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Synthesis and evaluation of anti-platelet aggregation activity of some novel n-substituted indole hydrazone derivatives

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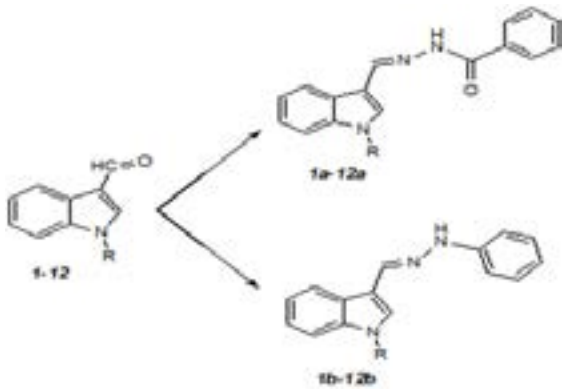
Since thromboembolic disorders are one of the major cause of death worldwide and according to the anti-platelet activity of indole derivatives and hydrazone derivatives which have been reported in recent studies, a new series of indolehydrazone derivatives was designed and synthesized using indol-3-carbaldehyde as the lead compound and molecular hybridization approach.



Derivatives	1	2	3	4	5	6	7	8	9	10	11	12
R	CH_3	C_2H_5	benzyl	2-F-benzyl	3-F-benzyl	4-F-benzyl	2-Br-benzyl	2-CN-benzyl	2-Cl-benzyl	2-CH3-benzyl	3-CH3-benzyl	4-CH3-benzyl

The structure of synthesized compounds was confirmed by different spectral methods such as MASS, HNMR and IR spectroscopy. The *in vitro* anti-platelet activity of these compounds was evaluated using arachidonic acid (AA), adenosine diphosphate (ADP) and collagen as aggregation inducers. Based on the results, compounds (1b- 6b) showed considerable activity against arachidonic acid-induced platelet aggregation. Among them, compounds 1b and 2b were the most potent derivatives with IC50 comparable to that of indomethacin as standard drug. None of the compounds showed a promising response to either ADP or collagene induced platelet aggregation.

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Notes: