Synthesis and anticancer evaluation of D-rind modified acid hydrazide derivatives of podophyllotoxin as Tubulin inhibiting agents

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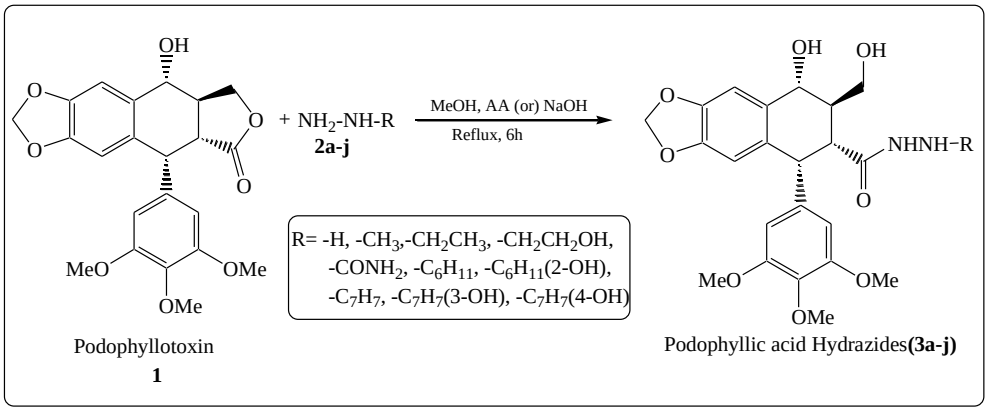
Podophyllotoxin, a well-known naturally occurring aryltetralin lignin, is extracted from the roots of Podophyllum species. The pharmacological properties of Podophyllotoxin have been well-recognized for centuries. However, its high toxicity and severe gastrointestinal side effects reduced its use as a drug in cancer chemotherapy. Herein we report, the synthesis of D-ring modified acid hydrazides derivatives of Podophyllotoxin. The synthesized compounds were characterized by NMR, Mass and IR spectra. The compounds were also screened for anticancer activity on human cancer cell lines Du 145, HeLa and MCF and found that they have shown considerable anticancer activity across all cell lines. The Molecular docking studies have also supported the observed IC_{50} values.



Scheme: Synthesis of podophyllic acid hydrazides