Crosstalk between STAT3 and immune cells during breast cancer progression

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Video Byte

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Abstract

Breast cancer is one of the most prevalent forms of cancer worldwide. Due to its complex pathology, breast cancer is often diagnosed late in its development—when it has already spread to other body parts. STAT3 is one protein known to play an important role in breast cancer, regulating gene expression within tumor cells to drive cancer progression, but growing evidence shows that STAT3 plays an equally important role outside of tumor cells—within the “tumor microenvironment”. Here, STAT3 suppresses immune defenses through interactions with various cells including myeloid-derived suppressor cells (MDSCs), macrophages, and dendritic cells (DCs). Interestingly, STAT3’s capacity to bypass these defenses relies on pathways for both immune suppression and activation. These findings make STAT3 an attractive target for anticancer therapies, which could help patients with breast cancer receive effective treatment as early as possible.