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HSV-TK-Transduced Donor Lymphocytes

National Cancer Institute

Source

National Cancer Institute. *HSV-TK-Transduced Donor Lymphocytes*. NCI Thesaurus. Code C67047.

A preparation of donor lymphocytes transduced with the suicide gene herpes simplex virus thymidine kinase (HSV-TK) with potential immunomodulating activity. Administration of HSV-TK-transduced lymphocytes after T cell-depleted allogeneic stem cell transplantation allows an early controllable immune reconstitution, which takes advantage of the antitumor effect of donor lymphocytes and helps to mitigate the risk of post-transplant opportunistic infection. To control graft-versus-host disease (GvHD) due to donor lymphocyte infusion, HSV-TK-transduced donor lymphocytes are selectively eliminated by administration of the antiviral agent ganciclovir. Ganciclovir, a prodrug, is readily phosphorylated by the suicide gene HSV-TK within HSV-TK-transduced lymphocytes to its monophosphate form and, subsequently, converted into its active triphosphate form, which specifically kills HSV-TK-transduced donor lymphocytes.