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On the role of Cystatin C in cancer progression

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Abstract

Cystatin C (Cyst C) is an endogenous inhibitor of lysosomal cysteine proteinases, which has been shown to play a role in several normal and pathological processes. Interestingly, a growing number of experimental and clinical studies suggest that this inhibitor also appears to be implicated in the malignant progression of various human tumors. However, the role of Cyst C in malignant diseases is still controversial as these studies have highlighted that this protein may function either as tumor suppressor or tumour promoter. The specific mechanisms underlying these opposing effects at present remain murky and are the subject of many current investigations. On the other hand, a complete knowledge of these mechanisms is of clinical interest in order to develop new, effective antitumor treatments based on the appropriate use of natural and/or synthetic cysteine proteinase inhibitors. This paper discusses the current findings regarding the role of Cyst C in cancer progression and the clinical implications emerging from these studies.

Key Words: Cancer; Cathepsins; Cystatin C; Cysteine Proteinases; Metastasis; Proteinase Inhibitors

Conflict of interest: None