Hon’ble Prime Minister Shri. Narendra Modi gifts three pathbreaking innovations, QSIP: India’s own quantum security chip; 25-qubit QPU: India’s first quantum computing chip, powering the future of computation and CAR-T Cell Therapy: India’s 1st indigenous cancer cell therapy developed by Indian innovators with the support of the Ministry of Science and Technology

CAR-T Cell Therapy: India’s 1st indigenous cancer cell therapy by ImmunoACT was supported by DBT and BIRAC

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Hon’ble Prime Minister Shri. Narendra Modi gifted to the Nation three path breaking innovations - QSIP: India’s own quantum security chip; 25-qubit QPU: India’s first quantum computing chip, powering the future of computation and CAR-T Cell Therapy: India’s 1st indigenous cancer cell therapy developed by Indian Innovators during the ongoing Emerging Science, Technology & Innovation Conclave ESTIC2025. Among them was NexCAR19, the world’s first humanised CAR-T therapy developed in India by ImmunoACT - a groundbreaking innovation truly “Made in India, for the world. This innovation was supported by DBT and BIRAC

The Chimeric Antigen Receptor T-cell (CAR-T) therapy has emerged as a breakthrough in cancer treatment. Clinical trials conducted globally have shown promising results in end stage patients, especially in patients suffering from Acute Lymphocytic Leukemia.

NexCAR19, India’ first living drug, has made gene therapies both affordable and accessible without compromising scientific rigour or patient safety.

ImmunoACT, is a IIT Bombay spin-off, received support from the BioNest initiative of the Biotechnology Industry Research Assistance Council (BIRAC), through funding, mentorship and resources while the start-up was incubated at Society of Innovation and Entrepreneurship (SINE) a Technology Business incubator.

In the year 2021, for Lentivirus manufacturing and clinical trial of India's first CAR-T at ACTREC center at Tata Memorial Hospital, TMC-IIT Bombay team were partially supported by DBT and BIRAC, through the National Biopharma Mission for the NEXCAR-19 trial in the pediatric patients which is ongoing at Tata Memorial Centre, with ImmnoAct as the manufacturing partner.

Recently, DBT via the Biomanufacturing initiative under the BioE3 Policy gave funding to ImmunoAct for setting up a 200L GMP lentiviral vector and plasmid platforms to scale up the production and also to make this new therapeutic modality more affordable. This platform will likely incorporate advanced bioreactor technologies to facilitate high-density cell growth and continuous production and enable higher yields and better performance of lentiviral vectors. The GMP grade gene delivery vector can help at least 1000 patients per year for cell and gene therapy.

DBT is also promoting promotes early and late translational research to develop novel & indigenous CAR-T based therapeutics to combat various cancers by supporting interdisciplinary teams to venture into immunotherapeutic solutions for broader spectrum of cancers including both liquid and solid cancers and also ways to overcome the associated toxicities. This includes cancers like Multiple myeloma (MM), Acute Lymphocytic Leukemia, refractory or relapsed B cell Acute Lymphoblastic Leukemia, glioblastoma etc.

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