

[Open Peer Review on Qeios](#)

# Autologous MCPyV-specific HLA-A02-restricted TCR-transduced CD4+ and CD8+ T-cells FH-MCVA2TCR

National Cancer Institute

## Source

National Cancer Institute. *Autologous MCPyV-specific HLA-A02-restricted TCR-transduced CD4+ and CD8+ T-cells FH-MCVA2TCR*. NCI Thesaurus. Code C156382.

A preparation of autologous CD4+ and CD62L-expressing CD8+ T-cells transduced with a third generation lentiviral vector (LV) to express the high affinity T-cell receptor (TCR) A2 -MCC1, specific for the human leucocyte antigen (HLA)-A02-restricted Merkel cell polyomavirus (MCPyV; MCV) viral oncoprotein, with potential immunomodulating and antineoplastic activities. Upon reintroduction into the patient, the autologous MCPyV-specific HLA-A02-restricted TCR-transduced CD8+ and CD4+ T-cells FH-MCVA2TCR selectively bind to the KLLIAPNC epitope (KLL epitope) within the MCPyV viral oncoprotein. This results in cytotoxic T-lymphocyte (CTL)-mediated elimination of tumor cells expressing the MCPyV viral oncoprotein. Additionally, tumor-specific HLA-A02-restricted CD4+ cells promote class I-restricted CD8+ proliferation, survival and effector functions by producing interleukin (IL)-2 and facilitating the activation of dendritic cells (DCs). MCPyV viral oncoprotein is highly expressed in Merkel cell carcinoma (MCC) caused by MCPyV.