SAVING LIVES USING CELL BASED THERAPEUTICS

Biomac

CURE BEYOND HOPE

Biomac Life Sciences is a translational research oriented biotech start-up company with a primary focus on cell-based therapeutic technologies for unmet medical needs.

IMMUNOTHERAPY

GENE-EDITED CELL THERAPY

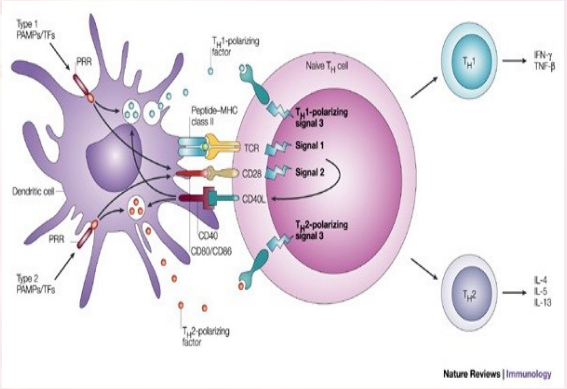
Our focused areas

IMMUNOTHERAPY

Immunotherapy is a novel mode of anti-cancer therapy, where the anti-cancer effect is mediated through patients own immune cells to fight cancer cells. It is a rapidly advancing field of translational science and it has been recognized as the 'Top Breakthrough of the Year 2013' by the journal "Science". Dr Steinmann, Dr Alison & Dr Horijo were awarded Nobel Prize for their ground breaking discoveries in the field of immunotherapy. There are different modes of Immunotherapy to mediate the immune cells to kill the cancer cells and it could be either cell based or molecule based. Cell based immunotherapy utilizes activated immune cells including dendritic cells,, natural killer cells, and T-cells for the killing of cancer cells.

DendroVac-CT

DendroVac-CT is a novel, personalized, autologous dendritic cell based cellular immunotherapy for the treatment of cancers. Dendritic cells are the most potent antigen presenting cells in human and animals. They play important role in recognizing the foreign antigens to fight and eliminate the invading microbes. They execute this function indirectly through the T cells by presenting the antigens to them and acquiring specificity to them through T cell receptor rearrangement.

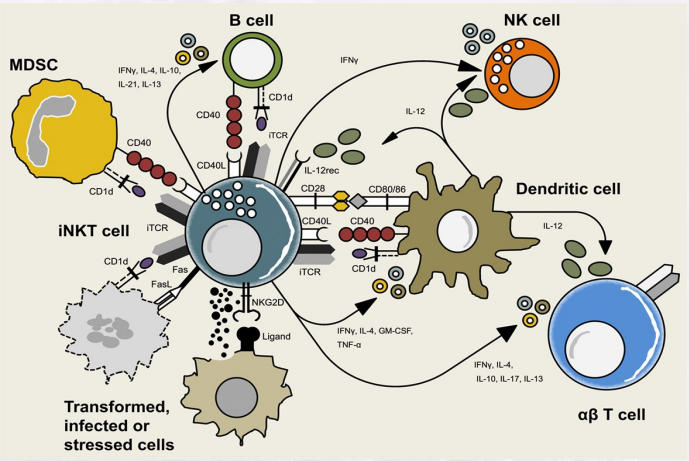


By this way, one dendritic cell can generate thousands of antigen specific T cells, which can kill millions of cancer cells. Dendritic cells can truly unleash the potential of T cells to kill the cancer cells. Hundreds of clinical trials have been conducted on dendritic cell therapy for the treatment of cancer and several clinical trials are on-going.

Dendritic cell therapy is a mode of cellular therapy using activated autologous dendritic cells to treat cancer. Monocyte-derived dendritic cells are the most common type of dendritic cells used for this purpose. In this process, the blood monocytes are isolated from the blood, differentiated into immature dendritic cells, activated using various activating factors in the presence or absence of tumor antigens. Upon injection of these differentiated and activated dendritic cells back into the same patient, a potent T cell mediated immune response against the cancer cells in induced, which results in profound killing of cancer cells.

ImmunoVac-CT

ImmunoVac-CT is a novel multiple cell immunotherapy platform for achieving most potent anti-cancer effect against solid tumors. It has different cellular components including activated NK cells and activated T cells. NK cells are lymphocytes of the innate immune system. They have cytotoxic ability to kill tumor cells. Adoptively transferred ex vivo expanded activated autologous NK cells have been shown to improve clinical responses in patients against different cancers.



T cells are a specialized type of lymphocyte having T-cell receptor (TCR) on their surface. They have ability to recognize cancer cells and kill them. There are two types of T cells, αβ T cells and γδ T cells. The T cell based cancer therapy relies upon either in vivo activation and adoptive transfer of the autologous T cells. T cells are the most abundant cells present in the human peripheral blood. Activating them and expanding them would be a great advantage to kill the cancer cells in a very specific manner.

BioCAR

BioCAR is an engineered T cell therapy platform using chimeric antigen receptor (CAR) T cells. CAR T cell therapy is the most promising therapy for treating certain types of Lymphoma and leukaemia. It is major breakthrough in curing cancers and it is the first engineered living cell therapy recognized as drug. In CAR T cell therapy, blood is taken from a patient and sent to a lab where the T cells are separated. These T cells are then modified to express a specific receptor that will allow the T cell to find and kill the cancer cell. These CAR T cells are then multiplied in the lab and eventually given back to the patient. The CAR on the T cells mediate targeted killing of cancer cells.

GENE-EDITED CELL THERAPY

We plan to develop multiple products using Crisper-Cas9 technology for treating cancers and genetic disorders. Gene-edited adult hematopoietic stem cells for treating Thalassemia and Sickle cell disease, gene edited allogenic CAR T cells for treating different cancers, and gene edited cells for treating monogenic genetic disorders are in our priority.

ThalaGenX is a progenitor cell engineered cell therapy for treating beta Thalassemia major, which is a genetic disorder caused by errors in the genes for haemoglobin.

AlloCar is a novel gene-edited allogenic T cells therapy for treating specific type of lymphoma and leukemia. It will be an “off the shelf product’ that could be used on any patient.

OUR VISION

To bring evidence based cellular therapeutics in clinics

&

To cure diseases or medical conditions incurable with conventional therapies

Contact us

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OUR MISSION

To help people with advanced cancers or life-threatening genetic disorders by bringing a cure or improve the quality of life using cell based therapeutic technologies developed through high quality scientific research.