

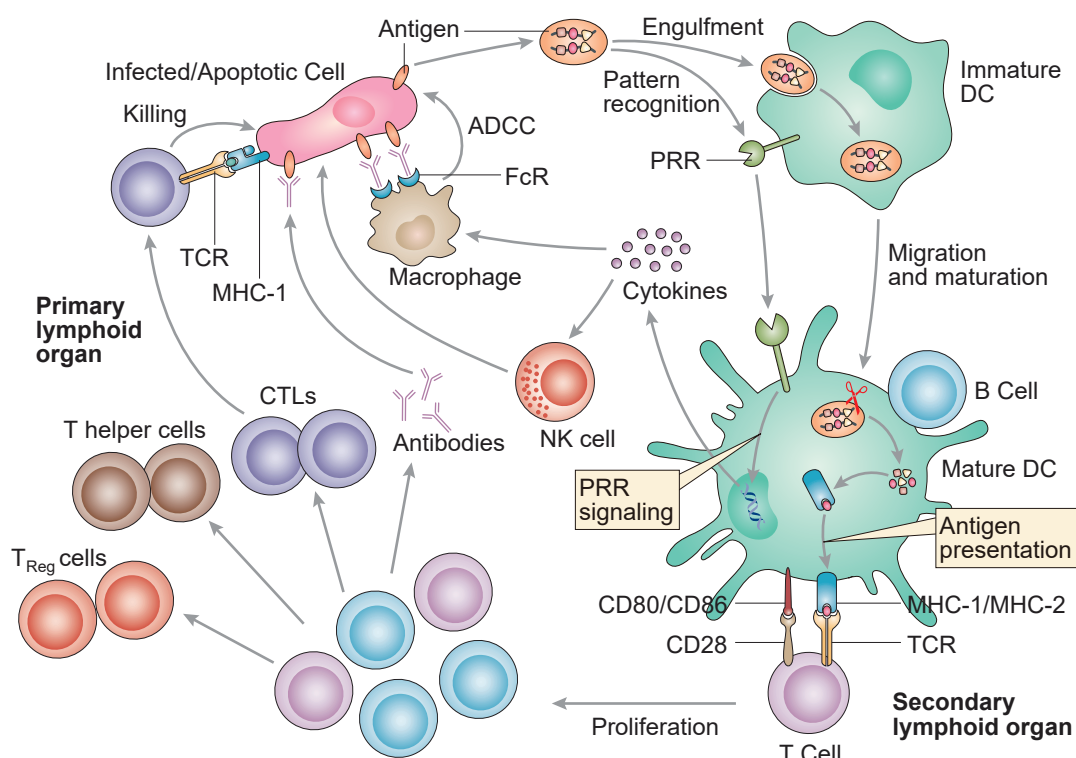
Antigens present in the infected or apoptotic cells are engulfed and cleaved by dendritic cells (DCs). The resulting antigen peptides are assembled into the cellular surface together with major histocompatibility complex (MHC). With the help of costimulatory molecules, the antigen-MHC complex is recognized by the T cell receptors (TCRs) and B cell receptors (BCRs), activating the differentiation and proliferation of T cells and the antibody expression of B cells. On the other hand, the endogenous and exogenous antigen can be recognized by the pattern recognition receptor (PRR) on the surface of DCs, resulting in the activation of the expression of cytokines, which participate in the cell killing of natural killer (NK) cells and macrophages. In these processes, immature DCs migrate into the second lymphoid organs and mature.

Autologous and allogeneic DC adoptive transfer therapies have been developed. These DCs are usually treated as vaccine, owing to their antigen-presenting function. Monocytes of patients are isolated by pheresis and induced into immature DCs with cytokines. Antigens in diverse formats can be chosen to stimulate the DC maturation. Finally, the mature antigen-presenting DCs are vaccinated to the patient.

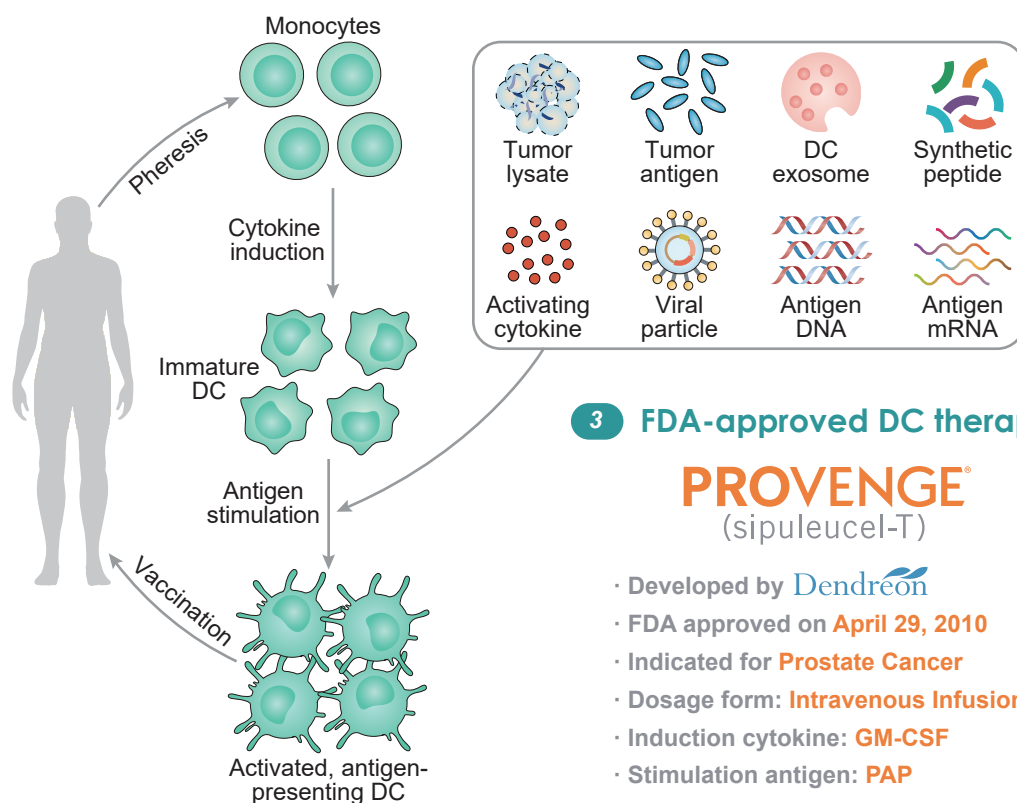
The first and only approved DC therapy is Provenge®, designed for the treatment of prostate cancer. It was developed by Dendreon utilizing recombinant prostatic acid phosphatase (PAP), a unique antigen of prostate cancer.

Creative Biolabs
Cellular Therapy
Solutions

1 Functional roles of dendritic cells



2 Adoptive transfer of dendritic cells — DC vaccine



3 FDA-approved DC therapy

PROVENGE®
(sipuleucel-T)

- Developed by **Dendreon**
- FDA approved on **April 29, 2010**
- Indicated for **Prostate Cancer**
- Dosage form: **Intravenous Infusion**
- Induction cytokine: **GM-CSF**
- Stimulation antigen: **PAP**

WHAT WE DO:

DC Vaccine Development with All Formats of Stimulation Antigen:

- Tumor Lysate
- Antigen Protein/Peptide
- Exosome
- Cytokine
- Viral Particle
- Antigen mRNA/DNA

Other Immunocytotherapy Development Services & Products:

- CART-T/TCR-T
- Oncolytic Virus
- TCR-Like Antibody
- Bispecific TCR
- Development Kits
- Vector System