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APPLICATION NUMBER: ***13/938,923***
FILING DATE: ***July 10, 2013***
PATENT NUMBER: ***8911993***
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Certified by

Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office

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In re Application of:
Carl H. June et al.

Application No.: 13/938,923

Filed: July 10, 2013

Title: Compositions for Treatment of Cancer

Confirmation No.: 9898

Group Art Unit: 1633

Examiner: Burkhart, Michael D.

Attorney Docket No.
046483-6001US2 (00169)

AMENDMENT

This Amendment responds to the final Office Action dated March 28, 2014, sent in connection with the above-identified application.

A Petition for a three month extension of time and associated fee is included herewith which extends the time for the response to the Office Action through and to September 28, 2014.

A Request for Continued Examination (RCE) and associated fee is being filed simultaneously herewith.

A Certification and Request for Prioritized Examination under 37 C.F.R. 1.102(e) (Track I) and associated fee is being filed simultaneously herewith.

A Supplemental Information Disclosure Statement and Form 1449 is being filed simultaneously herewith.

A Request for Examiner Interview in person at the USPTO with the Examiner and his Supervising Examiner, is being filed simultaneously herewith.

A Declaration of Dr. Carl June is being filed simultaneously herewith.

Please charge the any underpayment of fee, or credit any overpayment, to Deposit Account No. 50-4364.

Amendments to the claims begin on page 3 of this paper.

Remarks begin on page 6 on this paper.

In the Claims:

The listing of the claims will replace all prior versions, and listings, of claims in the application.

1 to 89. (canceled)

90. (currently amended) A pharmaceutical composition comprising an anti-tumor effective amount of a population of ~~modified autologous~~ human T cells, wherein the T cells comprise a nucleic acid sequence that encodes a chimeric antigen receptor (CAR), wherein the CAR comprises a CD19 antigen binding domain comprising the amino acid sequence of SEQ ID NO: 20, a CD8α hinge domain, a CD8α transmembrane domain, a 4-1BB costimulatory signaling region, and a CD3 zeta signaling domain comprising the amino acid sequence of SEQ ID NO:24~~, wherein the anti-tumor effective amount of T cells is 10^4 to 10^9 cells per kg body weight of a human in need of such cells~~, wherein the T cells are T cells of a human having a cancer.

91. (canceled)

92. (currently amended) The composition of claim 90, wherein the anti-tumor effective amount of T cells is 10^4 ~~10^5~~ to 10^9 ~~10^6~~ cells per kg body weight of ~~the~~ a human in need of such cells.

93 to 95. (canceled)

97. (previously presented) The composition of claim 90, wherein the CD8α transmembrane domain comprises the amino acid sequence of SEQ ID NO: 22.

98. (previously presented) The composition of claim 90, wherein the CD8α hinge domain comprises the amino acid sequence of SEQ ID NO: 21.

99. (previously presented) The composition of claim 90, wherein the 4-1BB costimulatory signaling region comprises the amino acid sequence of SEQ ID NO: 23.

100. (canceled)

101. (currently amended) The composition of claim [[96]] 90, wherein the ~~scFv~~ CD19 antigen binding domain is encoded by a nucleic acid sequence comprising SEQ ID NO: 14.

102. (previously presented) The composition of claim 97, wherein the CD8α transmembrane domain is encoded by a nucleic acid sequence comprising SEQ ID NO: 16.

103. (previously presented) The composition of claim 98, wherein the CD8α hinge domain is encoded by a nucleic acid sequence comprising SEQ ID NO: 15.

104. (previously presented) The composition of claim 99, wherein the 4-1BB costimulatory signaling region is encoded by a nucleic acid sequence comprising SEQ ID NO: 17.

105. (currently amended) The composition of claim [[100]] 90, wherein the CD3 zeta signaling domain is encoded by a nucleic acid sequence comprising SEQ ID NO: 18.

106. (new) The composition of claim 97, wherein the 4-1BB costimulatory signaling region comprises the amino acid sequence of SEQ ID NO:23.

107. (new) The composition of claim 106, wherein the 4-1BB costimulatory signaling region of the CAR is encoded by a nucleic acid sequence comprising SEQ ID NO:17.

108. (new) The composition of claim 98, wherein the 4-1BB costimulatory signaling region comprises the amino acid sequence of SEQ ID NO:23.

109. (new) The composition of claim 108, wherein the 4-1BB costimulatory signaling region is encoded by a nucleic acid sequence comprising SEQ ID NO:17.

110. (new) A pharmaceutical composition comprising an anti-tumor effective amount of a population of human T cells, wherein the T cells comprise a nucleic acid sequence that encodes a

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