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**SYNFACTS**  
**Highlights in**  
**Chemical Synthesis**

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**Category****Metals in Synthesis****Key words**

asymmetric catalysis

azanyl esters

chiral-at-metal catalyst

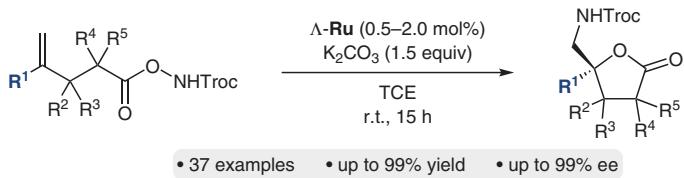
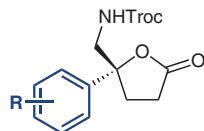
 $\gamma$ -lactones

oxyamination

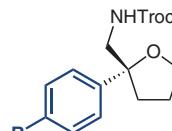
ruthenium catalysis

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 (OBERLIN COLLEGE, USA AND PHILIPPS-UNIVERSITÄT MARBURG, GERMANY)  
 Nitrene-Mediated Enantioselective Intramolecular Olefin Oxyamination to Access Chiral  $\gamma$ -Aminomethyl- $\gamma$ -Lactones  
*Angew. Chem. Int. Ed.* **2023**, *62*, e202314398 DOI: 10.1002/anie.202314398

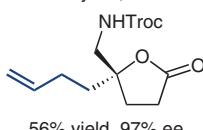
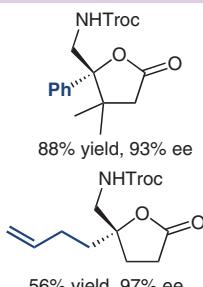
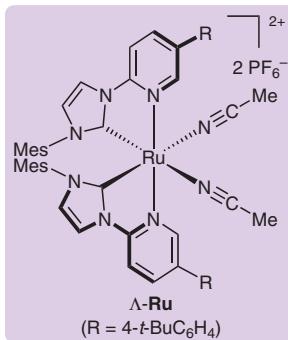
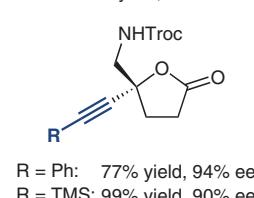
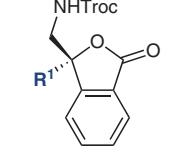
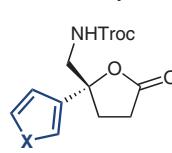
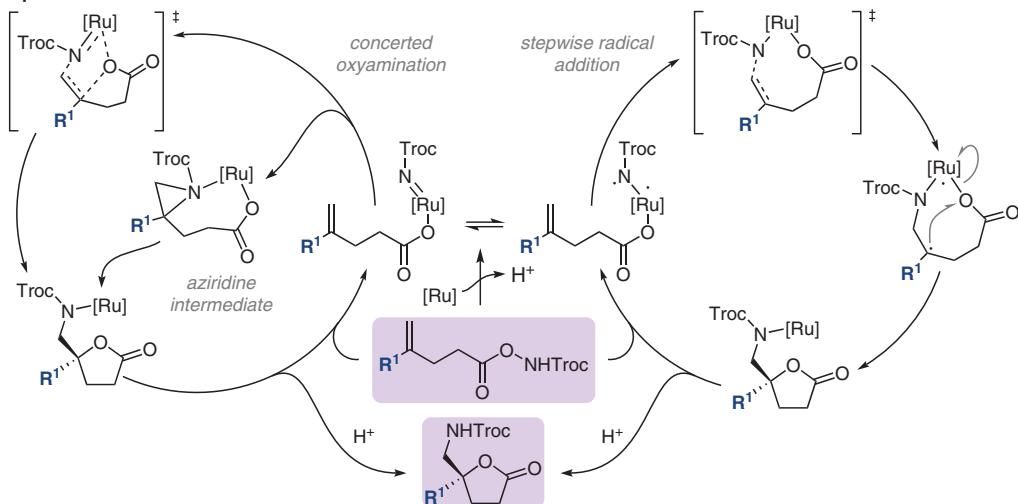
# Asymmetric Intramolecular Oxyamination of Alkenes Enabled by a Chiral-at-Ruthenium Catalyst

**Selected examples:**

R = 3-Me: 74% yield, 88% ee  
 R = 4-Me: 86% yield, 92% ee



R = OMe:	87% yield, 85% ee
R = t-Bu:	73% yield, 86% ee
R = Ph:	89% yield, 89% ee
R = Cl:	88% yield, 96% ee
R = CF <sub>3</sub> :	77% yield, 94% ee
R = NO <sub>2</sub> :	85% yield, 96% ee
R = CN:	78% yield, 97% ee
R = C(O)Me:	85% yield, 95% ee
R = CO <sub>2</sub> Et:	73% yield, 93% ee

**Proposed mechanisms:**

**Significance:** A chiral-at-ruthenium catalyst enables the enantioselective intramolecular oxyamination of alkenes to access  $\gamma$ -aminomethyl- $\gamma$ -lactones containing a quaternary carbon atom in the  $\gamma$ -position.

**Comment:** The  $\gamma$ -aminomethyl- $\gamma$ -lactone products can be converted into other heterocycles such as  $\delta$ -lactams, 2-oxazolidinones and tetrahydrofurans. The shown mechanism is supported by DFT calculations.