

## CLAIMS

1. A method of predicting the responsiveness of a subject having a cancer described herein, to a therapeutic treatment with a CAR-expressing cell prior to administration of the CAR-expressing cell, comprising evaluating in a sample comprising an immune effector cell from the subject:

i) a level of glucose metabolism, wherein:

a level of glucose metabolism that is lower than a glucose metabolism reference value is indicative that the subject is likely to exhibit a complete response or a partial response to treatment with the CAR-expressing cell, and

a level of glucose metabolism that is higher than a glucose metabolism reference value is indicative that the subject is less likely to exhibit a complete response or partial response to treatment with the CAR-expressing cell,

wherein the glucose metabolism reference value is the glucose metabolism value of a cell of a complete responder subject as described in Example 1, and wherein the sample containing the cell is contacted with mock stimulation that is stimulation with an antigen other than the CAR antigen, as described in Example 1; or

ii) a level of Stat3 activation as measured by phosphorylation of Stat3 on tyrosine 705 (Y705) or level or activity of Stat3 transcriptional targets c-Myc, c-Fos, Sox2, or Bcl-2, wherein:

a level of Stat3 activation that is higher than a Stat3 activation reference value is indicative that the subject is likely to exhibit a complete response or a partial response to treatment with the CAR-expressing cell, and

a level of Stat3 activation that is lower than a Stat3 activation reference value is indicative that the subject is less likely to exhibit a complete response or partial response to treatment with the CAR-expressing cell,

thereby predicting the responsiveness of the subject to the CAR-expressing cell.