Design and synthesis of 5-benzoyl-N-(5-(3,4-dichlorophenyl)-2-((3,4,5-trimethoxyphenyl)amino)pyridin-3-yl)-1H-indole-3-carboxamide and their anticancer activity.

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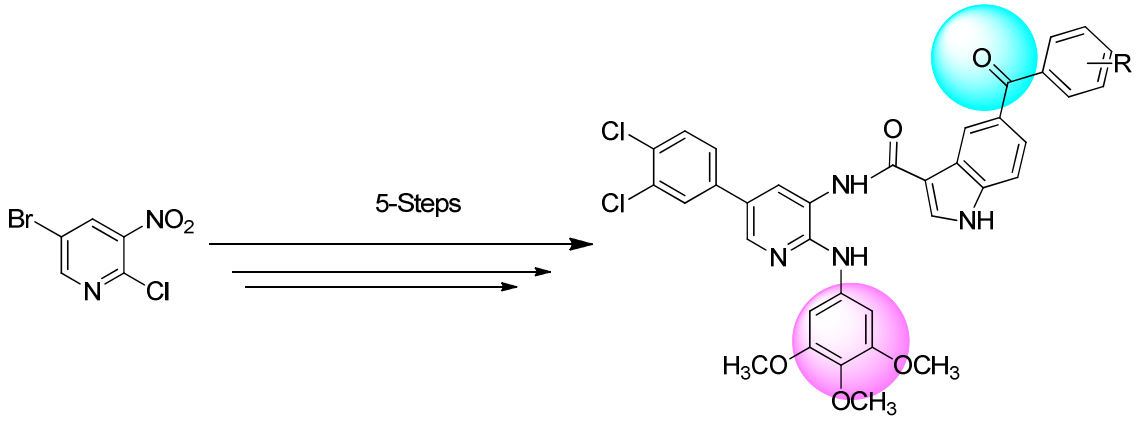
Abstarct:

We designed, synthesized library of 5-benzoyl-N-(5-(3,4-dichlorophenyl)-2-((3,4,5-trimethoxyphenyl)amino)pyridin-3-yl)-1H-indole-3-carboxamide. Phenstatin analogues carrying carbazole rings suggested to us that an expanded tropolone site might be exploited for improved potency and/or pharmacokinetic modulation. To explore new possibilities for the indole-based interfacial inhibitors, other modifications at the Phenstatin Bridge and the effect of 2, 3, 4-trimethoxyphenyl ring, additionally, the replacement of the indole by our target. These modifications are very interesting in terms of interactions with the protein, because new possibilities for binding can be assessed, as well as for activity modulation, solubilization improvement, and derivatization. Most of the compounds assayed were cytotoxic at micro molar concentrations thus indicating that the common (trimethoxybenzyl) indole is a very favourable scaffold for cytotoxicity. These libraries of derivatives screened for their anticancer activity on selected human cancer lines.



References

1. Mennitti, F. S.; Faraci, W. S.; Schmidt, C.J. *Nature Rev. Drug Discovery*, **2006**, 5, 660-669.

2. Loughney, K.; Snyder, P. B.; Uher, L.; Rosman, G. J.; Ferguson, K.; Florio, V. A. *Gene* **1999**, 234, 109–117.

3. Soderling, S. H.; Bayuga, S. J.; Beavo, J. A. *Proc. Natl. Acad. Sci. U.S.A.* **1999**, 96, 7071–7076.

4. Caron JM, Herwood M. *Chemotherapy* **2007**; 53, 51-58.