

Proteases as Targets in Anticancer Therapy Using Their Inhibitors

Syed Rakashanda and Shajrul Amin*

*Department of Biochemistry, University of Kashmir, Srinagar 190 006,
Jammu and Kashmir, India*

KEYWORDS Proteases. Protease Inhibitors. Antitumor. Oncogen

ABSTRACT Proteases, also known as proteolytic enzymes, are enzymes that catalyze the breakdown of proteins by hydrolysis of peptide bonds. Earlier proteases were considered as only protein degrading enzymes, however now dramatically the view has changed. Proteases are extremely important signalling molecules that are involved in numerous vital processes like apoptosis, cell growth and activation, adhesion, invasion, cell migration and metastasis, protein secretion, cellular interactions and signal transduction, phagocytosis and angiogenesis. Thus, show complete anticancer mechanism. And proteases from all six classes have been found to be involved in tumor growth and progression. Inhibitors of such proteases are emerging with promising therapeutic uses in the treatment of cancer. Protease inhibitor suppression of carcinogenesis is related to ability to effect the expression of certain oncogens and the levels of certain types of proteolytic activities. Protease inhibitors being found to be as special agents in anticancer therapy have been isolated from plants, bacteria and prepared synthetically. Under the same trend different protease inhibitors have been used and are being in clinical and pre-clinical stage. Thus, studying PIs as anticancer agents open a new field for treatment of cancer.