CLAIMS

We claim:

1. Use of an inhibitor of GM-CSF, CSF1, GM-CSFR or CSF1R in the manufacture of a medicament for preventing or treating an adverse reaction associated with genetically modified T cell immunotherapy.

2. The use of claim 1 o, wherein the adverse reaction is selected from the group consisting of cytokine release syndrome (CRS), a neurologic toxicity, a hypersensitivity reaction, a serious infection, a cytopenia and hypogammaglobulinemia.

3. The use of claim 1 or 2, wherein the signs and symptoms of adverse reactions are selected from the group consisting of fever, hypotension, tachycardia, hypoxia, and chills, include cardiac arrhythmias (including atrial fibrillation and ventricular tachycardia), cardiac arrest, cardiac failure, renal insufficiency, capillary leak syndrome, hypotension, hypoxia, organ toxicity, hemophagocytic lymphohistiocytosis/macrophage activation syndrome (HLH/MAS), seizure, encephalopathy, headache, tremor, dizziness, aphasia, delirium, insomnia anxiety, anaphylaxis, febrile neutropenia, thrombocytopenia, neutropenia, and anemia.

4. The use of any one of claims 1 to 3, wherein the adverse reaction is cytokine release syndrome (CRS).

5. The use of any one of claims 1 to 4, wherein:

(i) the GM-CSF inhibitor is selected from lenzilumab; namilumab, GSK3196165, KB002, KB003, MT203, gimsilumab and E21R;
(ii) the CSF1 inhibitor is selected from RG7155, PD-0360324, lacnotuzumab; and/or
(iii) the GM-CSFR inhibitor and the CSF1R inhibitor is/are selected from the group consisting of Mavrilimumab, cabiralizumab, LY3022855, Emactuzumab, FPA008 , AMG820, ARRY-382, lenzilumab, PLX3397 ELB041, and SNDX-6352 (Syndax).

6. The use of claim 5, wherein the inhibitor is lenzilumab or mavrilimumab.

7. The use of any one of claims 1 to 6, wherein at least one dose of the medicament is to be administered on the same day as the genetically modified T cell immunotherapy.

8. The use of any one of claims 1 to 7, wherein the medicament is to be administered more than once after the genetically modified T cell immunotherapy is administered.

9. The use of any one of claims 1 to 8, wherein at least one dose of the medicament is to be administered between 1 to 12 hours prior to the administration of the genetically modified T cell immunotherapy.

10. The use of any one of claims 1 to 9, wherein the genetically modified T cell immunotherapy is directed at CD19.

11. The use of claim 10, wherein the genetically modified T cell immunotherapy is axicabtagene ciloleucel.

12. The use of claim 11, wherein the axicabtagene ciloleucel is to be administered as a single IV infusion at a target dose of 2×10^6 CAR-positive viable T cells/kg with a maximum permitted dose of 2×10^8 cells, and the mavrilimumab is to be administered once at 3 mg/kg of body weight on the same day.

13. The use of any one of claims 1 to 12, wherein the genetically modified T cell immunotherapy is to be used in a patient that is refractory to a first-line of therapy, refractory to second or greater lines of therapy, refractory after autologous stem cell transplant.

14. The use of any one of claims 1 to 13, wherein the genetically modified T cell immunotherapy is to be used in a patient with relapsed or refractory large B-cell lymphoma.

15. The use according to claim 14 wherein the large B-cell lymphoma is diffuse large B-cell lymphoma (DLBCL) not otherwise specified, primary mediastinal large B-cell lymphoma, high grade B-cell lymphoma, transformed follicular lymphoma, mantle cell lymphoma or diffuse large B cell lymphoma arising from follicular lymphoma

16. The use of any one of claims 1 to 15, wherein the patient is more than 65 years old.