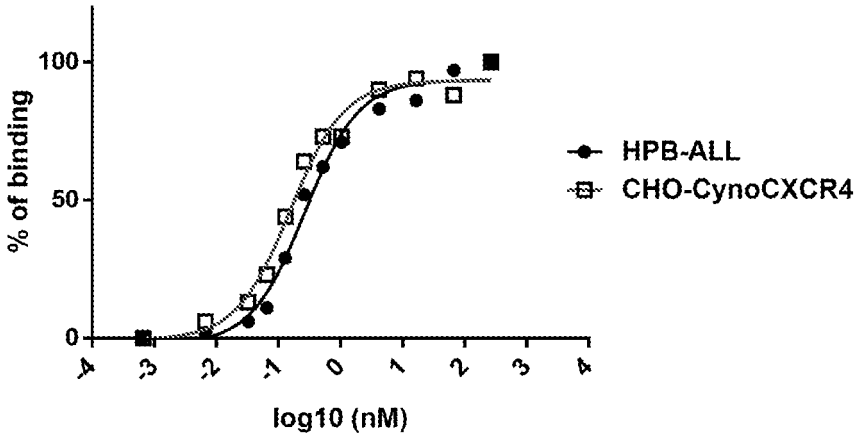
h3G10       VH TEYSTSVKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.A57   VH TEYSTSVKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.2.42  VH TEYSTSVKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.1.7   VH TEYSTSVKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.1.60  VH TEYSTSVKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.2.5   VH TEYSTSVKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.1.91  VH TEYSTSVKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.2.37  VH REYSTSVKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.2.45  VH TEYSTWVKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.3.25  VH TEYSTSDKGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.1.33  VH TEYSTSVTGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.2.54  VH TEYSTSVRGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.A59   VH TEYSTSVRGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.A62   VH TEYSTSVRGRFTISRDDSKNSLYLQMNSLKTEDTAVYYCARDLPGFAYWGQGTLVTVSS
h3G10.B44   VH TEYSTSVKGRFTISRDNSKNTLYLQMNSLRAEDTAVYYCAKDLPGFAYWGQGTLVTVSS
```

FIG. 2

```
h3G10      VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRTRKNYLAWYQQKPGQPPKLLIY
h3G10.2.72 VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRTRKNYLAWYQQKPGQPPKLLIY
h3G10.2.25 VL DIVMTQSPDSLAVSLGERATINCRSSQSLFNSRTRKNYLAWYQQKPGQPPKLLIY
h3G10.A11A VL DIVMTQSPDSLAVSLGERATINCKSAQSLFNSRTRKNYLAWYQQKPGQPPKLLIY
h3G10.A11B VL DIVMTQSPDSLAVSLGERATINCKSAQSLFNSRTRKNYLAWYQQKPGQPPKLLIY
h3G10.A18A VL DIVMTQSPDSLAVSLGERATINCKSSWSLFNSRTRKNYLAWYQQKPGQPPKLLIY
h3G10.A18B VL DIVMTQSPDSLAVSLGERATINCKSSWSLFNSRTRKNYLAWYQQKPGQPPKLLIY
h3G10.A19A VL DIVMTQSPDSLAVSLGERATINCKSSNSLFNSRTRKNYLAWYQQKPGQPPKLLIY
h3G10.A19B VL DIVMTQSPDSLAVSLGERATINCKSSNSLFNSRTRKNYLAWYQQKPGQPPKLLIY
h3G10.A58A VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSHTRKNYLAWYQQKPGQPPKLLIY
h3G10.A58B VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSHTRKNYLAWYQQKPGQPPKLLIY
h3G10.A65A VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRFRKNYLAWYQQKPGQPPKLLIY
h3G10.A65B VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRFRKNYLAWYQQKPGQPPKLLIY
h3G10.B12A VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRTRKNYLLWYQQKPGQPPKLLIY
h3G10.B12B VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRTRKNYLLWYQQKPGQPPKLLIY
h3G10.B13A VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRTRKNYLNWYQQKPGQPPKLLIY
h3G10.B13B VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRTRKNYLNWYQQKPGQPPKLLIY
h3G10.B18A VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRTRKNYLMWYQQKPGQPPKLLIY
h3G10.B18B VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRTRKNYLMWYQQKPGQPPKLLIY
h3G10.L94D VL DIVMTQSPDSLAVSLGERATINCKSSQSLFNSRTRKNYLAWYQQKPGQPPKLLIY

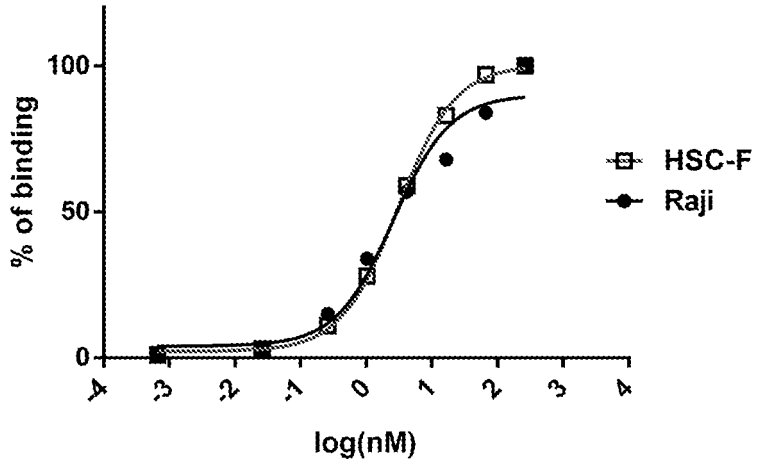
h3G10      VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNLRTFGGGTKVEIK
h3G10.2.72 VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.2.25 VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.A11A VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.A11B VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNLRTFGGGTKVEIK
h3G10.A18A VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.A18B VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNLRTFGGGTKVEIK
h3G10.A19A VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.A19B VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNLRTFGGGTKVEIK
h3G10.A58A VL WASARGSGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.A58B VL WASARGSGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNLRTFGGGTKVEIK
h3G10.A65A VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.A65B VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNLRTFGGGTKVEIK
h3G10.B12A VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.B12B VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNLRTFGGGTKVEIK
h3G10.B13A VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.B13B VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNLRTFGGGTKVEIK
h3G10.B18A VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFRLRTFGGGTKVEIK
h3G10.B18B VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNLRTFGGGTKVEIK
h3G10.L94D VL WASARESGVPDRFSGSGSGTDFTLTISSLQAEDVAVYYCKQSFNDRTFGGGTKVEIK
```

FIG. 3A




| | HPB-ALL | CHO-CynoCXCR4 |
|---|---|---|
| EC50 (nM) | 0.27 | 0.16 |

FIG. 3B




| | Raji | HSC-F |
|---|---|---|
| EC50 (nM) | 3.050 | 2.585 |

FIG. 4A

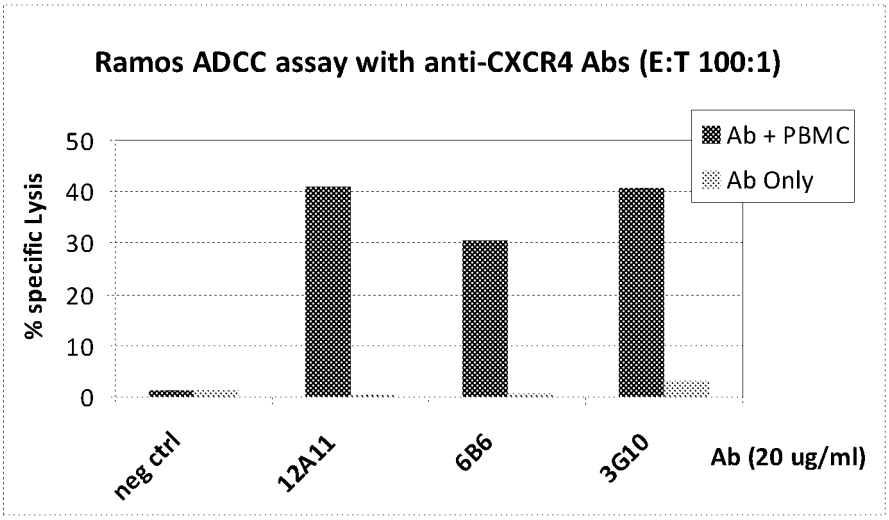

Ramos ADCC assay with anti-CXCR4 Abs (E:T 100:1)
% specific Lysis
50
40
30
20
10
0
Ab + PBMC
Ab Only
neg ctrl
12A11
6B6
3G10
Ab (20 ug/ml)

FIG. 4B

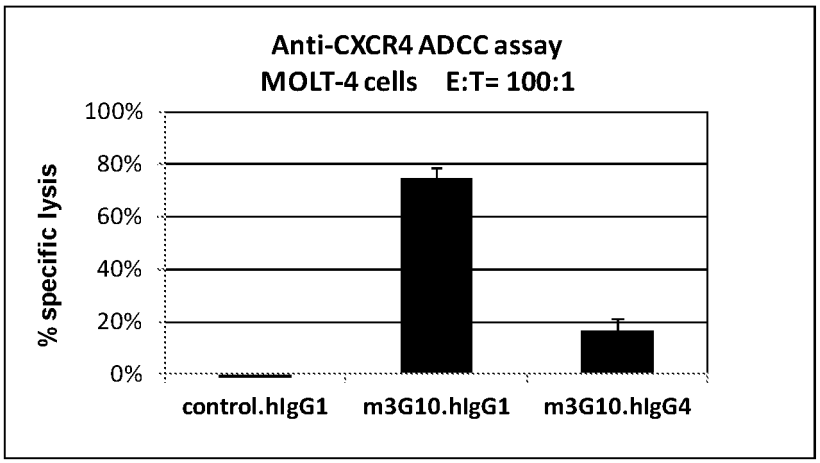

Anti-CXCR4 ADCC assay
MOLT-4 cells E:T= 100:1
% specific lysis
100%
80%
60%
40%
20%
0%
control.hIgG1
m3G10.hIgG1
m3G10.hIgG4

FIG. 4C

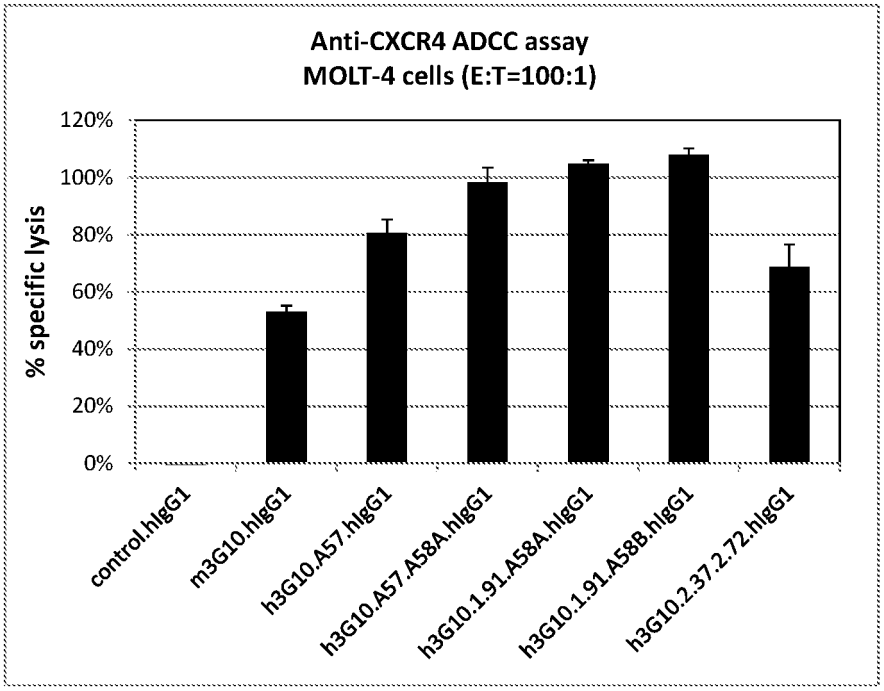

Anti-CXCR4 ADCC assay
MOLT-4 cells (E:T=100:1)
% specific lysis
120%
100%
80%
60%
40%
20%
0%
control.hIgG1
m3G10.hIgG1
h3G10.A57.hIgG1
h3G10.A57.A58A.hIgG1
h3G10.1.91.A58A.hIgG1
h3G10.1.91.A58B.hIgG1
h3G10.2.37.2.72.hIgG1

FIG. 4D

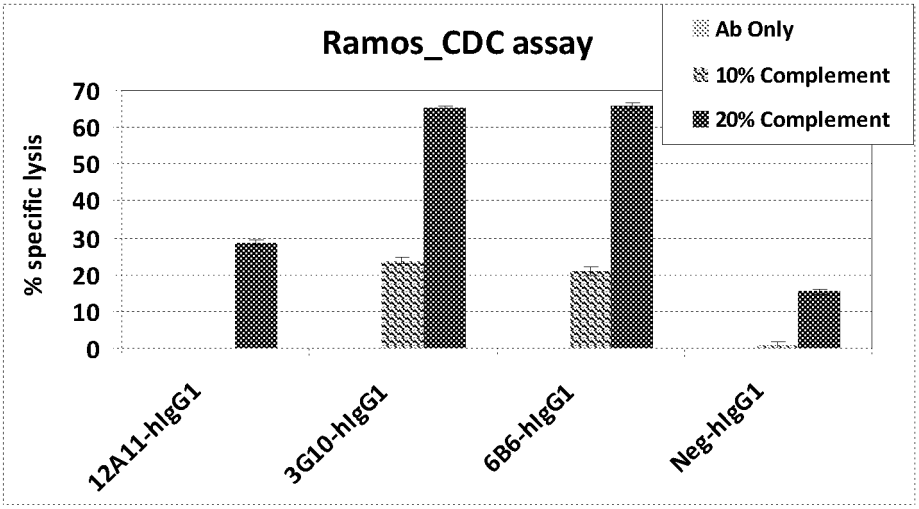

Ramos_CDC assay
Ab Only
10% Complement
20% Complement
% specific lysis
70
60
50
40
30
20
10
0
12A11-hIgG1
3G10-hIgG1
6B6-hIgG1
Neg-hIgG1

FIG. 4E

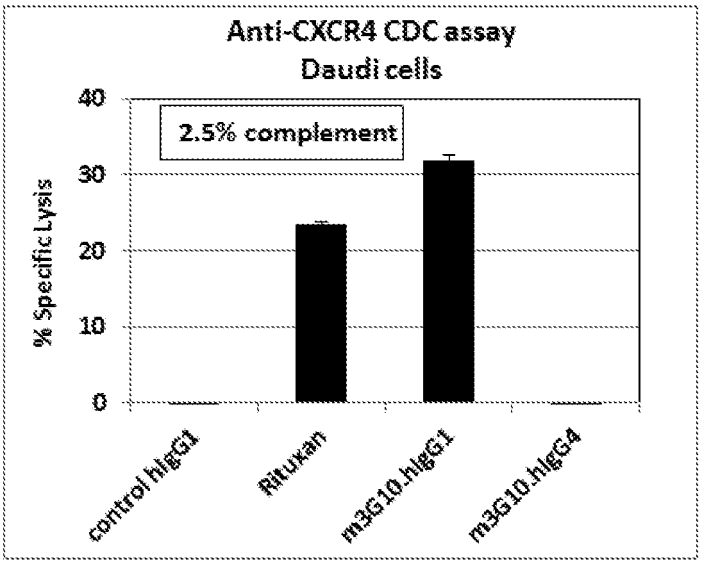

Anti-CXCR4 CDC assay
Daudi cells
2.5% complement
% Specific Lysis
40
30
20
10
0
control hIgG1
Rituxan
m3G10.hIgG1
m3G10.hIgG4

FIG. 4F

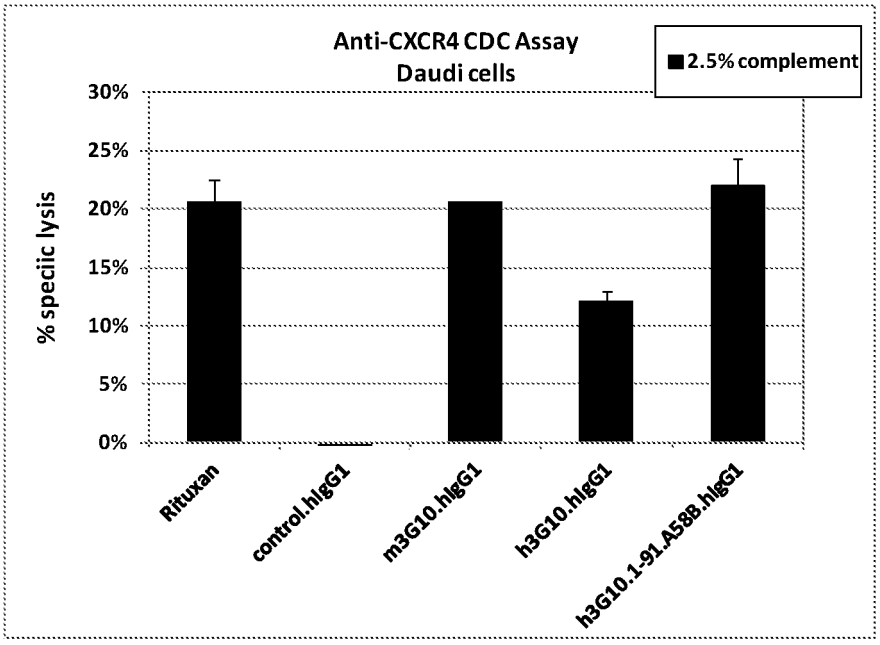
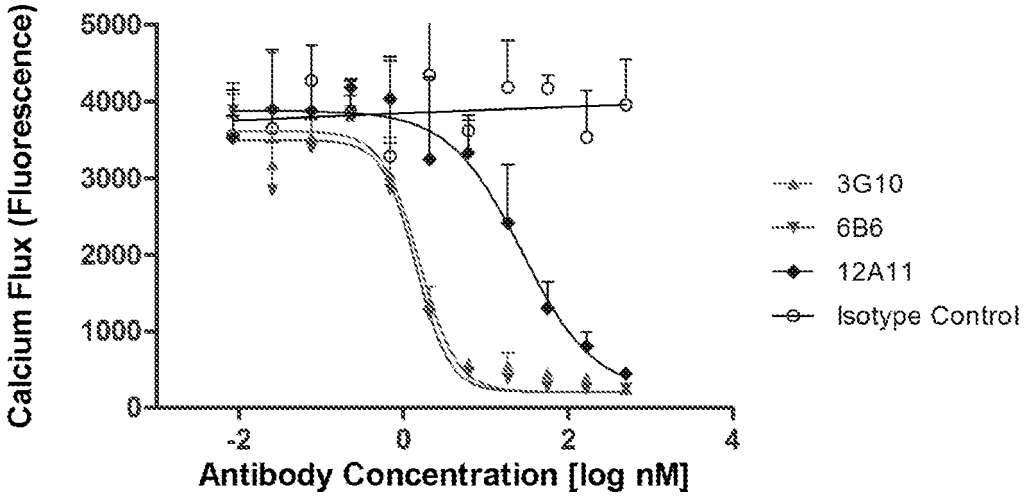

Anti-CXCR4 CDC Assay
Daudi cells
2.5% complement
% speciic lysis
30%
25%
20%
15%
10%
5%
0%
Rituxan
control.hIgG1
m3G10.hIgG1
h3G10.hIgG1
h3G10.1-91.A58B.hIgG1

FIG. 5




| | 3G10 | 6B6 | 12A11 |
|---|---|---|---|
| IC50nM | 1.555 | 1.418 | 27.07 |

FIG. 6A

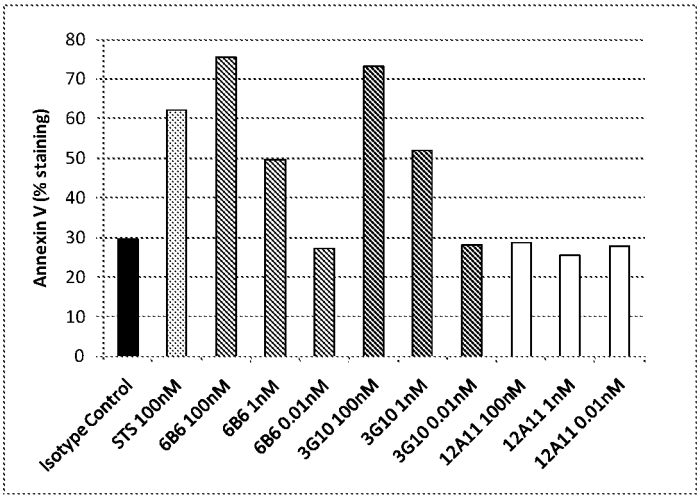

Annexin V (% staining)
80
70
60
50
40
30
20
10
0
Isotype Control
STS 100nM
6B6 100nM
6B6 1nM
6B6 0.01nM
3G10 100nM
3G10 1nM
3G10 0.01nM
12A11 100nM
12A11 1nM
12A11 0.01nM

FIG. 6B

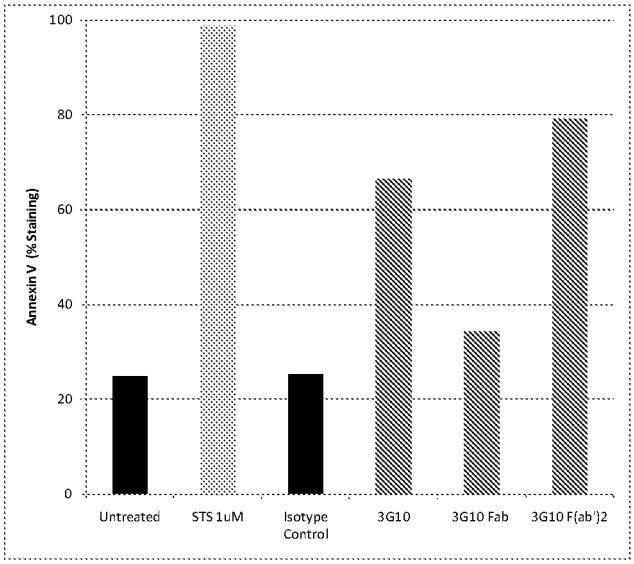

Annexin V (% Staining)
100
80
60
40
20
0
Untreated
STS 1uM
Isotype Control
3G10
3G10 Fab
3G10 F(ab')2

FIG. 7

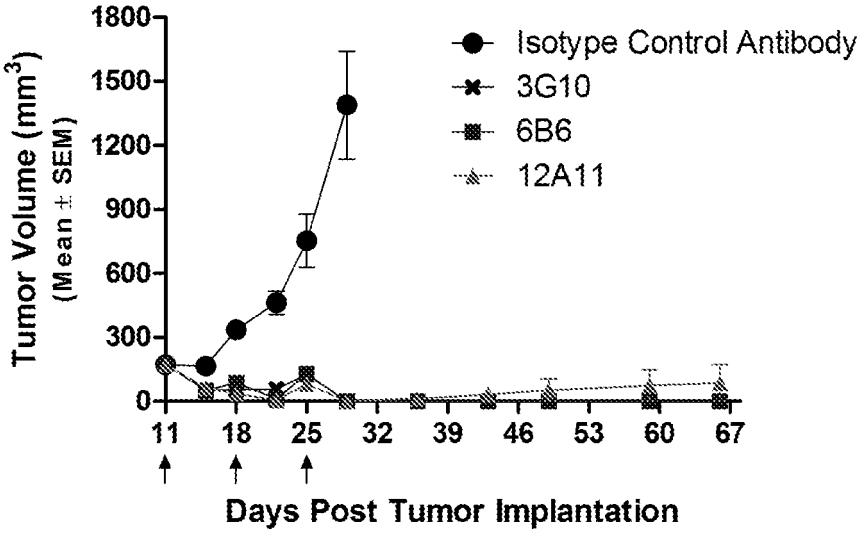

Tumor Volume (mm3)
(Mean ± SEM)
1800
1500
1200
900
600
300
0
11
18
25
32
39
46
53
60
67
Days Post Tumor Implantation
Isotype Control Antibody
3G10
6B6
12A11

FIG. 8A

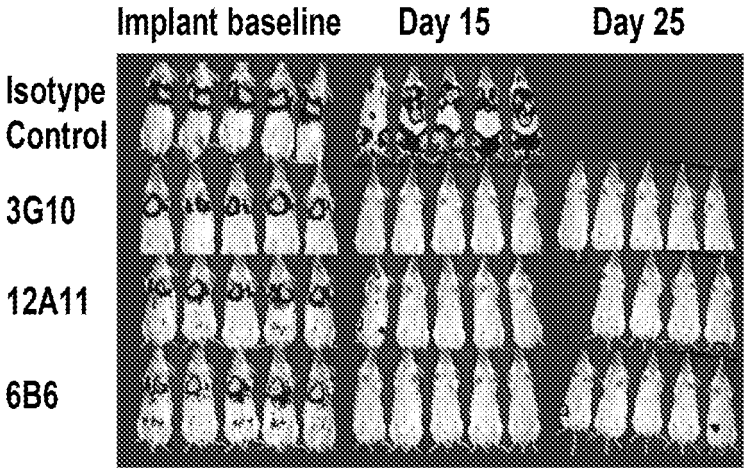

Implant baseline
Day 15
Day 25
Isotype Control
3G10
12A11
6B6

FIG. 8B

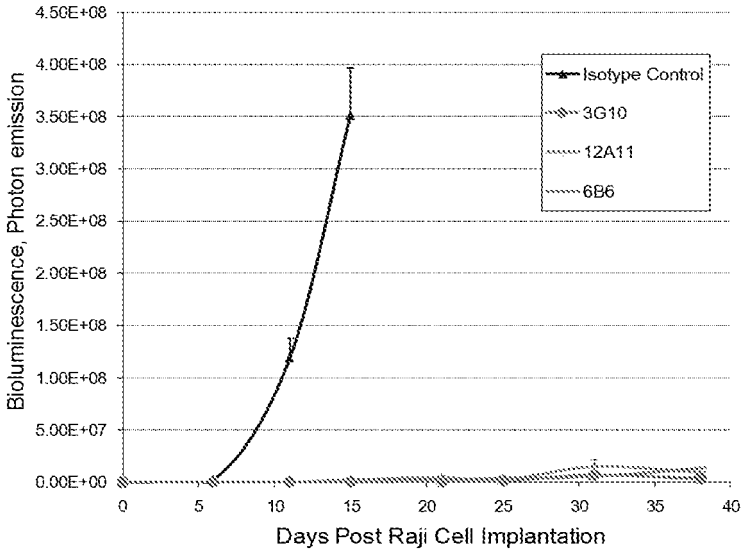

Bioluminescence, Photon emission
4.50E+08
4.00E+08
3.50E+08
3.00E+08
2.50E+08
2.00E+08
1.50E+08
1.00E+08
5.00E+07
0.00E+00
0
5
10
15
20
25
30
35
40
Days Post Raji Cell Implantation
Isotype Control
3G10
12A11
6B6

FIG. 8C

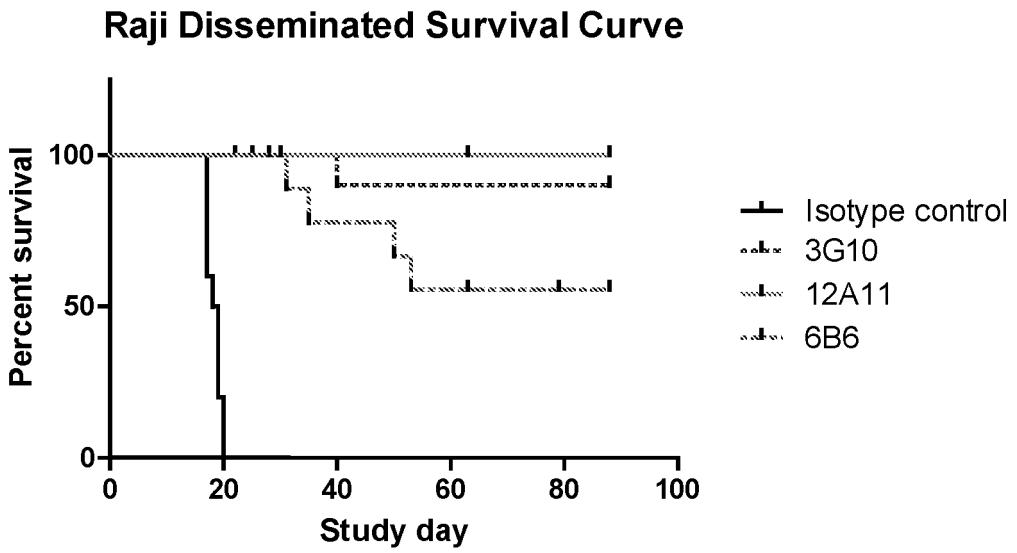

Raji Disseminated Survival Curve
Percent survival
100
50
0
0
20
40
60
80
100
Study day
Isotype control
3G10
12A11
6B6

FIG. 9A

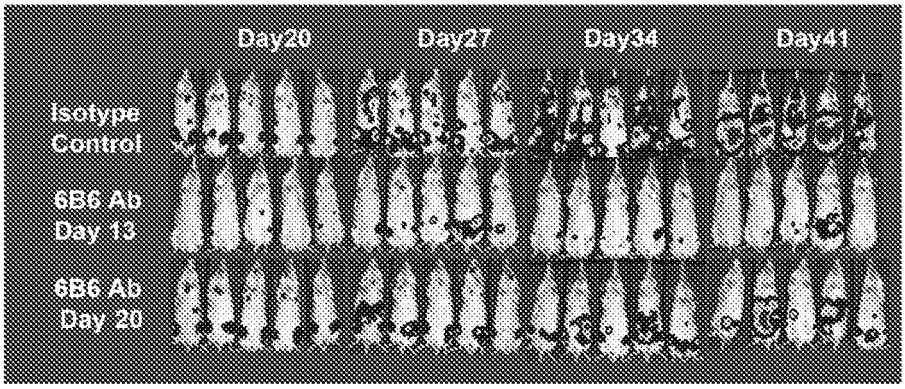



FIG. 9B

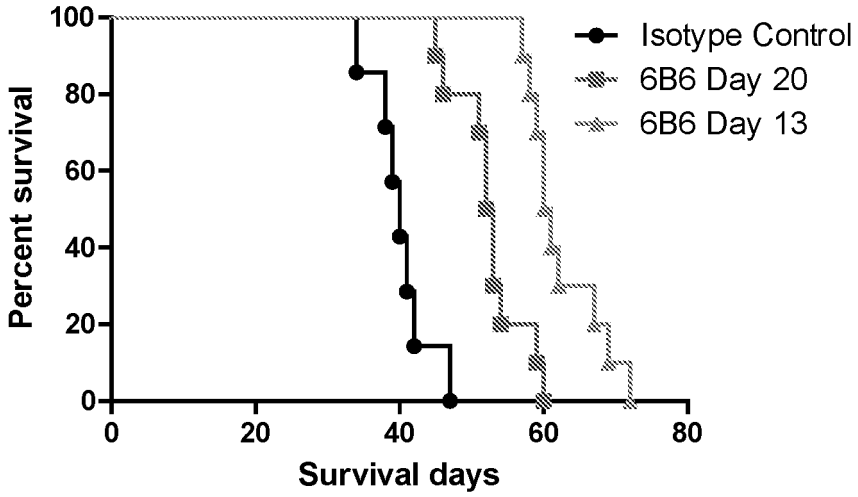



FIG. 9C

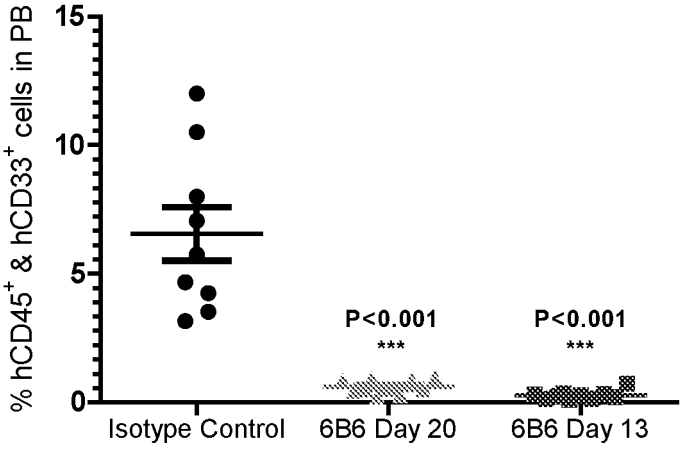


FIG. 10A

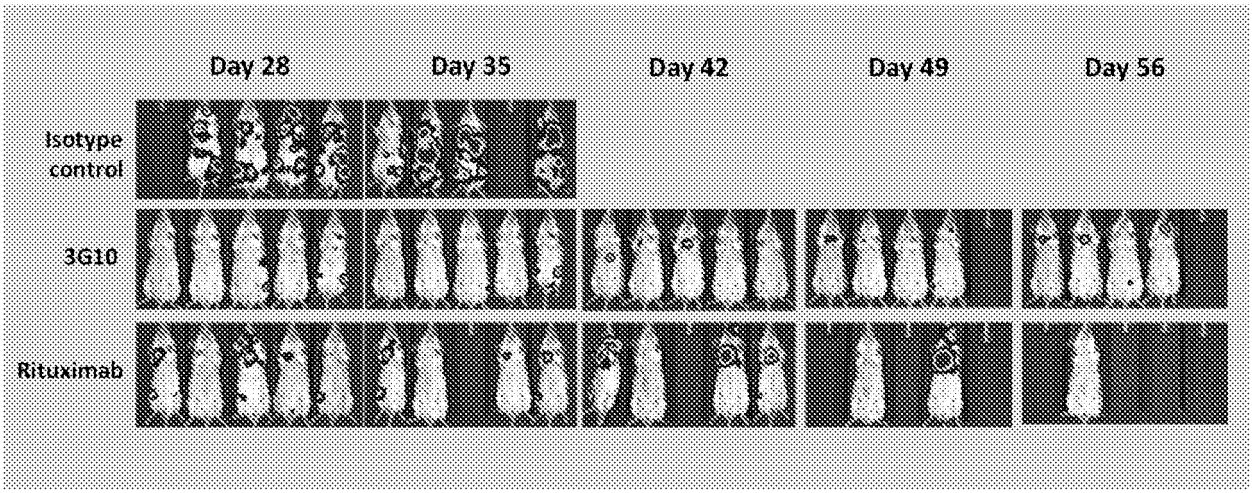



FIG. 10B

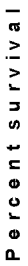


FIG. 11

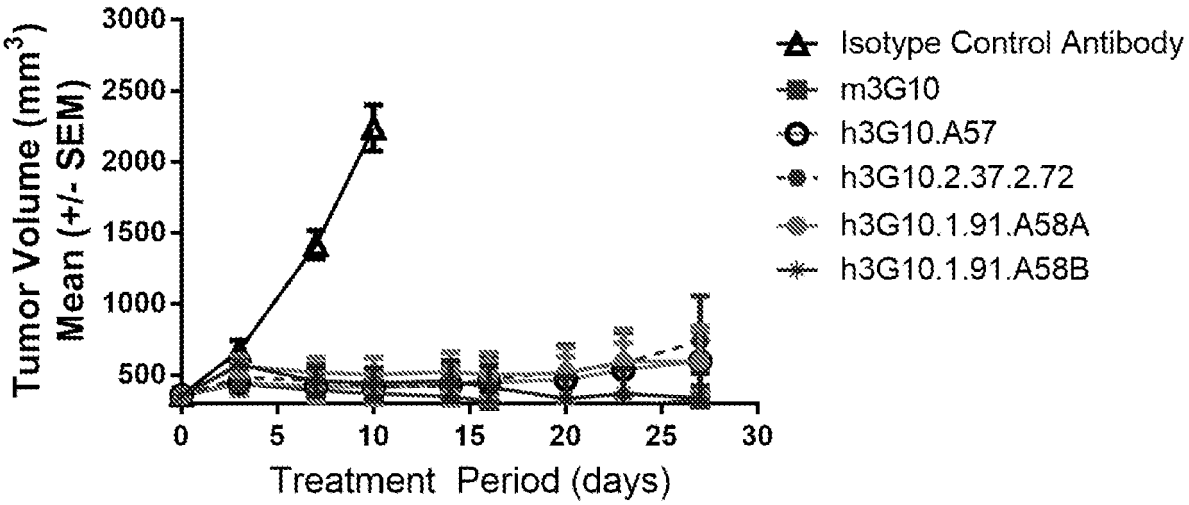



FIG. 12A

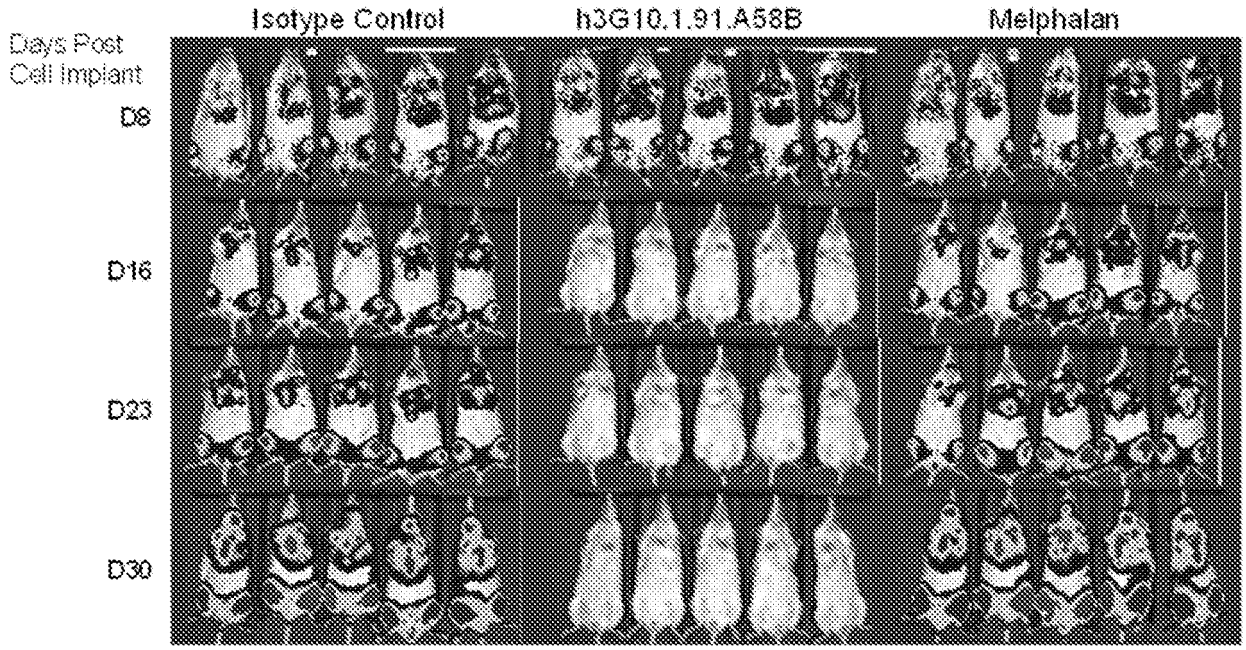


FIG. 12B

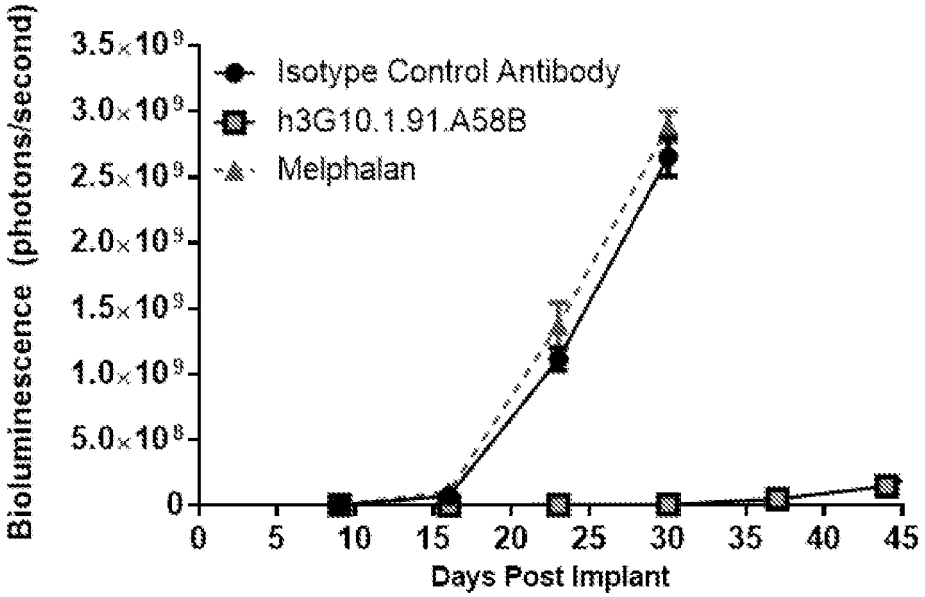
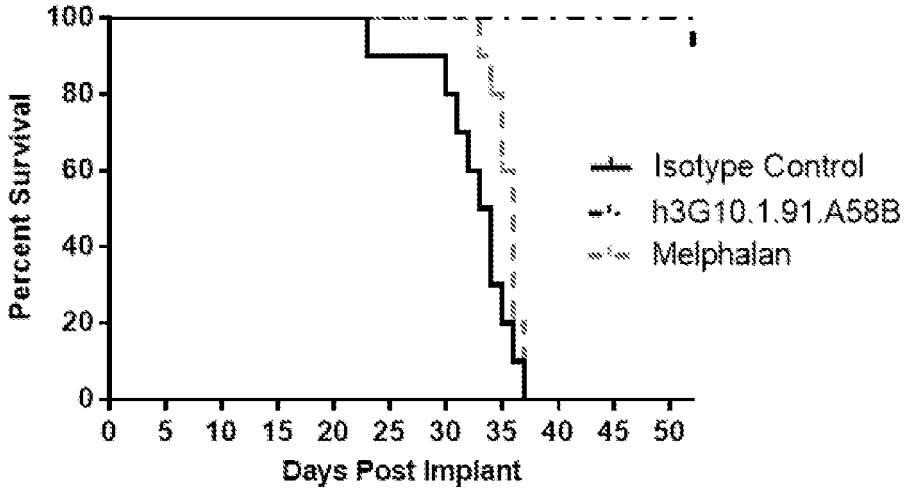



FIG. 12C




| | Isotype Control | h3G10.1.91.A58B | Melphalan |
|---|---|---|---|
| Median Survival (Days) | 33.5 | Undefined | 36 |

FIG. 13A

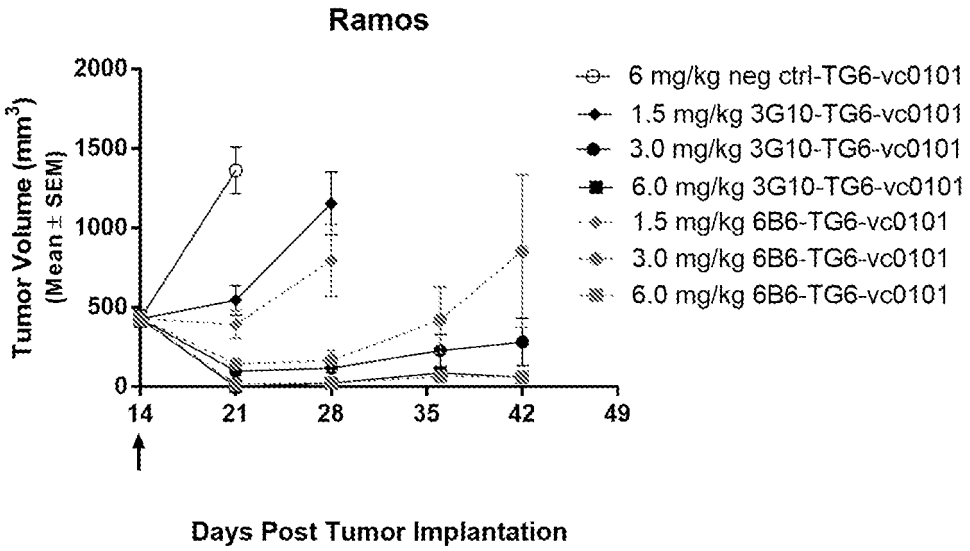



FIG. 13B

