Regulation of angiogenesis by endogenous metabolite

Smita C Pawar
Osmania University, India

Choroidal neovascularisation (CNV) is the primary cause of blindness in a variety of common retinal diseases including retinopathy of prematurity, age related macular degeneration, proliferative diabetic retinopathy, among other vascular diseases. Angioinhibitory therapies are starting to give hopeful results in these ocular diseases. In this study the angioinhibitory activity of endogenous metabolite derived from type IV collagen was analyzed. Mouse choroidal endothelial cells (MCEC) treated with different doses of metabolite and performed in-vitro proliferation, migration and tube formation assays. Matrix metalloproteinase-2 (MMP-2) activation and MMP-2/metabolite complex formation were studied using different methods. Endogenous metabolite demonstrated anti-proliferative activity and inhibits MCEC migration, tube formation in-vitro. Endogenous metabolite binds pro-MMP-2 and inhibits its activation mediated by both membrane-type-1 MMP and 4-aminophenyl mercuric acetate (APMA) in-vitro. Angioinhibitory effects of metabolite were studied in mice model using LASER-induced CNV method.

Biography

Smita C Pawar, Assistant Professor, former Head, Department of Genetics, Osmania University, Hyderabad, India, has more than nine years of experience in teaching, research 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 has completed her post-doctoral training at University of Nebraska Medical Center, Omaha, NE USA and John Hopkins University, Baltimore, USA. She has published more than 14 research articles in reputed international journals and is currently a research supervisor guiding students for PhD and has two ongoing major research grants funded by UGC and DBT.

smita.prof@gmail.com