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CAMPAIGN TO REDUCE PREVALENCE OF ANAEMIA IN EASTERN INDIA

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The estrogen receptor alpha (ER α) gene has been extensively studied in breast cancer, however, the function as well as regulation of its splice variants are poorly understood. During our study of HMGA1a (formerly termed HMGI), which is known as a DNA-binding transcription factor, we found it regulates alternative splicing of ER α pre-mRNA as a sequence-specific RNA-binding protein. We searched for HMGA1a RNA-binding sites we previously identified (1,2) and found one in ER α exon 1. HMGA1a binds to this sequence (detected by RNA-EMSA) that resulted in a splicing switch of two alternatively spliced isoforms, ER α 66 (full length) and ER α 46 (truncated). ER α 46 is known to inhibit AF-1 activity of ER α 66. Psoralen-mediated UV crosslinking showed HMGA1a anchored U1 snRNP to the adjacent pseudo-5' splice site. MCF-7 cells transfected with expression plasmids of HMGA1a and its RNA-decoy could induce and repress ER α 46 expression, respectively. The *in vivo* effect of the HMGA1a RNA-decoy were checked by transplanting its stable transfectants into nude mice, showing that they increased estrogen-dependent proliferation. In tamoxifen-resistant MCF-7 TAMR1 cells, the HMGA1a RNA-decoy improved tamoxifen-responsiveness by inhibiting estrogen-dependent cell proliferation. We conclude that this HMGA1a RNA-decoy would be implicated in novel therapeutic application to improve tamoxifen effectiveness in breast cancer patients.

Biography

Vikas Bhatia is Dean at All India Institute of Medical Sciences, Bhubaneswar and Professor and Head, Deptt. of Community & Family Medicine since August, 2012. and contributed significantly in establishing AIIMS- BBSR. He did MBBS, MD in Community Medicine from MGIMS, Sewagram, Maharashtra and PGD in Hospital & Health Management. Dr Bhatia is Fellow of IMSA, IAPH and IAPSM. He has experience of over three decades in various institutions such as PGIMER, Chandigarh, GMC, Chandigarh, UCMS Delhi. As Health Officer / Officer Incharge, Health Section, UNICEF managed state-wide RCH Program with budget of about US\$ one million /annum by facilitating capacity building, advocacy and policy Influencing with Govt. and established partnership with WHO, USAID, CARE, World Vision, NIPi, CDC and other organizations. Jointly with UNICEF – Govt. of UP reached to 180 million population in 70 districts with focus on children and women's health & nutrition.

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