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(54) Title: CHIMERIC ANTIGEN RECEPTOR CONSTRUCTS AND USES THEREOF

(57) Abstract: The present invention relates to a polynucleotide molecule comprising a nucleotide sequence encoding a chimeric antigen receptor (CAR) or a fragment thereof i) comprising an extracellular domain comprising an antigen-binding region which binds to epidermal growth factor receptor variant III (EGFRvIII); or ii) comprising an extracellular domain comprising an antigen-binding region which binds to CD19; wherein the nucleotide sequence encoding the CAR is operably linked to a promoter and wherein the polynucleotide molecule further comprises a nucleotide sequence encoding a heterologous signal peptide fused to a signal regulatory protein gamma (SIRPγ)-related protein (SGRP). The present invention relates further to a chimeric antigen receptor (CAR)-T cell expressing the polynucleotide molecule and methods of treating cancer using the polynucleotide molecule and/or the chimeric antigen receptor (CAR)-T cell expressing the polynucleotide molecule.



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