

Catalytic Asymmetric Synthesis Of P-Chiral Phosphoramidates

Tech ID: 34876 / UC Case 2026-716-0

BRIEF DESCRIPTION

A highly selective method for producing P-chiral phosphorus(V) compounds, eliminating complex purification steps while enabling the development of pharmaceuticals, agrochemicals, and other bioactive molecules.

FULL DESCRIPTION

A novel yttrium-catalyzed method enables efficient and stereoselective synthesis of P-chiral phosphorus(V) compounds, providing versatile building blocks for the development of pharmaceuticals, agrochemicals, ProTides, and other therapeutically relevant molecules.

SUGGESTED USES

- » Pharmaceutical synthesis targeting antiviral and therapeutic nucleoside analogues
- » Agrochemical development involving P-stereogenic phosphoramidates
- » Total synthesis of complex bioactive molecules such as phosmidosine
- » Medicinal chemistry for designing novel P-(V) therapeutic scaffolds
- » Catalyst and reagent development for asymmetric organophosphorus chemistry

ADVANTAGES

- » High enantioselectivity with chiral yttrium catalyst
- » One-pot process combining nucleophilic substitutions
- » Eliminates need for diastereomer separation
- » Compatible with medicinally relevant nucleosides
- » Provides trifunctional P-chiral building blocks for diverse application

PATENT STATUS

Patent Pending

CONTACT

Ben Chu
ben.chu@uci.edu
tel: .



OTHER INFORMATION

CATEGORIZED AS

- » **Biotechnology**
 - » Health
- » **Materials & Chemicals**
 - » Biological
 - » Chemicals
- » **Medical**
 - » New Chemical Entities, Drug Leads
 - » Therapeutics
- » **Research Tools**
 - » Reagents

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5270 California Avenue / Irvine, CA
92697-7700 / Tel: 949.824.2683



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