

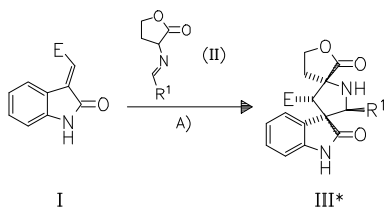
Indole derivatives

R 0140

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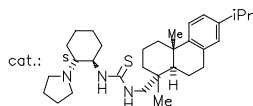
31- 123

**Efficient Construction of Highly Functionalized Spiro[ $\gamma$ -butyrolactone- $\gamma$ -pyrrolidin-3,3'-oxindole] Tricyclic Skeletons via an Organocatalytic 1,3-Dipolar Cycloaddition.** — (WANG, L.; SHI, X.-M.; DONG, W.-P.; ZHU, L.-P.; WANG\*, R.; Chem. Commun. (Cambridge) 49 (2013) 33, 3458-3460, <http://dx.doi.org/10.1039/c3cc40669e>; State Key Lab. Appl. Org. Chem., Lanzhou Univ., Lanzhou, Gansu 730000, Peop. Rep. China; Eng.) — R. Staver

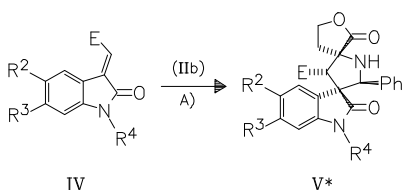


E:  $-\text{CO}-\text{O}-\text{Et}$

A): cat., toluene/ $\text{Et}_2\text{O}$ ,  $25^\circ\text{C}$ , [1 d]



- |                                 |                          |
|---------------------------------|--------------------------|
| a R <sup>1</sup> : $-\text{Cy}$ | 90% (90% d.e., 90% e.e.) |
| b R <sup>1</sup> : $-\text{Ph}$ | 92% (90% d.e., 95% e.e.) |
| c R <sup>1</sup> :              | 86% (90% d.e., 97% e.e.) |
| d R <sup>1</sup> :              | 95% (90% d.e., 92% e.e.) |
| e R <sup>1</sup> :              | 89% (87% d.e., 90% e.e.) |
| f R <sup>1</sup> :              | 95% (90% d.e., 90% e.e.) |
| g R <sup>1</sup> :              | 91% (88% d.e., 92% e.e.) |
| h R <sup>1</sup> :              | 97% (90% d.e., 91% e.e.) |



- |  |                          |
|--|--------------------------|
| a R <sup>2</sup> , R <sup>3</sup> : $-\text{H}$ ; R <sup>4</sup> : $-\text{Me}$          | 87% (90% d.e., 93% e.e.) |
| b R <sup>2</sup> , R <sup>3</sup> : $-\text{H}$ ; R <sup>4</sup> : $-\text{Bn}$          | 87% (90% d.e., 99% e.e.) |
| c R <sup>2</sup> , R <sup>4</sup> : $-\text{H}$ ; R <sup>3</sup> : $-\text{Cl}$          | 90% (90% d.e., 93% e.e.) |
| d R <sup>2</sup> : $-\text{Me}$ ; R <sup>3</sup> , R <sup>4</sup> : $-\text{H}$          | 90% (90% d.e., 93% e.e.) |
| e R <sup>2</sup> : $-\text{O}-\text{Me}$ ; R <sup>3</sup> , R <sup>4</sup> : $-\text{H}$ | 92% (90% d.e., 94% e.e.) |
| f R <sup>2</sup> : $-\text{F}$ ; R <sup>3</sup> , R <sup>4</sup> : $-\text{H}$           | 86% (87% d.e., 90% e.e.) |
| g R <sup>2</sup> : $-\text{Br}$ ; R <sup>3</sup> , R <sup>4</sup> : $-\text{H}$          | 89% (90% d.e., 92% e.e.) |