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# Tang Prize Honours Three Cellular Immunotherapy Pioneers

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**The 2026 Biopharmaceutical Science award recognises work that helped establish TIL and CAR-T therapies as major cancer treatment platforms.**




The Tang Prize Foundation has awarded the 2026 Tang Prize in Biopharmaceutical Science to three pioneers of cellular immunotherapy: Steven A. Rosenberg, Michel Sadelain and Carl H. June.

The three scientists were named joint laureates for their contributions to the discovery and development of tumour-infiltrating lymphocyte therapy and chimeric antigen receptor T-cell therapy. Their work helped move cellular immunotherapy from experimental cancer research into clinical treatment, particularly for patients with blood cancers and selected solid tumours.

This is relevant because cellular immunotherapy has become one of the most important advances in oncology over the past decade. Instead of relying only on external drugs to attack cancer, these therapies use a patient's own immune cells, or engineered immune cells, to recognise and destroy tumour cells.

CAR-T therapy has had a particularly strong impact in recurrent or refractory blood cancers. Since the first U.S. FDA approval in 2017, CAR-T therapies have benefited more than 30,000 patients with blood cancers worldwide, creating a new treatment route for patients who previously had limited options.

Tumour-infiltrating lymphocyte therapy has also expanded the role of cellular immunotherapy in solid tumours, especially metastatic melanoma. While solid tumour cell therapy remains more difficult than blood cancer applications, TIL development has shown that patient-derived immune cells can be harnessed against tumour biology in selected settings.

Steven A. Rosenberg, widely known for his work in cancer immunotherapy, helped build the clinical framework for adoptive cell therapy. His research showed that high-dose interleukin-2 could stimulate T-cell proliferation and enhance antitumour activity, leading to tumour regression in some patients with metastatic disease. He also demonstrated that tumour-infiltrating lymphocytes could induce regression in metastatic melanoma.

Rosenberg's work also contributed to the early clinical use of gene transfer in humans. In the 1990s, he received the first regulatory approval to introduce foreign genes into humans, a milestone that helped establish the clinical foundation for later cellular and gene-based therapies.

Michel Sadelain and Carl H. June were recognised for their central roles in CAR-T development. Sadelain's work on adding the CD28 co-stimulatory domain to the CD3? chain helped establish the core CAR-T architecture that has become a foundation for later approved CAR-T therapies. He also identified CD19 as an important target for B-cell malignancies

and showed that CD19 CAR-T cells could treat cancer in preclinical models.

June’s work helped demonstrate the importance of CD28 co-stimulation for T-cell activation. His use of anti-CD3 and anti-CD28 bead expansion became a key manufacturing method for CAR-T cells. His collaboration with Novartis later contributed to Kymriah becoming the first FDA-approved CAR-T therapy in 2017.

The award also reflects how cellular immunotherapy is continuing to evolve. Recent advances include CRISPR-Cas9-based cell engineering, exploration of CAR-T therapy in autoimmune disease such as systemic lupus erythematosus, and research into broader applications including cardiac injury repair and cellular senescence.

For the biopharmaceutical industry, the significance of the award goes beyond individual recognition. It highlights how long-term academic and translational research can create entirely new therapeutic categories, manufacturing systems and commercial models.

However, challenges remain, as CAR-T and TIL therapies are complex to manufacture, expensive to deliver and dependent on specialised treatment centres. Patient selection, toxicity management, supply chain timing, reimbursement and long-term durability remain important considerations as cell therapies expand into more indications.

The development of cellular immunotherapy also demonstrates the growing convergence of oncology, immunology, gene engineering and advanced manufacturing. As the field moves toward allogeneic platforms, improved tumour targeting and broader disease applications, the early work recognised by the Tang Prize remains central to the next phase of cell therapy innovation.

The 2026 award positions cellular immunotherapy not only as a scientific achievement, but as a continuing platform for biopharmaceutical growth. The next industry challenge will be making these living therapies more scalable, accessible and effective across wider patient populations.