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Total Synthesis of Notoamides F, I, and R and Sclerotiamide

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## Synthesis of (+)-Notoamides F, I, and R and (-)-Sclerotiamide

**Significance:** Herein, the authors describe the first total synthesis of (+)-notoamides F, I, and R, and (-)-sclerotiamide, isolated from the marine fungi *Aspergillus* sp. The synthetic strategy relies on a cobalt-mediated radical cycloisomerization and an aza-Prins cyclization to construct the bicyclo[2.2.2]diazaoctane core.

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**Comment:** Treatment of diamide  $\mathbf{D}$  with FeCl $_3$  induces an oxidative aza-Prins cyclization to give ester  $\mathbf{F}$  in 67% yield. After Grignard addition of indole  $\mathbf{G}$ , cobalt-mediated radical cyclization delivers  $\mathbf{K}$ , which can be further transformed into (+)-notoamide I in three steps. From there, the other three natural products can be accessed.

Category

Synthesis of Natural Products and Potential Drugs

## **Key words**

- (+)-notoamide F
- (+)-notoamide I
- (+)-notoamide R
- (-)-sclerotiamide
- aza-Prins reaction
- cobalt
- radical cyclization

