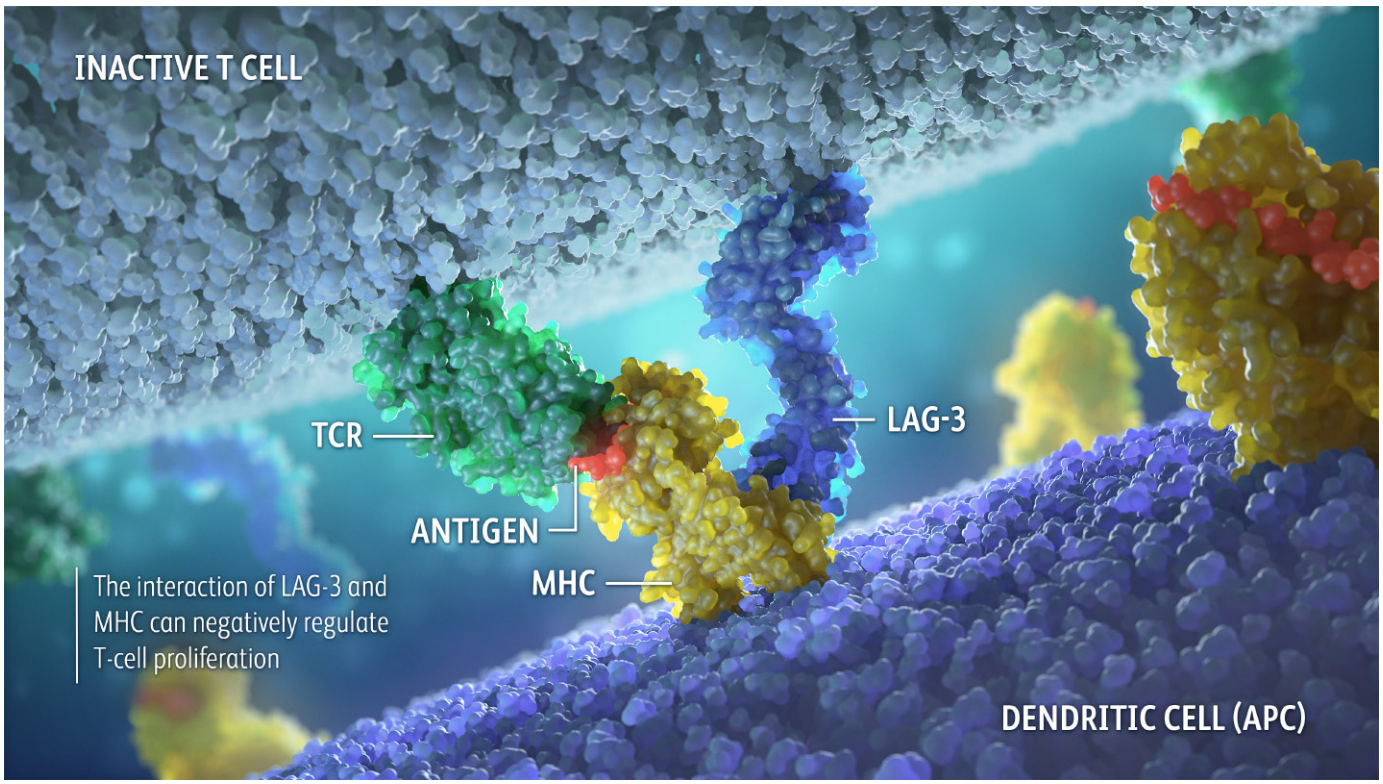
LAG-3: impairs T-cell function and can mark exhausted T cells

Role in normal cell

Lymphocyte-activation gene 3 (LAG-3) is an immune checkpoint receptor expressed on the surface of both activated cytotoxic T cells and regulatory T cells (Tregs).[1-3] MHC, which presents antigens to T cells, is one of the ligands for LAG-3.[1-4]



Role in cancer cell

Similar to the expression and function of PD-1, repeated exposure to tumor antigen causes an increase in the presence and activity of LAG-3, leading to T-cell exhaustion.[5,6] T cells co-expressing both LAG-3 and PD-1 may show an even greater degree of exhaustion compared with those expressing LAG-3 alone.[7]

Preclinical evidence

Research is ongoing to understand how dual inhibition of LAG-3 and other checkpoint pathways may synergistically increase T-cell antitumor activity compared with the inhibition of either pathway alone.

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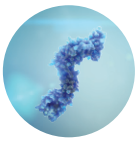

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Acronyms

APC=antigen-presenting cell; MHC=major histocompatibility complex; PD-1=programmed death receptor-1; TCR=T-cell receptor.

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