Tumour immunology: An interconnection between cancer and the immune system

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Abstract

Apoptosis is the main culprit for several chronic diseases including cancer, a devastating disease. Cell division is a highly regulated process, abnormalities occur in cell division leads to uncontrolled abnormal cell growth causes innumerable types of cancers. The immune system plays a major role in eliminating the exogenous and endogenous antigens for the defence of the host. There is strong evidence that the immune system recognized the tumours and it can be destroyed by a process identified as immunosurveillance proposed by Burnet and Thomas. Some of the cancer cells secrete TGF-beta (Immunosuppressive factor), which diminishes T-cell response against cancer. There are several types of treatments to treat cancer following; chemotherapy, Hormonal therapy, Radiotherapy and Surgery. The study of the relationship between cancer and immunity is the foundation for immunotherapy aim is triggering the adaptive immune response to abolish tumours also preventing recurrence. Even though many hallmarks plays a pivotal role in tumorigenesis, "avoiding immune destruction" is an emerging one. Understanding of cellular and molecular requirements for tumour antigen- specific immune responses has favourable to the development of better immunotherapeutic strategies including Cancer vaccines or CAR T-cell therapy.

Biography

I am an adaptable and diligent recent postgraduate (7.2 CGPA) M.Sc. Biomedical Science, from Bharathidasan University, Tamil Nadu, India. During my academic career, I also managed to accrue nearly 6 months of work experience at ICMR-National Institute of Virology (NIV), Pune. I have worked on Maintenance of mammalian cell culture, Cloning techniques (Transformation and DNA isolation both plasmid &genomic DNA), RNA isolation from cultured cells, PCR & RT-PCR, and bioinformatics knowledge.

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