HAAH Lambda phage Vaccine SNS-301

National Cancer Institute

Source

National Cancer Institute. HAAH Lambda phage Vaccine SNS-301. NCI Thesaurus. Code C148522.

A nanoparticle-based cancer vaccine composed of a neutralized bacteriophage Lambda construct that is genetically engineered to contain peptide fragments of human aspartyl/asparaginyl beta-hydroxylase (HAAH; ASPH) on its surface and are fused to the C-terminus of the head protein of phage lambda gpD, with potential immunostimulating and antineoplastic activities. HAAH lambda phage vaccine SNS-301 also contains DNA fragments representing the phage CpG motif that activate the MHC class II pathway. Upon intradermal administration of the HAAH lambda phage vaccine SNS-301, the bacteriophage exposes the immune system to HAAH, producing a HAAH-specific antibody response, and may activate the immune system to induce a cytotoxic T-lymphocyte (CTL)-mediated immune response against HAAH-expressing tumor cells. HAAH is a transmembrane protein and highly conserved enzyme that catalyzes the hydroxylation of aspartyl and asparaginyl residues in epidermal growth factor-like domains of substrate proteins. HAAH is normally expressed in fetal development and is upregulated in a variety of cancer cell types, while its expression is nearly absent in healthy, normal cells. HAAH plays a key role in cancer cell growth, cell motility and invasiveness. Its expression is associated with a poor prognosis.