

## Functional characterization of extracellular matrix derived endogenous angioinhibitor molecule

Smita C. Pawar<sup>1,2,3</sup>, Chittibabu Guda<sup>3</sup> and Sudhakar A. Yakkanti<sup>1,4,5,6</sup>

<sup>1</sup>Cell Signaling Retinal & Tumor Angiogenesis Laboratory, Department of Genetics, Boys Town National Research Hospital, USA

<sup>2</sup>Center for Bioinformatics and Systems Biology, Dept. of Genetics, Cell Biology & Anatomy, University of Nebraska Medical Center, USA

<sup>3</sup>Department of Genetics, Osmania University, India

<sup>4</sup>Department of Genetics, Cell Biology and Anatomy, University of Nebraska Medical Center, USA

<sup>5</sup>Department of Biochemistry and Molecular Biology, University of Nebraska Medical Center, USA

<sup>6</sup>Department of Pharmacy, School of Pharmacy and Health Professions, Creighton University, USA

Hexastatin is a known endogenous angioinhibitor molecule derived from alpha6 chain non-collagenous (NC1) domain of Type IV collagen, where as its angioinhibitory mechanism(s) is not yet known clearly. Here in the study, we have cloned hexastatin in pET22b (+) vector and expressed in E. Coli. Soluble and biologically active hexastatin was purified using different affinity and size exclusion chromatographies and studied its pro-apoptotic activities in-vitro using endothelial cells. Our preliminary in-vitro studies demonstrate that hexastatin inhibiting VEGF mediated endothelial cell proliferation, migration and tube formation. In addition, we have identified that hexastatin promoting endothelial cell apoptosis by activating FasL and its mediated downstream apoptotic cascade activation.

### Biography

Dr. Smita C. Pawar Assistant Professor and former Head, Department of Genetics, Osmania University, Hyderabad, AP, India, has more than eight years of experience in research, teaching and University administration. She is the recipient of CSIR/NET/UGC-JRF (2003) fellowship from Government of India. She worked in a reputed national research ICMR Institute "National Institute of Nutrition" as Junior Research Fellow (2003-2004). She was awarded the DST-ITS grant to present a research article in an international conference "BDC 2010" - at Sydney, Australia. She has been awarded the BOYSCAST FELLOWSHIP by DST, Government of India for the year 2011-2012. She is currently Visiting Scientist at Department of Genetics, Cell Biology and Anatomy, University of Nebraska Medical Center, Omaha, NE, 68198, USA and Cell Signaling, Retinal and Angiogenesis Laboratory, Department of Genetics, Boys Town National Research Hospital, Omaha, NE 68131, USA. She is research supervisor for graduate and under graduate students at Osmania University and has two major ongoing research grants funded by UGC and DBT Government of India.