**Zirconium-Mediated Synthesis of Pyrroles**

**Significance:** Liu and co-workers report the direct insertion of nitriles into zirconocene 1-aza-1,3-diene complexes for the synthesis of variously substituted N–H and N-substituted pyrroles in high yields.

**Comment:** The outcome of the reaction is determined by different cyclization patterns that depend on the relative stability and reactivity of the enamine–imine tautomers that are formed upon hydrolysis of the diazazirconacycles.

**Raw Text:**

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Insertion of Nitriles into Zirconocene 1-aza-1,3-diene Complexes: Chemoselective Synthesis of N–H and N-Substituted Pyrroles


**Proposed mechanism:**

1. **pathway A:**

   - Preparation of the diazazirconacycle
   - Insertion of the nitrile
   - Hydrolysis to form the product

2. **pathway B:**

   - Preparation of the diazazirconacycle
   - Insertion of the nitrile
   - Hydrolysis to form the product

**Selected examples:**

**products A:**

- [Image of selected examples A]

**products B:**

- [Image of selected examples B]

**Key words:**

zirconium, nitriles, cyclization

**Category:**

Metal-Mediated Synthesis

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