Monodentate Ligands

Phosphorus Specialties

Product Application Bulletin

TOTP & TPTP: MONODENTATE PHOSPHINE LIGANDS FOR METAL PROMOTED ORGANIC TRANSFORMATIONS

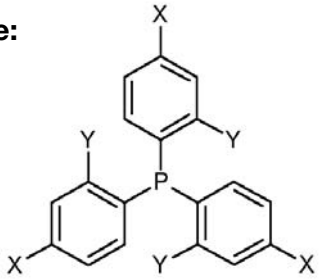
Chemical Name:

Tri-o-tolylphosphine (TOTP)
Tri-p-tolylphosphine (TPTP)

CAS Registry Number:

6163-58-2 (TOTP)
1038-95-5 (TPTP)

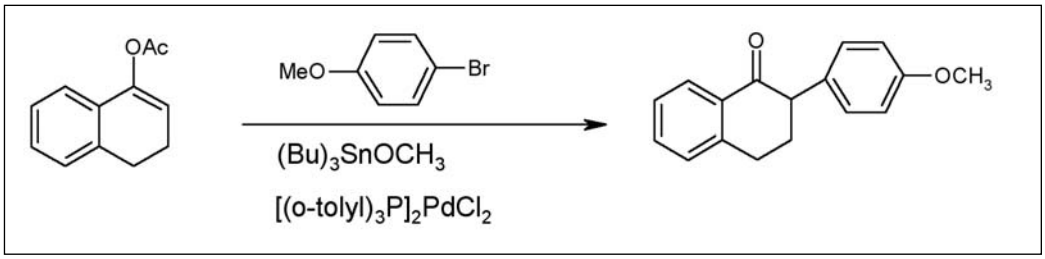
Structure:



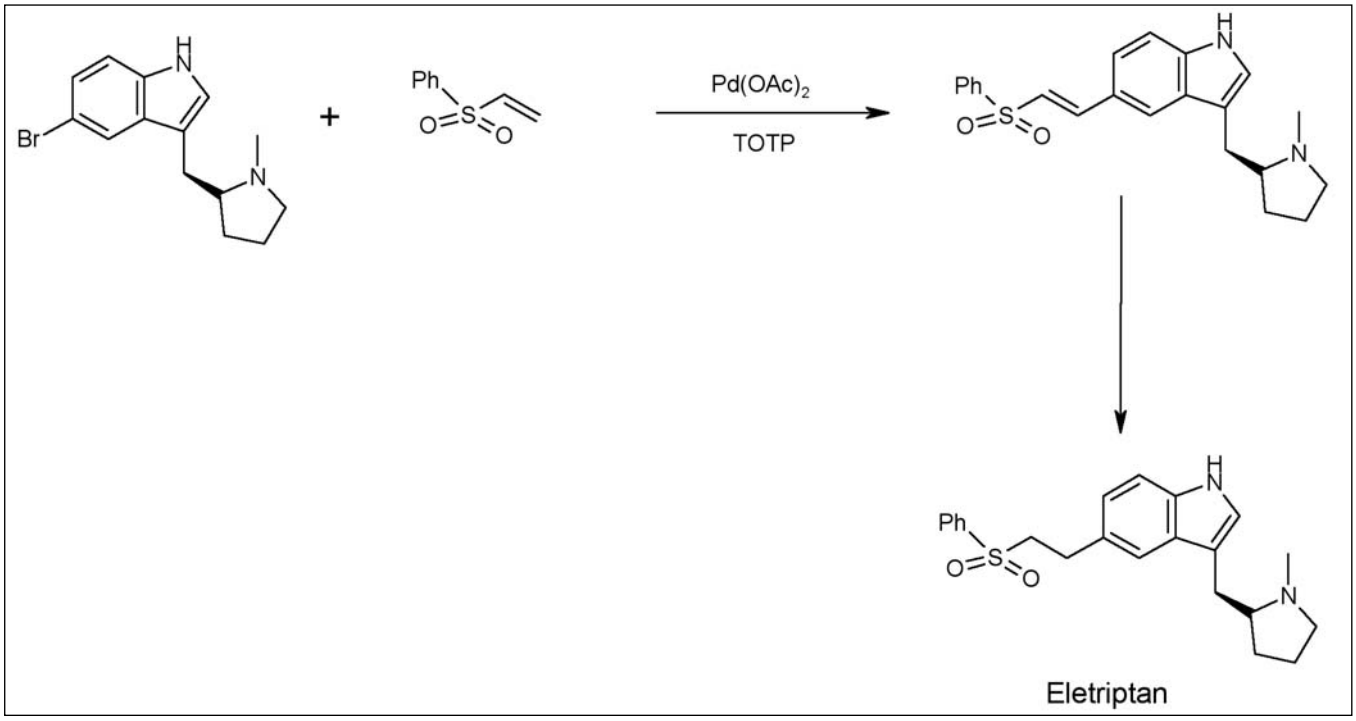
TOTP X = H, Y = CH_3
TPTP X = CH_3, Y = H

Examples / Use:

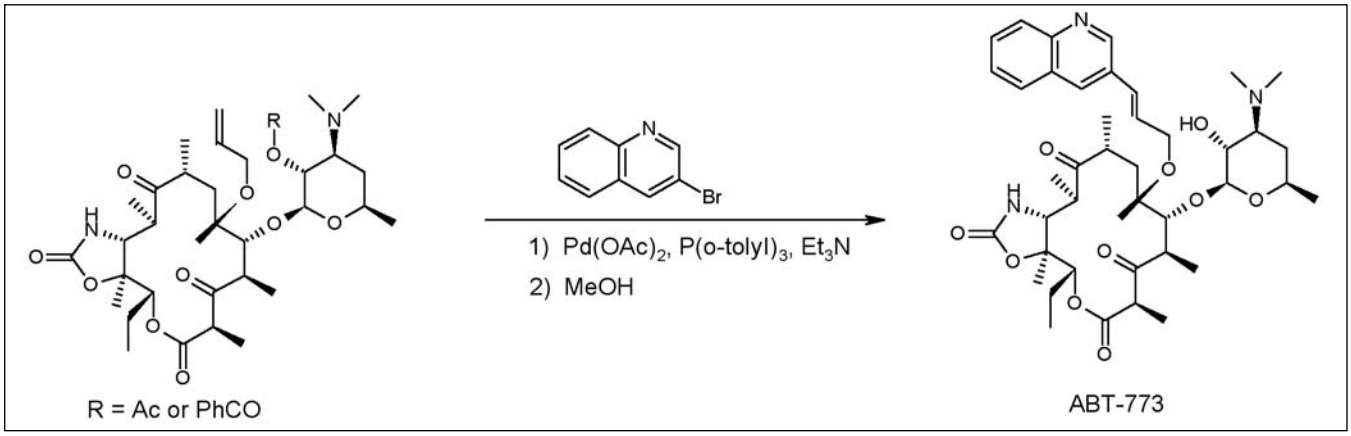
A. TOTP: Arylation of α-tetralone via the palladium catalyzed reaction of a haloaromatic with the corresponding enol acetate.



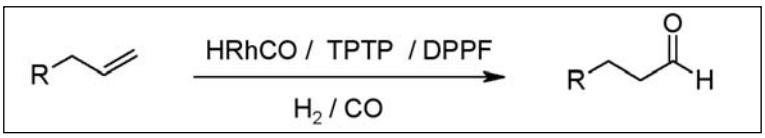
B. TOTP: Palladium catalyzed vinyl sulfonation in synthesis of Pfizer's Eletriptan.



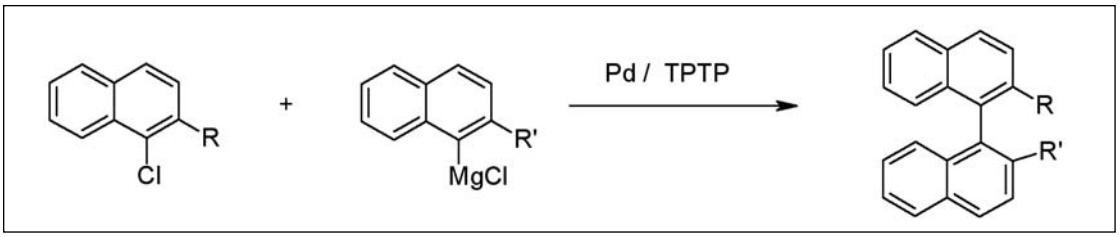
C. TOTP : Formation of a ketolide derivative in Abbott's ABT-773.



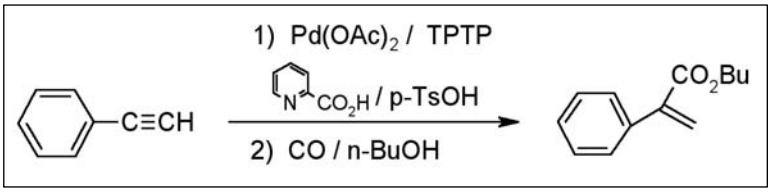
D. TPTP: Rhodium catalyzed hydroformylation of α- olefins.



E. TPTP: Palladium catalyzed aryl coupling in preparations of 2,2' subsitituted 1,1'-binaphtyls.



F. TPTP: Palladium catalyzed hydrocarbonylation of alkynes in formation of α-β-unsaturated esters.



Summary:

THERAPEUTIC AREA:
Use not associated with any specific therapeutic area.

FUNCTIONALITY:
Catalyst ligands

References:

A. US 5,416,118 (1995)
B. US 5,607,951 (1997)
C. Drugs of the Future 25(5), 445-453 (2000)
US 6,046,171 (2000)
US 6,075,011 (2000)
D. US 4,169,861 (1979)
E. US 5,510,554 (1996)
F. US 6,331,502 (2001)

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