

**ISOLATION, EXTRACTION AND CHARACTERIZATION OF PIPEROLACTAM A FROM
PIPER BETLE AS A NON STEROIDAL CONTRACEPTIVE LEAD.**

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Abstract:

This work is on extracting, isolating and characterization of Piperolactam A as a non-steroidal contraceptive lead, which is in high demand due to the ominous side effects of steroidal contraceptives and dearth of non steroidal contraceptives in the market. The solubility of Piperolactam A(PLA) has been enhanced upto 8 times by complexing it with Hydroxypropyl- β -cyclodextrin(HPBCD). Formulating PLA in a nano form has been found safer through toxicity and metabolomics studies. The nano PLA-HPBCD has been seen to exhibit 100% contraception at a dose of 2.5mg/kg- 5mg/kg.

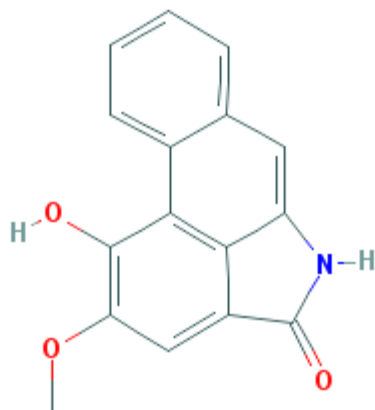


Figure 1: Chemical structure of Piperolactam A $C_{16}H_{11}NO_3$

Based on pharmacophoric requirements, we present Piperolactam A as a non-steroidal contraceptive lead. By screening through Discovery Studio Visualizer (ver. 3.5) and subsequent docking through AutoDock Vina, PLA showed better estrogen-progesterone receptor binding as compared to standard antagonists Rohitukine and OrgC. This lead is revealed not to hamper the steroidal pathway, instead down-regulating the interleukin level in blood which increases during pregnancy. We propose that, such pathophysiological alteration subsequently de-adheres the blastocyst from uterine endometrium which suggests its non-steroidal contraceptive potential, avoiding the side effects of steroidal contraceptives in prolonged usage.

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