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Short communication

Design, synthesis and structure–activity relationship (SAR) studies of imidazo[4,5-*b*]pyridine derived purine isosteres and their potential as cytotoxic agents

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Highlights

- Regioselective synthesis of some purine isosters (arylated/heteroarylated imidazo[4,5-*b*]pyridines) as potent anticancer agents.
- (Ataphos)$PdCl_2$ catalyzed Suzuki cross-coupling reaction.
- SAR studies of the synthesized arylated/heteroarylated imidazo[4,5-*b*]pyridines.
- Evaluation of microsomal stability of the newly synthesized compounds.
- Analogue **6b** displayed strong cytotoxicity and good microsomal stability.

Abstract

Drug resistance to chemotherapeutic agents paved the way to develop novel synthetic molecules which are active on MDR cancer cell lines. Regio-isomeric imidazo[4,5-*b*]pyridine analogues were synthesized and evaluated for their cytotoxic activity against a range of cancer cell lines. The structure–activity relationship (SAR) studies of the imidazopyridine analogues are also described. Analogue **6b** displayed strong cytotoxicity and good microsomal stability.