



2020 IMPACT CIRCLE

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Natural Killer cells; one treatment to prevent cancer and aging

Senescent cells are thought to drive aging. Innovative anti-aging interventions use senolytic drugs to kill senescent cells and consequently prevent aging and age-related disease. However, some senolytic drugs can also harm healthy non-senescent cells. Although this tradeoff is tolerable in disease, collateral damage on healthy cells potentially constrains the use of these drugs in the healthy aging population. In addition, not all senescent cells are bad; “good” senescent cells can promote cancer cell killing. Killing bad senescent cells without killing good senescent cells requires an intelligent design beyond what these current drugs can do.

We hypothesize that cells engineered to express receptors that are selective for bad senescent cells will provide improved treatment efficacy and safety over senolytic drugs and can double as an anti-cancer intervention.