



RNA Transcription and splicing errors as a source of cancer Frameshift Neoantigens for Vaccines

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Abstract:

The success of checkpoint inhibitors in cancer therapy is largely attributed to activating the patient's immune response to their tumor's neoantigens arising from DNA mutations. This realization has motivated the interest in personal cancer vaccines based on sequencing the patient's tumor DNA to discover neoantigens. Here we propose an additional, unrecognized source of tumor neoantigens. We show that errors in transcription of microsatellites (MS) and mis-splicing of exons create highly immunogenic frameshift (FS) neoantigens in tumors. The sequence of these FS neoantigens are predictable, allowing creation of a peptide array representing all possible neoantigen FS peptides. This array can be used to detect the antibody response in a patient to the FS peptides



Biography:

Student of cellular and molecular biology, Medical researcher, International degree in genetic engineering, Participated in the 3rd international neuroinflammation congress and the 3rd international student festival of neuroscience organized by neuroscience department, mashhad university of medical science, Participated in the 3rd international biotechnology congress of Islamic republic of Iran, Participated in the 3rd international congress on biomedicine2019, Participated in the 8th International Conference on Women's Health, Tehran, Iran

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