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# SYNFACTS Highlights in Current Synthetic Organic Chemistry



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Enantioconvergent Fukuyama Cross-Coupling of Racemic Benzylic Organozinc Reagents
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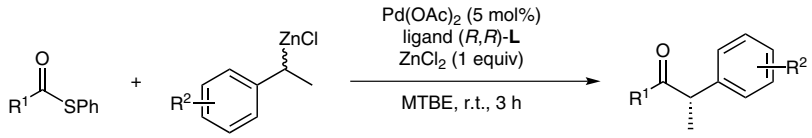
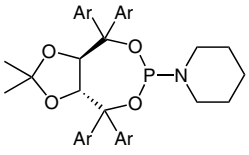
# Asymmetric Fukuyama Cross-Coupling of Racemic Benzylic Zinc Reagents



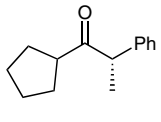

up to 95% yield
er up to 96:4

$R^1$ = Alk
$R^2$ = H, Me, Cl, F, $CF_3$

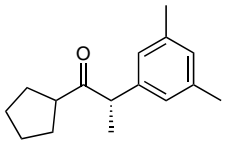



ligand (*R*,*R*)-**L**
Ar = 3,5-(*t*-Bu)$_2$-4-MeOC$_6$H$_2$

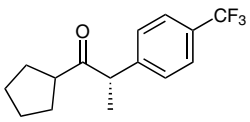
**Selected examples:**



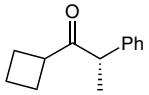

90% yield
er = 96:4



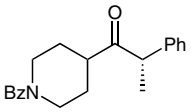

78% yield
er = 88.5:11.5



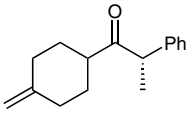

75% yield
er = 93.5:6.5



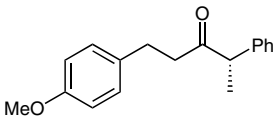

84% yield
er = 89:11



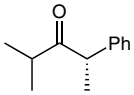

82% yield
er = 91.5:8.5




81% yield
er = 88.5:11.5




95% yield
er = 85:15




77% yield
er = 93:7

**Significance:** Maulide and co-workers report an enantioconvergent palladium-catalyzed Fukuyama cross-coupling of racemic benzylic zinc reagents with thioesters. A wide range of acyclic α-disubstituted carbonyl compounds are afforded in high yields under mild reaction conditions.

**Comment:** The addition of $ZnCl_2$ significantly improved both the yield and enantioselectivity of the reaction by influencing the Schlenk equilibrium, as well as by accelerating the racemization rate of the secondary organozinc reagents.

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**Category**
**Metal-Mediated Synthesis**

**Key words**
**Fukuyama cross-coupling**
**zinc**
**enantioconvergent transformation**