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Mechanism(s) in regulation of tumor angiogenesis and metastasis by endogenous metabolites

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Abstract

Many endogenous anti-cancer molecules (metabolites) which are released from extracellular matrix /Type IV collagen were identified as angioinhibitors of tumor growth. These endogenous metabolites bind to the cell surface integrins and transduce the signaling. Thus, cell surface integrins serve as transmembrane linkers between the extracellular matrix and cytoskeleton for outside-in signaling. Such endogenous metabolites generated by MMPs from the C- terminal non-collagenous domain of alpha3 and 6 of type IV collagen were identified as an inhibitor of angiogenesis, but their mediated angioinhibitory and ant-metastatic signaling mechanism(s) are not known yet. Our findings suggests that these metabolites interacting with different cell surface integrins and cross talking with other receptors and inhibiting tumor angiogenesis and tumor metastasis both *in-vitro* and *in-vivo*.

Biography

Sudhakar Akul Yakkanti is the Associate Director/Senior Scientist at Center for Cancer & Metabolism, Cell Signaling Laboratory, Bioscience Division, Stanford Research Institute (SRI) International, Menlo Park, California. In addition he is the President of OMICS Organization 2002 on words. Earlier he wasfounder Director of Cell Signaling, Retinal and Tumor Angiogenesis Laboratory at Boys Town National Research Hospital, Omaha, NE, USA (2004-2012). He did his postdoctoral training at Harvard Medical School, Boston, MA, USA (2003). He received President's fellowship (1992), GATE (1996) and CSIR (2007-2000) fellowships from Government of India. He received Mahindra & Mahindra Educational Award (2000) and Young Clinical Scientist Awards from Flight Attendant Medical Research Institute (FAMRI) in 2007 and 2010. He also received Bio-Bio Young Scientist Award from OMICS publishing group; Michael A. O'Connor Young Investigator Award; RO1 grant Award from NIH/NCI and Research Scholar Grant Award from ACS (2010). He is serving as AIBS/NIH-RO1 Grant reviewer for DT study section. He has published more than 40 research articles in several top journals including Science, Cancer Cell, JCI, Blood, PNAS, Gastroenterology, Cancer Research, JBC, IOVS etc. He is serving as an Editor-in-Chief, Executive Editor, Editor and Editorial board member of reputed journals and is serving as a reviewer for more than 26 scientific journals including JCI, Blood, Circulation, Circulation Research, Cancer research, Clinical Cancer research etc. He was honored by giving a position as Honorable gust, Keynote Speaker, Session Chair, Co-chair and organizing committee member for several national and international conferences.