

SiGN VIRTUAL SEMINAR



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Promoting innate immunity against cancers through antibody-mediated inhibition of MICA/B shedding

MICA and MICB, here abbreviated as MICA/B, are surface proteins upregulated by many human cancer cells in response to cellular stress pathways associated with malignant transformation. They serve as “danger signals” that alert the immune system, which recognizes MICA/B through the NKG2D receptor in natural killer (NK) cells and T cells. However, MICA/B are downregulated by a post-translational modification called proteolytic cleavage that enables effective escape from immunosurveillance. We developed the first-of-its-kind monoclonal antibody that binds MICA/B in the alpha-3 domain, which is where the cleavage is molecularly initiated, and inhibits MICA/B shedding by a variety of cancer cells. Our antibody, named as “7C6”, is extremely effective in promoting protective immunity against melanoma metastases and acute myeloid leukemia via cellular mechanisms involving NK cells and macrophages, respectively. 7C6 restores NKG2D recognition by protecting MICA/B from cleavage and simultaneously engages Fc receptors that induce NK cell effector functions, whereas in macrophages it functions via Fc receptors only. A clinical grade MICA/B antibody analog to 7C6 has now entered phase-I clinical trial phase by pharmaceutical company. Therefore, antibody-mediated inhibition of MICA/B shedding is a new immunotherapeutic opportunity that holds strong promise for cancers.



15th March 2022 (Tuesday)
9 AM – 10 AM (Singapore Time)
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*Seminar is
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