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# HPV16-E6-T27

National Cancer Institute

## Source

National Cancer Institute. *HPV16-E6-T27*. NCI Thesaurus. Code C151956.

A transcription activator-like effector nucleases (TALEN)-edited plasmid targeting the human papillomavirus (HPV) type 16 (HPV16) epitope E6, with potential antineoplastic activity. Upon administration of TALEN-edited HPV16 E6 T27, the TALEN targets and binds to a specific site on genomic HPV16 E6 and cleaves the DNA sequences encoding E6. This causes double-strand DNA (dsDNA) breaks within the viral DNA, which prevents the transcription and translation of E6. Inhibition of E6 expression restores and increases the expression of tumor suppressor genes, such as p53, and proapoptotic protein BAK, and promotes downstream signaling. Altogether, TALEN-based HPV editing increases apoptosis, reduces viral replication and viral load, eliminates HPV and inhibits tumor cell proliferation of HPV-driven cancer cells. HPV16 E6 is an oncogene vital to viral function and HPV infection, and promotes carcinogenesis.