PROTECTED EFFECTOR CELLS AND USE THEREOF FOR ALLOGENEIC ADOPTIVE CELL THERAPIES

RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Application Serial No. 63/218,204, filed July 2, 2021, to U.S. Provisional Application Serial No. 63/265,190, filed December 9, 2021, and to U.S. Provisional Application Serial No. 63/341,943, filed May 13, 2022, the disclosure of each of which is hereby incorporated by reference in their entireties.

INCORPORATION BY REFERENCE OF SEQUENCE LISTING

[0002] The Sequence Listing titled 184143-635601_SequenceListing.xml, which was created on July 1, 2022 and is 16,198 bytes in size, is hereby incorporated by reference in its entirety.

FIELD OF THE INVENTION

[0003] The present disclosure is broadly concerned with the field of off-the-shelf immunocellular products. More particularly, the present disclosure is concerned with strategies for developing multifunctional effector cells capable of delivering therapeutically relevant properties *in vivo*. The cell products developed under the present disclosure address critical limitations of patient-sourced cell therapies.

BACKGROUND OF THE INVENTION

[0004] The field of adoptive cell therapy is currently focused on using patient- and donor-sourced cells, which makes it particularly difficult to achieve consistent manufacturing of cancer immunotherapies and to deliver therapies to all patients who may benefit therefrom. There is also a need to improve the efficacy and persistence of adoptively transferred lymphocytes to promote favorable patient outcomes. Lymphocytes such as T cells and natural killer (NK) cells are potent anti-tumor effectors that play an important role in innate and adaptive immunity. However, the use of these immune cells for adoptive cell therapies remains challenging and has unmet needs for improvement. Therefore, there remain significant opportunities to harness the full potential of T and NK cells, or other lymphocytes in adoptive immunotherapy.

SUMMARY OF THE INVENTION

[0004a] In one aspect, provided herein is use of the composition as described herein in the manufacture of a medicament for an adoptive cell therapy for the treatment of an autoimmune disorder, a hematological malignancy, a solid tumor, cancer, or a virus infection.

[0004b] In another aspect, provided herein is use of the cell or population thereof as described herein in the manufacture of a medicament for reducing or preventing alloreactivity of host cells against allogeneic effector cells in an adoptive cell therapy to be provided to a subject in need thereof, wherein the medicament is to be used in combination with CD38 conditioning.

[0004c] In another aspect, provided herein is the cell or population thereof as described herein or the composition as described herein for use in therapy.

[0005] There is a need for functionally improved effector cells that address issues ranging from response rate, cell exhaustion, loss of transfused cells (survival and/or persistence), tumor escape through target loss or lineage switch, tumor targeting precision, off-target toxicity, off-