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Sulfamic acid promoted one-pot three-component synthesis and cytotoxic evaluation of spirooxindoles

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Abstract: A simple, mild and efficient method for the synthesis of pyrazolopyridine based spirooxindoles by the three-component reaction has been developed using sulfamic acid (H_2NSO_3H) as a green catalyst. The method involves use of water as a solvent which makes it eco-friendly. The catalyst used is readily available and is prominent for short reaction time, operational simplicity and high yields. After completion of the reaction the catalyst could be recovered and reused for up to four cycles without loss in catalytic activity. Employing this method a library of 34 compounds has been synthesized and investigated for their cytotoxicity against a panel of three human cancer cell lines. Some of the compounds like **4o** and **4p** exhibited remarkable cytotoxicities with IC_{50} values of 0.35 µM and 1.92 µM against MDA-MB-231 cell line.

Keywords: Spirooxindoles, multicomponent reaction, sulfamic acid catalyst, reusability, cytotoxicity

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