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Autologous Prostate Cancer Antigen-expressing Dendritic Cell Vaccine BPX-101

National Cancer Institute

Source

National Cancer Institute. *Autologous Prostate Cancer Antigen-expressing Dendritic Cell Vaccine BPX-101*. NCI Thesaurus. Code C82361.

A genetically-modified autologous dendritic cell-based vaccine expressing a drug-inducible costimulatory CD40 receptor (iCD40) with potential immunomodulating and antineoplastic activities. Autologous dendritic cells (DCs) are genetically modified to express the iCD40 receptor and are pulsed with the tumor antigen prostate-specific membrane antigen (PSMA). Upon intradermal administration, these DCs accumulate in local draining lymph nodes. Twenty-four hours after vaccination, the dimerizer agent AP1903 is administered; AP1903 binds to and activates iCD40 receptors presented on DC surfaces, thus activating the DCs and stimulating a cytotoxic T-lymphocyte (CTL) response against host tumor cells that express PSMA. This delayed activation strategy optimizes DC accumulation in local draining lymph nodes prior to DC activation. iCD40 contains a membrane-localized cytoplasmic CD40 domain fused to a drug-binding domain.