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Synthetic hTERT DNA Vaccine INO-1400

National Cancer Institute

Source

National Cancer Institute. *Synthetic hTERT DNA Vaccine INO-1400*. NCI Thesaurus. Code C120118.

A DNA vaccine consisting of a plasmid encoding the full-length sequence of the tumor-associated antigen (TAA) human telomerase reverse transcriptase (hTERT), which is the catalytic subunit of human telomerase and synthesizes telomeric DNA at the chromosome ends, containing two immunogenic mutations, with potential immunostimulating and antineoplastic activities. Upon intradermal vaccination of the hTERT encoding DNA vaccine INO-1400 in combination with electroporation, hTERT protein is expressed and activates the immune system to mount a cytotoxic T-cell (CTL) response against telomerase-expressing tumor cells, which may result in tumor cell death. Telomerase prolongs the functional lifespan of cells via the restoration and maintenance of telomere length. Abnormally activated in tumorigenesis, telomerase is expressed in the majority of human cancer cells, but its expression is low or non-existent in normal cells.