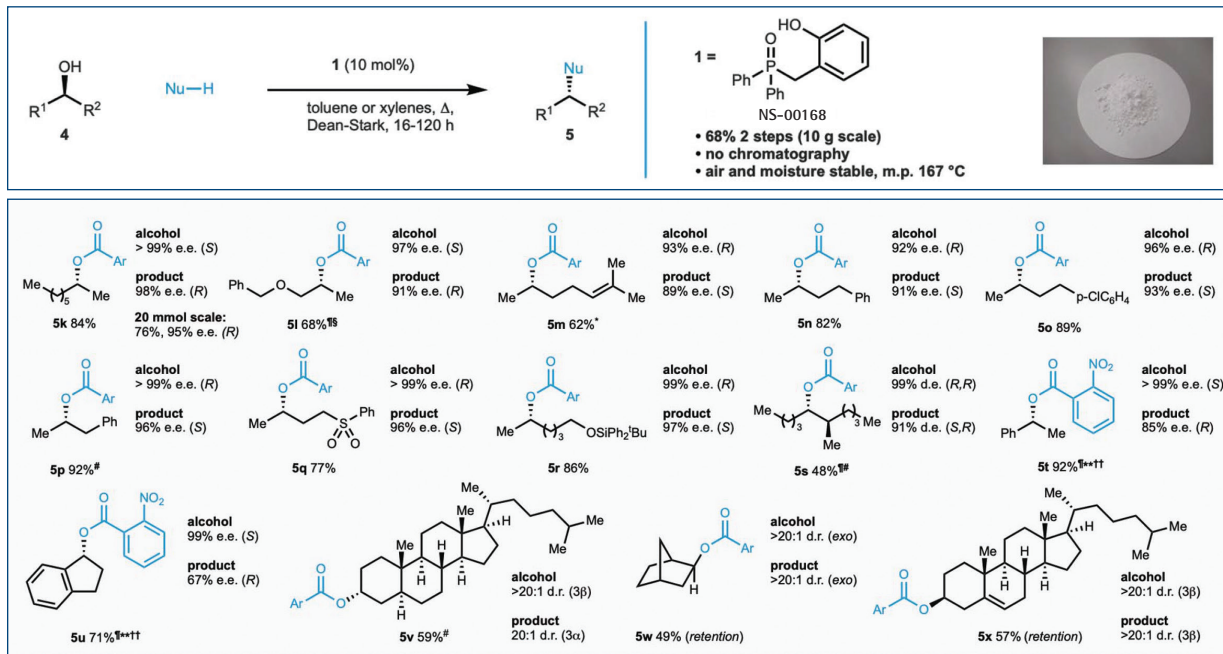


Redox-neutral organocatalytic Mitsunobu reactions

Organic Chemistry

Nucleophilic substitution reactions of alcohols are among the most fundamental and strategically important transformations in organic chemistry. For over half a century, these reactions have been achieved by using stoichiometric, and often hazardous, reagents to activate the otherwise unreactive alcohols. Ross Denton & co-workers have recently demonstrated that a specially designed phosphine oxide promotes nucleophilic substitution reactions of primary and secondary alcohols in a redox-neutral catalysis manifold that produces water as the sole by-product (*Science*, 2019, 365, 910-914). The scope of the catalytic coupling process encompasses a range of acidic pronucleophiles that allow stereospecific construction of carbon-oxygen and carbon-nitrogen bonds



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Functional Group and Substructure Group Classes

BIONET Functional Groups

Alcohols
Aldehydes
Amines
Amino Acids
Aromatic OH
Boron Compounds
Carboxylic Acids
Diamines
Dicarbonyls 1,3
Esters
Fluorinated Compounds
Hydrazides
Hydrazines
Hydroxylamines
Ketones
Miscellaneous Functional Groups
Nitriles
Protected Compounds
Reactive Halides
Saturated Compounds
Spiro Compounds
Sulphonyl Chlorides
Thiols

BIONET Substructure Groups

Anilines
Azaindoles
Benzimidazoles
Benzodioxepines
Benzodioxines
Benzodioxoles
Benzofurans
Benzothiadiazole
Benzothiazines
Benzothiazoles
Benzothiaphenes
Benzoxazines
Benzoxazoles/Benzisoxazoles
Furans
Imidazoles
Indoles
Isoindoles
Isoquinolines
Isothiazoles
Isoxazoles
Naphthalenes

Naphthyridines
Other Ring Systems
Oxadiazoles
Oxazoles
Piperidines
Pyrans
Pyrazoles
Pyrazolopyridines
Pyridines
Pyrimidines
Pyrroles
Pyrrolidines
Quinazoline
Quinolines
Quinoxalines
Thiadiazoles
Thiazolanes
Thiazoles
Thiaphenes
Triazoles

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