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CICK-Cystatin isolation and characterization from kidney

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Cystatin is virtually the most widely represented class of thiol proteinase inhibitor, ubiquitously distributed in plants and animals, and devoted to regulating degradation of both intracellular and extracellular proteins. In our study, a thiol proteinase inhibitor was isolated from buffalo kidney making use of ammonium sulphate precipitation and gel filtration chromatography on Sephacryl S-100HR column. The basis behind selecting this source for cystatin isolation is the growing number of kidney disorders in the current era. Purified inhibitor is homogeneous as it displayed a single band in gel electrophoresis both under reducing and non-reducing environment and is of 65KDa as revealed by gel filtration and SDS PAGE. Kinetic studies revealed the presence of reversible accompanied with competitive mode of inhibition; showing maximum efficacy against papain ($K_i=2.90 \times 10^{-4}$). It was maximally active at pH 8.0 and was stable for a period of 30, 60 and 90 days at 37, 4 and -20°C respectively. Immunological studies confirmed its purity of epitopes as a single precipitin line is obtained in immunodiffusion. N-terminal analysis revealed that it shared a good homology with mouse kidney cystatin as well as with Human Cys C and Cys E thereby advocating its use as a model for various human oriented studies which targets how the kidney cystatin level varies in accordance with various drugs that are currently being used as a target for variety of diseases. Further studies are taken into account in using this study as a model and treating various ailments related to kidney.

Biography

Mohd Anas Shamsi is a Research Fellow at the Department of Biochemistry, Aligarh Muslim University under the supervision of Prof. Bilqees Bano since 2014. He has published 6 papers in reputed journals of Protein Biochemistry and his work is primarily devoted to kidney mainly rat and buffalo kidney as these organisms are being used as model organisms for various studies related to humans. He completed his Bachelor's with an aggregate of 81% and his Master's with an aggregate of 75%. He is currently a BSR-JRF Fellow and also has qualified CSIR-NET and GATE. He has attended several reputed conference most recently being 4th Nano-today held in Dubai, UAE.

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