**Diversification of Noscapine Core Derivatives for Future Drugs**

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The anti-tussive drug noscapine and analogs display anti-tumor activity by impairing tubulin polymerization without severe side effects. Noscapine causes mitotic arrest of tumor cells, induces apoptosis of tumor cells in vivo, and is in phase I/phase II clinical trials for multiple myeloma.[1] The coreunit of noscapine known as cotarnine, an oxidative degradation product of the drug, is a crystalline alkaloid which is available chiefly in salt form. Cotarnine hydrochloride is known to have hemostatic activity.[2] Additionally, cotarnine is the key component of tritoqualin (inhibostamin®) which is used as an anti-allergic drug,[3] and has been shown to have a preventive effect on liver injury in rats induced by treatment with CCl4.[4]  Hence, derivatization of cotarnine could pave the way to novel anticancer agents. Herein, we wish to report a practical and efficient method for synthesis of cotarnine derivatives. Other synthetic alkaloid generation exploiting this scaffold is underway.



References:

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