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CANCER SECRETOME AND INFLAMMATION: THE BRIGHT AND THE DARK SIDES OF NF- κ B

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HIGHLIGHTS

- Chronic inflammation is now widely recognized as a hallmark of cancer.
- Both immune- and senescent-derived secretome is source of chronic inflammation in cancer.
- NF- κ B is the molecular hub linking inflammation and cancer.
- NF- κ B-regulated pro-inflammatory cancer secretome has both tumour-promoting and anti-tumour effects.

ABSTRACT

Tumour promoting inflammation is widely recognized as a hallmark of cancer. The source of this chronic inflammation in cancer has been ascribed to the progressive activation over time of immune cells, mostly of the innate arm of the immune system. However, recent evidence has shown that chronic inflammation may also derive, at least in part, from senescent cells. Hence, due to the prominent role of inflammation in cancer, the cancer secretome definition includes all the secretory factors ensuing from the crosstalk between the cancer cell and the tumour microenvironment. The mechanistic basis underlying the paracrine signalling between the cancer cell and the surrounding tumour microenvironment in malignancy have been widely investigated by using *in vivo* models of cancers, thus identifying the NF- κ B transcription factor as the molecular hub linking inflammation and cancer. In this review, we highlight the roles of NF- κ B in regulating the inflammation-derived secretome emanating from immune and senescent cells, with a special focus on the bright and the dark sides of their pro-inflammatory signalling on tumorigenesis.

KEYWORDS: Secretome, Inflammation, Senescence, SASP, NF- κ B, Immunity

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