

CLAIMS

1. A computer-implemented method of selecting an allogeneic T cell line for therapeutic administration to a human patient having or suspected of having a pathogen or cancer, comprising:

selecting a T cell line allogeneic to the patient that recognizes at least one epitope of an antigen of the pathogen or the cancer, using a representation that (i) identifies a plurality of HLA alleles and optionally HLA allele combinations, and (ii) discloses indications of relative activities of T cell lines, each recognizing at least one epitope of an antigen of the pathogen or cancer, and restricted to different ones of the HLA alleles or HLA allele combinations in the plurality; wherein in the representation each identified HLA allele or HLA allele combination is associated with the respective indication of relative activity of the T cell line restricted to the HLA allele or HLA allele combination, the relative activities being relative measures of known activity against the pathogen or against the cancer exhibited by the T cell lines; wherein

(A) the T cell line selected has in common with the patient or diseased cells in the patient the HLA allele or HLA allele combination identified by the representation to which the recognition of the T cell line is restricted; and

(B) the HLA allele or HLA allele combination, to which the T cell line selected is restricted, is associated in the representation with an indication of the highest relative activity among the HLA alleles and HLA allele combinations in the representation that are known to be in common with the patient or the diseased cells in the patient and are not otherwise disqualified.

2. A computer-implemented method of selecting an allogeneic T cell donor from whom to derive an allogeneic T cell line for therapeutic administration to a human patient having or suspected of having a pathogen or cancer, comprising:

selecting a T cell donor allogeneic to the patient, using a representation that (i) identifies a plurality of HLA alleles and optionally HLA allele combinations, and (ii) discloses indications of relative activities of T cell lines, each recognizing at least one epitope of an antigen of the pathogen or cancer, and restricted to different ones of the HLA alleles or HLA allele combinations in the plurality; wherein in the representation

each identified HLA allele or HLA allele combination is associated with the respective indication of relative activity of the T cell line restricted to the HLA allele or HLA allele combination, the relative activities being relative measures of known activity against the pathogen or against the cancer exhibited by the T cell lines; wherein

(A) the T cell donor selected has at least one HLA allele or HLA allele combination in common with the patient or diseased cells in the patient; and

(B) one of the at least one HLA allele or HLA allele combination in common with the patient or the diseased cells in the patient is associated in the representation with an indication of the highest relative activity among the HLA alleles and HLA allele combinations in the representation that are known to be in common with the patient or the diseased cells in the patient and are not otherwise disqualified.

3. The computer-implemented method of claim 1 or 2, which further comprises prior to the selecting step, a step of generating the representation.
4. The computer-implemented method of claim 3, which further comprises prior to the generating step, a step of measuring the relative activities.
5. The computer-implemented method of any one of claims 1-4, wherein the representation is a list of the plurality of HLA alleles and optionally HLA allele combinations ranked by the relative activities.
6. The computer-implemented method of any one of claims 1-4, wherein the representation is a database listing the plurality of HLA alleles and optionally HLA allele combinations, each associated with a score indicative of relative activity.
7. The computer-implemented method of any one of claims 1-6, wherein the relative activities are in vivo clinical efficacies of the T cell lines in treatment of patients having the pathogen or cancer.
8. The computer-implemented method of any one of claims 1-7, wherein the patient has or is suspected of having a pathogen, wherein the T cell lines recognize at least one epitope of an antigen of the pathogen, and wherein the relative activities are relative measures of known activity against the pathogen.
9. The computer-implemented method of any one of claims 1-7, wherein the patient has or is suspected of having a cancer, wherein the T cell line recognizes at least one epitope of

an antigen of the cancer, and wherein the relative activities are relative measures of known activity against the cancer.

10. The computer-implemented method of claim 8, wherein the pathogen is a virus.
11. The computer-implemented method of claim 10, wherein the virus is CMV.
12. The computer-implemented method of claim 10, wherein the virus is EBV.
13. The computer-implemented method of claim 9, wherein the antigen is WT1.
14. The computer-implemented method of claim 9, wherein the cancer is a lymphoproliferative disorder.
15. The computer-implemented method of claim 14, wherein the cancer is an EBV-positive post-transplant lymphoproliferative disorder.
16. The computer-implemented method of claim 15, wherein the antigen is EBNA1, EBNA2, EBNA3A, EBNA3B, EBNA3C, LMP1 or LMP2.
17. The computer-implemented method of claim 14, wherein the cancer is an EBV-positive nasopharyngeal carcinoma.
18. The computer-implemented method of claim 17, wherein the antigen is EBNA1, LMP1, or LMP2.
19. A computer system for selecting an allogeneic T cell line or an allogeneic T cell donor from whom to derive an allogeneic T cell line for therapeutic administration to a human patient having or suspected of having a pathogen or cancer, comprising:
 - a central processing unit;
 - a memory, coupled to the central processing unit, the memory storing instructions for performing the steps of the computer-implemented method of any one of claims 1-18.
20. A computer readable medium having computer-executable instructions for performing the steps of the computer-implemented method of any one of claims 1-18.
21. A method of obtaining an allogeneic T cell line for therapeutic administration to a human patient having or suspected of having a pathogen or cancer, comprising:
 - (a) selecting an allogeneic T cell donor according to the computer-implemented method of claim 2, or of any one of claims 3-18 when dependent directly or indirectly on claim 2; and

(b) deriving an allogeneic T cell line from the selected allogeneic T cell donor, which allogeneic T cell line recognizes at least one epitope of an antigen or the pathogen or cancer.