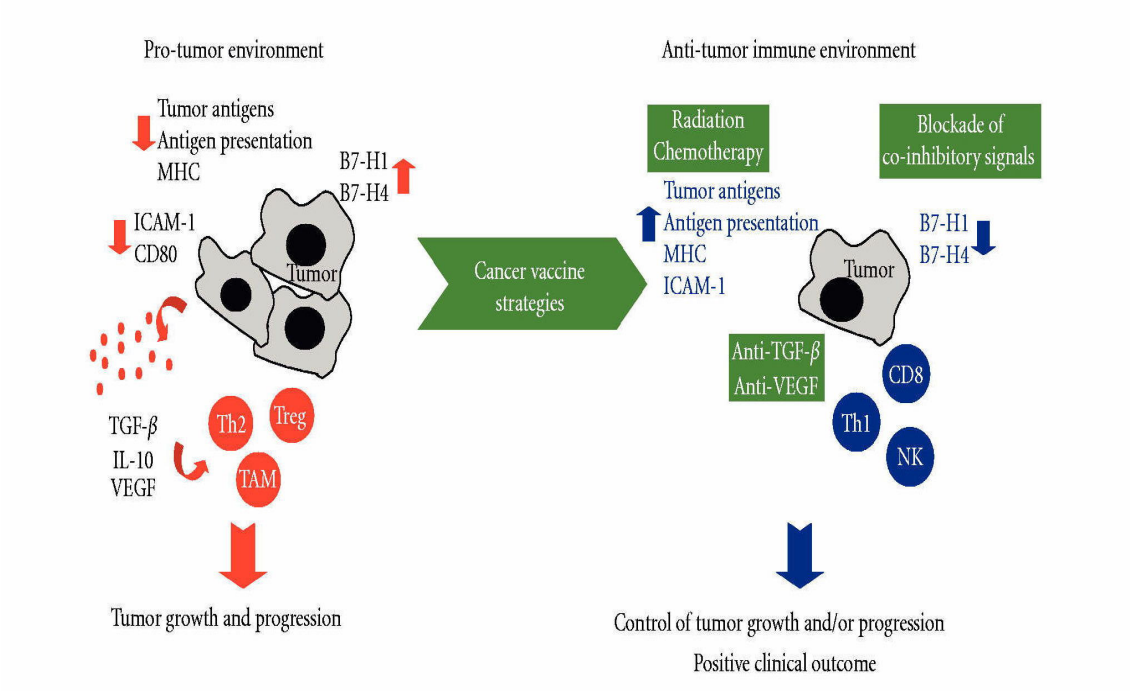
Cancer Vaccines



[1]

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Cancer vaccines are medicines that belong to a class of substances known as Biological response modifiers. Biological response modifiers work by stimulating or restoring the immune system's ability to fight infections and disease.

The term *cancer vaccine* refers to a vaccine that prevents infections with cancer causing viruses, treats existing cancer or prevents the development of cancer in certain high risk individuals.

There are two broad types of cancer vaccines:

Preventive (or prophylactic) vaccines, which are intended to prevent cancer from developing in healthy people;

Treatment (or therapeutic) vaccines, which are intended to treat an existing cancer by strengthening the body's natural defenses against the cancer.

Moreover, there are two major categories that cancer vaccines fit into:

Specific Cancer Vaccines: As the name indicates they treat specific type of cancers.

Universal Cancer Vaccines: They fight cancer cells regardless of cancer type.

The following list includes cancer vaccines being developed:

1. Antigen vaccines
2. Tumour cell vaccines
3. Anti-Idiotype antibody-based vaccines
4. Dendritic cell vaccines
5. DNA vaccines
6. Viral-vector based vaccines[2]

The U.S. Food and Drug Administration (FDA) has approved two types of vaccines to prevent cancer: vaccines against the hepatitis B virus, which can cause liver cancer, and vaccines against human papillomavirus types 16 and 18, which are responsible for about 70 percent of cervical cancer cases.

The FDA has also approved one cancer treatment vaccine, Sipuleucel-T for some cases with metastatic prostate cancer.

Active clinical trials of **cancer preventive vaccines** include cervical cancer and solid tumors.

Active clinical trials of **cancer treatment vaccines** include**:** bladder cancer, brain tumors, breast cancer, cervical cancer, Hodgkin lymphoma, kidney cancer, leukemia, lung cancer, melanoma, multiple myeloma, non-Hodgkin lymphoma, pancreatic cancer, prostate cancer, solid tumors.[3]

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