Synthetic studies towards spiroindimicins B-D

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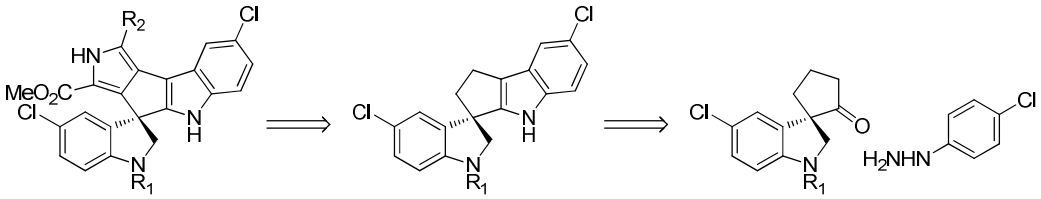
Spiroindimicins B-D were isolated in 2012 from *Streptomyces* sp. SCSIO 03032,[1] a deep-sea derived actinomycete collected from the Bay of Bengal. These hexacyclic natural products feature unprecedented [5,5] spirocyclic bisindole scaffolds, and exhibit moderate inhibitory activity and cytotoxicity against a series of cancer cell lines.[1] To date there are no reports on the synthesis of any member of this unusual family of natural products. Our synthetic strategy involves a Fischer indolization between phenylhydrazine **1** and ketone **2** to form the pentacycle **3**, to which we are currently attempting to append the pyrrole ring and hence complete the syntheses of spiroindimicins B-D.



spiroindimicins B-D
B R_1 = Me, R_2 = H
C R_1 = H, R_2 = H
D R_1 = Me, R_2 = CO_2Me

3 **2** **1**

1) Zhang, W.; Liu, Z.; Li, S.; Yang, T.; Zhang, Q.; Ma, L.; Tian, X.; Zhang, H.; Huang, C.; Zhang, S.; Ju, J.; Shen, Y.; Zhang, C., *Org. Lett.* **2012**, *14*, 3364-3367.