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SOX9: A therapeutic target in breast cancer

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Abstract

SOX9 is a transcription factor that is largely known for its role in the formation of all cartilaginous tissues. However, recently most tissues with regenerating capacity have been shown to express it. SOX9 is a member of the high mobility group (HMG) superfamily of non-histone nuclear proteins. It's conserved transactivation domains allow it to interact with tissue specific transcription factors to provide functional specificity. Similarly, its precise temporal and spatial expression patterns between different cell types and tissues help coordinate its numerous biological functions such as maintaining stem cell properties, lineage specification, and terminal differentiation. SOX9 plays a pivotal role in a number of developmental processes where its levels and cellular localization are strictly controlled during normal organogenesis. In this talk, I will summarize our studies that reveal how loss of its conserved functions affects mammary initiation and breast cancer. Furthermore, I will review critical epigenetic mechanisms including potential epigenetic alterations around the SOX9 locus that can serve as biomarkers for monitoring cancer prognosis and response to therapy.

Biography

Geetika Chakravarty is a Scientist-Turned-Entrepreneur from Houston, TX. As a scientist, she has made original contributions in cancer research, particularly in breast cancer. To transform her laboratory experience to real world applications, she recently founded Jonakee Cancer Research, Inc. As its President and CSO, Geetika has focused her efforts on new mechanistic approaches for early detection and treatment of aggressive cancers. Dr. Chakravarty completed her Ph.D from Tata Memorial Hospital, University of Bombay, India and postdoctoral studies from Baylor College of Medicine, USA. She has published in reputed cancer journals and is serving as reviewer and editorial board member of journals of repute.