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ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

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**CARBON-CARBON BOND FORMATION BY
NUCLEOPHILIC ADDITION TO IMINES**



Miss Chutima Winotapan

ศูนย์วิจัยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

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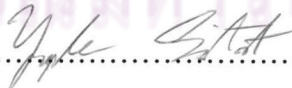

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Barbier-type allylation of unactivated aldimines with allyl bromides in the presence of indium powder took place rapidly in alcoholic solvents, most notably methanol, to give homoallylic amines in good yields. Among a variety of chiral amines tested as auxiliary for asymmetric allylation of aldimines, (*R*)-phenylglycinol gave the best yield and diastereoselectivity. The configuration of the stereogenic center in the homoallylic amine was determined by oxidative removal of the chiral auxiliary with $\text{Pb}(\text{OAc})_4$ followed by treatment with hydroxylamine hydrochloride. The absolute configuration was determined by comparing the chemical shift from $^1\text{H-NMR}$ spectra of the diastereomeric amides resulted from coupling of the homoallyl amine with Boc-(*R*)-phenylglycine and Boc-(*S*)-phenylglycine respectively.

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ศูนย์วิจัยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

LIST OF ABBREVIATIONS

Å	angström	h	hour (s)
Ar	aromatic	HOAc	acetic acid
atm	atmosphere	HOBt	1-hydroxybenzotriazole
br	broad (NMR)	HRMS	high resolution mass spectrometry
Boc	<i>tert</i> -butoxycarbonyl		
Boc ₂ O	di- <i>tert</i> -butyl-dicarbonate	Hz	hertz
BPG	Boc-phenylglycine	<i>J</i>	coupling constant
Bn	benzyl	lit	literature
Bz	benzoyl	LRMS	low resolution mass spectrometry
°C	degree celsius		
⁶ Hex	cyclohexyl	m	multiplet (NMR)
CDCl ₃	deuterated chloroform	Me	methyl
d	doublet (NMR)	MeOH	methanol
OAc	acetate	MHz	Megahertz
DCC	dicyclohexylcarbodiimide	min	minute
dd	double of doublet (NMR)	mL	milliliter (s)
dr.	diastereomeric ratio	mmol	millimole
ds	diastereoselectivity	m.p.	melting point
<i>ee</i>	enantiomeric excess	NMR	nuclear magnetic resonance
eq	equivalent	OTf	triflate (trifluoromethane sulfonate)
Et	ethyl	Ph	phenyl
EtOH	ethanol	ppm	part per million
Et ₂ O	diethyl ether	q	quartet (NMR)
E ₃ N	triethylamine	rt	room temperature
ESI	electrospray ionization	s	singlet (NMR)
ESI ⁺	electrospray ionization (positive ion mode)	t	triplet (NMR)
Fig	Figure	TFA	trifluoroacetic acid
g	gram (s)	TOF	time of flight
ⁱ Pr	isopropyl	δ	chemical shift
ⁱ PrOH	isopropanol	%	percent