Regulation of efferocytosis as a novel cancer therapy

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Video Byte

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Abstract

Our bodies must undergo tissue self-renewal in order to remain healthy, and cell death is an important part of self-renewal. Apoptosis is a mechanism of programmed cell death that maintains homeostasis without inflammation. As dying cells begin to dismantle, they signal to phagocytes to engulf them, a process called efferocytosis. The balance between these “find-me,” “eat-me,” and “don’t-eat-me” signals is critical. Unfortunately, because efferocytosis prevents inflammatory responses, these signaling pathways are often hijacked by cancer cells to facilitate immune escape. Although traditional cancer therapies, such as chemotherapy and radiation, kill cancer cells directly, the resulting apoptosis can increase efferocytosis and suppress the immune response, allowing for progression of residual cancer. A new strategy is to combine traditional therapies with those that inhibit efferocytosis, killing tumor cells while blocking the pathways that allow them to proliferate. Although further studies are needed to fully understand the mechanisms involved and the drugs needed to target them, this strategy could enhance treatment efficacy and improve patient outcomes, giving renewed hope to those fighting cancer.