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Innovations in CAR-T cell cancer gene therapy manufacturing to make CAR-T cell therapy affordable and accessible

The Significance: CAR-T cell gene therapy has been heralded as a “cure” for cancer. The prospects for CAR-T cell therapy technology are unprecedented- on one end lies its targeted specificity in killing cancer cells and, on the other hand its great potential to treat not only hematological malignancies but solid tumors and other diseases. However, CAR-T therapy is exorbitantly expensive – up to half a million dollars per patient. Hence, it is not affordable or accessible for most cancer patients in US or in developing countries. Since the autologous CAR-T cell therapy is a personalized therapy, it is manufactured for only one patient at a time. Hence, the manufacturing processes are protracted (four weeks), inefficient, complex, tedious, inconsistent, and cost- prohibitive. MedTherapy Biotech. was founded by cancer patients, advocates, scientists, and oncologists to make the CAR-T manufacturing processes more efficient leading to cost reductions and thus greater affordability of this therapy. Our innovations significantly innovate various steps throughout the CAR-T cell therapy manufacturing cycle in order to dramatically reduce the Cost of Goods & Services (COGS). Greater efficiency also lends itself to scale up of manufacturing capacity to address the current severe manufacturing shortage. Based upon our results, our innovative CAR-T cell manufacturing cycle will lead to at least 25% reduction in manufacturing time resulting in at least a 50% reduction in manufacturing costs. There is a substantial unmet need to innovate the CAR-T cell manufacturing processes by making them more efficient and less time- consuming, thus leading to cost-savings and greater affordability to accomplish our mission to make CAR-T cell gene therapy affordable and accessible globally.

Keywords: CAR-T cell therapy, cancer gene therapy

Biography:

Bikash Verma, MD, DVM, is Chief Executive Officer & Chief Medical Officer at MedTherapy working on immunotherapy of cancer. Dr. Verma's focus has been upon prevention, diagnosis, and treatment of cancer. As a physician-scientist, he worked at Harvard Medical School as medical director and faculty. Subsequently, he worked in clinical research and development at Novartis, GSK, Celyad and Aurora as medical director and CMO. He is specialized in immunology, immuno- oncology and preventive medicine which he accomplished through his post-doctoral, doctoral, and masters degrees and fellowships completed at University of Massachusetts and affiliated hospitals, University of Illinois, S Illinois University, Tufts University.