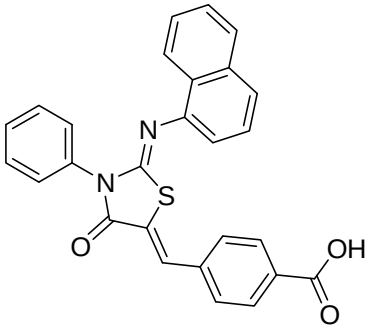
Conclusion

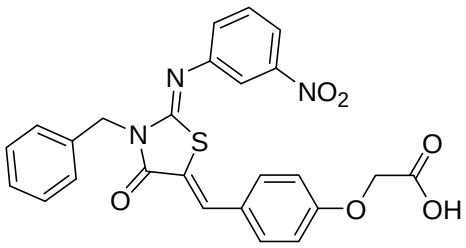
6. CONCLUSION

After recognizing the structural features essential for proper binding to PTP1B following docking studies, substituted thiazolidine-4-ones were synthesized. The compounds were characterized by spectral data (IR, NMR, and Mass). From a total of 132 compounds synthesized, 10 depicted highest PTP1B inhibitory activity in low μg levels. Among these 10 compounds, **5**, **60**, **63**, **79**, **90**, and **92** were further evaluated *in vitro* against TCPTP, SHP-1, LAR and CDC25B for ascertaining selectivity of the ligands for PTP1B. Compound **60** and **90** show good selectivity profile as compared to compound **5**. Compound **5** (IC_{50} = 0.21±0.03 μg/mL) shows potent inhibition of CDC25B (IC_{50} = 0.13±0.01 μg/mL). This finding affords compound 5 as a good lead in the development of anticancer agents.

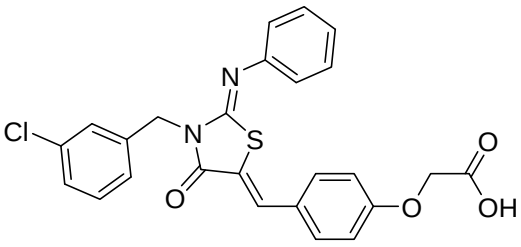
Enzyme kinetic studies of compound **5**, **60** and **90** indicated compound **5** and **90** to be competitive inhibitors and compound **60** a mixed type (hybrid) inhibitor of PTP1B.



5 (IC_{50} = 0.21±0.03 μg/mL)



60 (IC_{50} = 2.38±0.39 μg/mL)



90 (IC_{50} = 1.45±0.13 μg/mL)