

“TDB-DST supports Indigenous CAR-NK Cell Therapy Platform for Oncology and Leishmaniasis”

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The Technology Development Board (TDB), Department of Science & Technology, Government of India, has extended financial assistance to M/s East Ocyon Bio Private Limited, Gurgaon for its project titled “*CAR-NK based Cell Therapy Development and Clinical Trials for Difficult-to-treat Tumors and Leishmaniasis.*” The project seeks to establish a first-in-India, platform-based ecosystem for off-the-shelf CAR-NK cell therapies targeting resistant solid tumors and neglected infectious diseases, thereby strengthening India’s capabilities in advanced immunotherapy and biotherapeutics manufacturing.

CAR-NK (Chimeric Antigen Receptor–Natural Killer) cell therapies are emerging as a scalable and potentially safer alternative to conventional autologous CAR-T therapies. These platforms utilize healthy donor to isolate and expand NK cells which are then engineered to express CAR constructs against disease-specific targets. Unlike patient-specific CAR-T therapies, CAR-NK therapies offer immediate availability, simplified manufacturing logistics, lower risk of graft-versus-host disease (GvHD), and a favourable safety profile with reduced incidence of cytokine release syndrome (CRS) and neurotoxicity. NK cells also possess intrinsic anti-tumor and immunomodulatory properties, including the ability to target MHC-I deficient tumors.

Under the project, the company proposes to develop and commercialize:

1. Anti-PD-L1 CAR-NK cell therapy for multiple resistant solid tumors; and
2. CAR-NK therapy targeting Leishmaniasis, representing a novel immunotherapeutic strategy for a neglected tropical disease of significant public health relevance in India.

The technology platform, developed entirely in-house, focused on allogeneic, off-the-shelf CAR-NK and CAR- $\gamma\delta$ T cell therapies derived from healthy donors, engineered in bulk, cryopreserved under GMP-adaptable systems, and administered without patient matching—enabling scalability, cost-effectiveness, and rapid deployment. The lead innovation integrates a PD-L1-targeting CAR construct into NK cells using the gamma-retroviral platform, ensuring high expression efficiency and sustained functional persistence.

Speaking on the occasion, **Sh. Rajesh Kumar Pathak, Secretary, TDB**, stated that the Board’s support reflects its commitment to nurturing high-impact, frontier technologies that address unmet medical needs while building indigenous manufacturing capabilities. He emphasized that enabling advanced cell therapy platforms within the country will significantly reduce reliance on imported therapies and position India as a competitive player in next-generation immunotherapies.

Dr. Renu & Dr. Dinesh Kundu, Co-founders of East Ocyon Bio Private Limited expressed that the support from TDB will accelerate clinical translation of the company’s CAR-NK platform and help bridge the gap between laboratory innovation and patient access. They noted that the development of an indigenous,

scalable, and affordable cell therapy platform has the potential to transform treatment paradigms for both oncology and infectious diseases in India and beyond.

The project is expected to contribute to strengthening India's bio-innovation ecosystem, enhancing technology self-reliance, and advancing affordable access to cutting-edge therapies in alignment with the vision of Aatmanirbhar Bharat.



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