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Research Abstract : β-Carboline scaffold is a vital structural subunit which present as components of many biologically interesting molecules reported for antitumor activity. The binding mode and interaction of β-Carboline derivatives towards the various anticancer targets advantages the discovery of this scaffold into antitumor therapy. A series of novel N9 substituted β-Carboline analogues were designed and docked against various antitumor targets. The molecular docking studies revealed that among the various heterocycle designed Schiff bases had selectivity against *PLK-1.* The highest ranked compounds were synthesised and characterised. The compound, SB-2 showed potent cytotoxic activity in the NCI-60 panel cell lines with the GI50 values ranging from 3-45μM and selectively inhibits PLK-1 at 15μM on KinomeScan screening. It showed dose-dependent cell cycle arrest at S/G2 phase and induced apoptosis by the activation of cleaved PARP and Procaspase-3 levels. The antitumor studies on DLA and EAC model revealed that the molecule at 100 mg/kg significantly increased their average life span and decrease in the body weight of the tumor bearing mice when compared to the tumor controlled mice.

Fellowships : ***Government [DST-Women Scientist (WOSA)]***

Awards & Scholarships **:**

- *Received DST-Women Scientist grant (Rs.21 lakh from Department of Science and Technology, India)*
- *Received Best E-poster award in International Seminar & Exhibition on Phytopharmaceuticals: Emerging Challenges and Opportunities.*
- *Published 3 international publications from the research work*

Way Forward **:**

I would like to contribute my knowledge in drug discovery field to invent/deliver a safer, more affordable, and more effective medicine to larger populations.