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Integrated Cancer Center (MICC)
המרכז הבינתחומי לחקר סרטן ע"ש מוחס

Dwek Institute for Cancer Therapy Research

Department of Biological Regulation and Dwek Institute for Cancer Therapy Research

ZOOM ON CANCER

HYBRID LECTURE

Antibody-mediated immune responses in ovarian cancer patients

Prof. Ziv Shulman
Department of Immunology
Faculty of Biology

9th December Thursday 2021

14:00 Candiotty Auditorium

Light refreshments will be served from 13:45

The tumor microenvironment hosts antibody-secreting cells associated with a favorable prognosis in several types of cancer. Patient-derived antibodies hold diagnostic and therapeutic potential; yet, it remains unclear how antibodies gain autoreactivity and target tumors. We found that somatic hypermutations in the immunoglobulin encoding genes of intratumoral antibody-secreting cells promote antibody tumor-reactivity against surface autoantigens in high grade serous ovarian cancer (HGSOC) patients. Tumors from many types of cancer were frequently coated with IgGs, including HGSOC. Intratumoral antibody-secreting cells were both mutated and clonally expanded, and produced antibodies that targeted matrix degrading enzymes that are abundantly expressed on the tumor cell surface. Reversion of patient-derived monoclonal-antibodies to their germline configuration revealed two types of immunoglublin classes: one that depends on somatic hypermutations for tumor binding, and a second with germline-encoded autoreactivity. Thus, tumor-reactive autoantibodies are either naturally occurring or evolve through antigen-driven selection in patients. These findings highlight the origin and potential applicability of autoantibodies directed at surface antigens for tumor targeting in cancer patients.

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Host

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