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Catalyst-Controlled Doubly Enantioconvergent Coupling of Racemic Alkyl Nucleophiles and Electrophiles

Science 2020, 367, 559–564.

Nickel-Catalyzed Enantioconvergent Coupling of Racemic Partners

Significance: Fu and co-workers report a nickel-catalyzed doubly enantioconvergent alkyl–alkyl coupling of racemic partners that proceeds with unprecedented selectivity. The authors employed a chiral nickel catalytic system that generates the product as a single stereoisomer from racemic propargylic halides and racemic β-zincated amides.

Comment: The authors propose that the enantioconvergence of the starting materials is facilitated by a radical intermediate arising from both starting materials. The presence of radical intermediates was inferred by the TEMPO adducts formed from both the electrophile and nucleophile partners in the mechanistic study.