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KLH/NY-ESO-1/MART-1 Peptide-pulsed Dendritic Cell Vaccine

National Cancer Institute

Source

National Cancer Institute. *KLH/NY-ESO-1/MART-1 Peptide-pulsed Dendritic Cell Vaccine*.
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A cell-based cancer vaccine composed dendritic cells (DC) that were matured in the presence of a synthetic complex comprised of polyinosinic-polycytidylic acid, poly-L-lysine double-stranded RNA, and carboxymethylcellulose (poly-ICLC), and then pulsed with peptides derived from the tumor-associated antigens (TAAs) cancer/testis antigen NY-ESO-1 and melanoma antigen recognized by T-cells (MART-1/Melan-A), which are linked to the immunostimulant and carrier protein keyhole limpet hemocyanin (KLH), with potential immunostimulatory and antineoplastic activities. Upon intradermal administration, the KLH/NY-ESO-1/MART-1 peptide-pulsed DC vaccine stimulates the immune system to mount an anti-tumor cytotoxic T-lymphocyte (CTL) response against NY-ESO-1/MART-1-expressing tumor cells, which may result in tumor cell lysis. NY-ESO-1 is expressed both in normal testes and on the surfaces of various tumor cells. MART-1 is expressed by melanoma cells. The adjuvant poly-ICLC, a ligand for toll-like receptor-3 (TLR-3), induces the release of cytokines that may help boost the immune response against the TAAs. KLH boosts the immune response against the TAA-expressing tumor cells.