

TYPES OF ADOPTIVE T-CELL THERAPY

There are three main types of adoptive T-cell therapy (235). As of July 31, 2019, immunotherapeutics of only one type, chimeric antigen receptor (CAR) T-cell therapy, were approved by the U.S. Food and Drug Administration.

CAR T-cell therapy.

T cells are harvested from a patient's blood and genetically modified in the laboratory to have a new gene that encodes a protein called a CAR. The T cells are expanded in number and infused back into the patient. The CAR modification targets the T cells specifically to the patient's cancer cells and triggers them to attack when they interact with the cancer cells.



T-cell receptor (TCR) T-cell therapy.

T cells are harvested from a patient's blood and genetically modified in the laboratory to carry a new gene that encodes a protein called a TCR. The T cells are expanded in number and infused back into the patient. The TCR modification targets the T cells specifically to the patient's cancer cells and triggers them to attack when they encounter the cancer cells.



Tumor-infiltrating lymphocyte (TIL) therapy.

T cells are harvested directly from a patient's tumor, expanded in number in the laboratory, and infused back into the patient. Many of these T cells naturally recognize the patient's cancer.



Adapted from (1)