Dipeptide Synthesis by Two-Component Organocatalysis

**Significance:** Catalytic peptide bond formation is an important process in providing effective and economical systems for use in the industrial and pharmaceutical fields. The authors have developed a redox organocatalyst system for the formation of peptide bonds.

**Comment:** The two-component catalytic process provides versatility in dipeptide syntheses. The authors propose a mechanism consisting of a reductant-driven phosphine cycle and an oxidant-driven selenium cycle.

**Selected examples:**

- **Boc**
  - 94% yield<sup>a</sup>
  - 88% yield

- **Boc**
  - 84% yield<sup>a</sup>
  - 91% yield

- **Boc**
  - 95% yield

- **Boc**
  - 88% yield

<sup>a</sup>3 × 0.5 equiv of PhSiH<sub>3</sub> was used.

**Proposed mechanism:**

[Diagram of the proposed mechanism]

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