

# Anion-Induced Enantioselective Cyclization Catalyzed by Cationic Gold Catalysts

## **Abstract**

The first highly enantioselective functionalization of terminal alkynes using gold(I) catalysts incorporating optically active counteranions was described.

Cationic gold(I) catalysis was used in a novel asymmetric synthesis of substituted pyrrolidines, 2,3-dihydro-1*H*-pyrroles, and tetrahydrofurans from 1,4-diynamides, 1,6-diynamides, and 1,4-diynols, respectively. The role of counteranions in these transformations was studied and their employment found to be crucial for high selectivities. Utilizing the newly-developed catalytic system allows an access to the products in near quantitative yields and in good to excellent enantiomeric excesses.