

TITLE

Structural and functional dissection of ErgP55 oncoprotein

Ajay K. Saxena and Shanti P. Gangwar

Nehru University, New Delhi-11067, India

The Ergp55 protein belongs to Ets family of transcription factor. The Ets proteins are highly conserved in their Ets DNA binding domain and involved in various development processes and regulation of cancer metabolism. To study Ergp55, we produced full length and three smaller fragments of Ergp55 protein in *E. coli* and characterized using several biophysical techniques. The Ergp55 contains large amount of α -helix and random coil structures as measured by circular dichroism spectroscopy. The full length Ergp55 forms a highly elongated molecule as revealed by molecular modeling and structural prediction programs. The binding analysis of E74 DNA sequences with full length and three smaller fragments of Ergp55 indicate that longer fragments of Ergp55 (beyond the canonical Ets domain) showed the evidence of auto-inhibition. It also indicated the part of Ergp55 protein that mediates the auto-inhibition. The current studies will aid in designing the compounds, which stabilize the inhibited form of Ergp55 and inhibits its binding to DNA. The details of all biotechnical techniques used in current analysis will be discussed in current meeting.