






Professional Certificate in Principles & Practice of Cell Therapy with Emphasis on CAR-T



There has been a growing interest in cell therapy over the last decade where research and innovations delved deeper into discovering the true potential of cell therapy. A prominent advantage of cell therapy is its ability to treat patients with life threatening illness such as cancer.

Led by recent launches of cell therapy products such as the Bristol Myers Squibb's Breyanzi and Novartis' large-scale manufacturing of Kymriah, the industry has seen accelerated growth over the past few years. The field of cell therapy manufacturing presents high-value opportunities for Singapore and its workforce.

This professional certificate aims to provide a strong foundation for learners to develop their knowledge and expertise in the exciting field of cell therapy and gain competencies in the following areas.

-  Process of CAR-T cell treatment and its key steps
-  Regulation of CAR-T cell treatment and implications on the practice of cell therapy
-  Quality control and assurance aspects of manufacturing and application of cell-based therapeutics to patients
-  Manufacturing of CAR-T cell for cell therapy treatments
-  Considerations involved in cell therapy clinical research

Programme Structure

2nd Intake

- 16-week programme
- Wednesday evenings, 7-9pm SGT
- Online live lessons and asynchronous lessons
- **Tentatively starting 8 Feb 2023**

Register by 20 Jan 2023 *

* Registration may close earlier if max capacity is reached before the deadline

Who Should Attend?

- **Biomedical graduates** who plan to switch to roles in regulation, business and quality management related to cell therapy
- **Healthcare professionals** who are keen to learn more about cell therapy and its applications

Image by NUS Dept of Microbiology and Immunology

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For enquiries, contact nusmedcet@nus.edu.sg

Please note that the scheduled course run will proceed only if the minimum class size is met.



Course Outline

Immunology Foundations

- Hematopoiesis
- Basic Immunology in Relation to Cell Therapy
- Overview of Immune Effector Cell (IEC)
- Immunosurveillance & Cancer Immunoediting (3Es) & Tumour Microenvironment
- **Continuous Assessment 1**

Delivery Strategies, CAR-T Biology and Research

- Different Modes of Gene Delivery
- Chimeric Antigen Receptor T-cells (CAR T-cells)
- Clinical Research in CAR-T
- **Continuous Assessment 2**

Practical Aspects of CAR-T

- Regulation for CAR-T
- Cell Processing
- Quality Management System in GMP
- Pharmacokinetics/ADME of cellular therapy products
- Pharmacodynamics and long-term pharmacovigilance of cellular therapy products

Clinical Aspects of CAR-T

- Pre-Clinical Work-Up of Patients on CAR-T
- CAR-T Therapy: Administration, Management and Complications
- Follow-up for Patients



Final Assessment

- Open-book MCQs



Pre-Requisite

- Bachelor's Degree in Science, Nursing, Biomedical Science, or related fields
- Other qualifications will be reviewed on a case-by-case basis



Candidature Period

- Maximum 5 months
- Receive a **'Professional Certificate in Principles & Practice of Cell Therapy with Emphasis on CAR-T'** upon completion within candidature period



Programme Fees

Original Fee ~~\$5,700~~

Discounted Fee **\$2,565***

- Enjoy **45% discount** for our upcoming run
- *In Singapore Dollars and excludes GST

Course fee payments received on 1 Jan 2023 onwards will be subjected to 8% GST



Career Prospects

Learners will be well equipped to perform the following job roles:

- Doctors and Nurses in roles related to Cell Therapy
- Biomedical Technologists in cell therapy GMP/GTP laboratories and pharmaceutical companies
- Manufacturing officers who are involved in contract development and manufacturing



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