**ABSTRACT**

Nickel(II) Salen sulfadiazine complex was prepared and characterised by the spectral studies such as FT-IR, UV-Vis and NMR, and single-crystal XRD. The nickel(II) complex was screened for in vitro antimicrobial activities against various test organisms Aeromonashydrophila, Serratiamarcescens, Bacillus licheniform, Pseudomonas aeruginosa, Acinetobacterbaumanii, Aspergillusniger, and Candida albicans by the well diffusion method and in vitro anticancer activity against the human breast cancer cell line HeLa. The NiO obtained by the thermal decomposition of Ni (salen) sulfadiazine complex was characterised using TEM images and their SAED pattern