基盤研セミナー

NIBIOHN

Modulating T Cell Immunity with Personalized Neo-Antigen Vaccines Against Tumors with Self-Assembling Chemically Programmable Polymers linked to a TLR 7/8 Agonist

日時：　平成29年11月8日（水）　午後4時～5時（開場3:50）
場所：　彩都バイオヒルズセンター　会議室AB
（茨木市彩都あさぎ7−7−18）

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講演要旨

Tumor specific T cells can mediate regression and cure of certain tumors. Advances in whole exome sequencing has identified mutated antigens termed neoantigens induced by tumors that are specific to the individual. Thus, inducing immune responses against tumor specific neoantigens through personalized therapeutic vaccination is a promising approach for treating all tumors. Accordingly, immunization of neoantigens administered as synthetic long peptides (SLP) plus Poly IC or RNA have been recently reported in human clinical trials. However, such delivery approaches are limited in the magnitude and breadth of CD8 T cell responses induced. Here, we developed a novel vaccine platform to enhance the breadth and magnitude of CD8 T cell responses by chemically coupling SLP to a synthetic polymer containing a toll-like receptor-7/8 agonist that self-assembles into nanoparticles (termed SPP-7/8a). To test the efficiency of the SPP-7/8a platform for inducing antigenic breadth, 173 transcribed non-synonymous single nucleotide variants were identified in a mouse melanoma tumor line (SB-3123). Mice were vaccinated twice with a random set of 96 SB-3123 neoantigens with SPP-7/8a. The binding affinity was predicted for each neoantigen using the Immune Epitope Database and Analysis Resource (IEDB.org) By stratifying the 96 neoantigens according to high affinity binders (Consensus < 0.5), 7/14 (50%) induced CD8 T cell responses. Additional studies will be shown how this SPP-7/8a vaccine mediates protection in mouse tumor models.

参加申込：不要(直接会場にお越し下さい。）　参加費：無料

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