OMICS Group Conferences
Accelerating Scientific Discovery

3rd World Congress on
Cancer Science & Therapy

October 21-23, 2013 DoubleTree by Hilton Hotel San Francisco Airport, USA

Unraveling the story about the possible backups when Estrogen Receptor goes deregulated in Breast Cancer

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Abstract

My lecture will address the importance of orphan Receptors related to Estrogen Receptors with special emphasis on Esrogen Related Receptor beta (ERRβ). Estrogen Related Receptors (ERRs) are a group of nuclear receptors (also called as orphan receptors) which are structurally and functionally related to Estrogen Receptors (ERs), but do not bind to Estrogen. Overexpression of ERRβ which also belongs to the above orphan receptor family, in breast cancer patients is correlated with better prognosis and longer relapse-free survival. Therefore we overexpressed ERRβ in MCF-7 breast cancer cells for exploring the consequences. Overexpressed ERRβ induced nuclear fragmentation and apoptosis in MCF-7 indicating its anti-proliferative ability. Apoptosis was mediated through β-catenin. ERRβ over expression is also directed towards down-regulation of major G1-S transition marker Cyclin D1. To sum up, our study provides concrete evidence in favor of ER co-regulator ERRβ as a potential tumor suppressor molecule which acts by down-regulating β-catenin up-regulation of E-cadherin. Our study provides novel insights that how the entire cascade of events leads towards blockage of G1/S transition and Epithelial to Mesenchymal Transition prior to metastasis in breast cancer cells and projects the critical role to ERRβ as a tumor suppressor in breast cancer.

Biography

Sandip K Mishra has been an active researcher in the field of epigenetics of breast cancer since his postdoctoral training in UT MD Anderson Cancer Center, Houston, TX. Before that his Doctoral thesis was on Molecular Gerontology. He served as a faculty in the Department of Neurosurgery, UT MD Anderson Cancer Center, Houston, TX before moving to a reputed National Institute under Department of Biotechnology, Govt. of India as a Senior Scientist. Now he is serving as a tenured Snr. Scientist equivalent to Professor and Principal Investigator of Cancer Biology Laboratory. He has published several papers in high impact peer reviewed journals. He is serving on the editorial boards for the Journal of Cancer Science and Research. He is also serving as the Associate Editor of World Journal of Cancer Research, He is an active member of AACR, USA. He has several grants from funding agencies of Govt.of India. Since he started his career in India towards the end of the year 2007, under his guidance one graduate student was already awarded Ph.D. degree. Six more graduate students are working for their Doctoral degrees under his guidance. Besides postdoctoral student, technicians and other project staffs are also working under him. Dr. Mishra has been honored with several awards including Amgen Award during his postdoctoral training in UT MDACC. In recent past his findings was accepted as late breaking abstract in AACR meeting.