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 NHCO2t-Bu
  - 94% yield

- Boc NHCO2t-Bu
  - 88% yield

- Boc NHCO2t-Bu
  - 91% yield

Proposed mechanism: