LIST OF ABBREVIATIONS

$[\alpha]_D$	specific rotation at wavelength of sodium D line
Ac	acetyl
ACN	acetonitrile
Ad	adamantyl
add'n	addition
AIBN	2,2'-azobis(*iso*-butyronitrile)
app.	apparent
aq	aqueous
Ar	aryl group
atm	atmosphere
B.	*Bacillus*
BBN	borabicyclo[3.3.1]nonane
BHT	2,6-di-*tert*-butyl-4-methylphenol
BINAP	2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl
bm	broad multiplet
Bn	benzyl
Boc	*tert*-butoxycarbonyl
BOM	benzyloxymethyl
bp	boiling point
br	broad
BRSM	based on recovered starting material
bs	broad singlet
BSA	*N*,*O*-bis(trimethylsilyl)acetamide
Bu	butyl

n-Bu	*n*-butyl
t-Bu	*tert*-butyl
Bz	benzoyl
c	concentration for optical rotation measurement
^{13}C	carbon 13, isotope
/C	supported on activated carbon
°C	degrees Celsius
cat.	catalytic
calc'd	calculated
CAM	ceric ammonium molybdate stain
CAN	ammonium cerium(IV) nitrate
Cbz	benzyloxycarbonyl
CCDC	Cambridge Crystallographic Data Centre
CDI	1,1'-carbonyldiimidazole
c-Hex	cyclohexyl
comb.	combined
comp.	complex
CSA	camphorsulfonic acid
conv	conversion
COSY	correlation spectroscopy
Cy	cyclohexyl
d	doublet, deuterium, diameter, or day(s)
Δ	heat
δ	chemical shift in parts per million
DA	Diels-Alder
dba	dibenzylideneacetone

DBU	1,8-diazabicyclo[5.4.0]undec-7-ene
DCC	1,3-dicyclohexylcarbodiimide
DCE	1,2-dichloroethane
DCM	dichloromethane or methylene chloride
DDQ	2,3-dichloro-5,6-dicyano-*p*-benzoquinone
DEAD	diethyl azodicarboxylate
decomp.	decomposes
DIBAL	diisobutylaluminum hydride
DIBAL-H	diisobutylaluminum hydride
DIOP	2,3-O-isopropylidene-2,3-dihydroxy-1,4-bis(diphenylphosphino)butane
DIPA	diisopropyl amine
DIPEA	diisopropylethylamine
DMA	N,N-dimethylacetamide
DMAP	4-dimethylaminopyridine
dmdba	3,5,3’,5’-dimethoxydibenzylideneacetone
DMDO	dimethyldioxirane
DME	1,2-dimethoxyethane
DMF	dimethylformamide
DMP	Dess-Martin periodinane
DMPU	N,N'-dimethyl propylene urea
DMS	dimethylsulfide
DMSO	dimethylsulfoxide
DNA	deoxyribonucleic acid
dppb	1,4-bis(diphenylphosphino)butane
DPPE	1,2-bis(diphenylphosphino)ethane

dppp	1,3-bis(diphenylphosphino)propane
dr	diastereomeric ratio
D.-S.	Dean-Stark conditions
ee	enantiomeric excess
E	entgegen olefin geometry
E.	*Escherichia*
EI	electrospray ionization
equiv	equivalent(s)
Et	ethyl
FAB	fast atom bombardment
g	gram
GC	gas chromatography
Grubbs II	Grubbs second-generation metathesis catalyst
[H]	reduction
h	hour(s) or height
hν	light
^{1}H	proton
^{3}H	tritium
HMBC	heteronuclear multiple bond correlation
HMDS	hexamethyldisilazide or hexamethyldisilizane
HMPA	hexamethylphosphoramide
HPLC	high-performance liquid chromatography
HRMS	high-resolution mass spectroscopy
HSQC	heteronuclear single quantum coherence
Hz	hertz
η^n	eta; n = number of atoms coordinated to metal

i	iso
IBX	2-iodoxybenzoic acid
IC_{50}	concentration required for 50% growth inhibition
IL	interleukin
IMDA	intramolecular Diels-Alder
imid.	imidazole
Imid.	imidazole
IR	infrared spectroscopy
J	coupling constant
k	kilo
k_n	rate constant, n refers to various reactions, negative n indicates reverse reaction
kcal	kilocalories
KHMDS	potassium hexamethyldisilazide
L	liter
λ	wavelength
LAH	lithium aluminum hydride
LDA	lithium diisopropylamide
LD_{50}	Lethal Dosage to kill 50% of test population
LiHMDS	lithium hexamethyldisilazide
LITA	lithium tantalate
lut.	lutidine
m	meta
m	multiplet, meter, or milli
μ	micro
M	mega, metal, or molar

m/z	mass to charge ratio
m-CPBA	*meta*-chloroperbenzoic acid
Me	methyl
(*R,R*)-Me-DUPHOS	(-)-1,2-Bis((2R,5R)-2,5-dimethylphospholano)benzene
MEK	methyl ethyl ketone
MH-60	mouse myelohybridoma cells
MIC	minimal inhibitory concetration
min	minute(s)
mol	mole(s)
mol%	percentage used based on moles
MOM	methoxymethyl
(*R*)-MOP	(R)-(+)-2-(Diphenylphosphino)-2'-methoxy-1,1'-binaphthyl
mp or m.p.	melting point
Ms	methanesulfonyl
MS	molecular sieves
M.S.	molecular sieves
MTPA	α-methoxy-α-(trifluoromethyl)phenylacetic acid
MVK	methyl vinyl ketone
N	normal
n	*normal*
n	nano
NBS	*N*-bromosuccinimide
NMP	*N*-methylpyrrolidinone
NMR	nuclear magnetic resonance
nOe	nuclear Overhauser effect

NOESY	2D nuclear Overhauser effect spectroscopy
NR	no reaction
o	ortho
[O]	oxidation
p	para
PCC	pyridinium chlorochromate
PDC	pyridinium dichromate
PG	prostoglandin
Ph	phenyl
pH	hydrogen ion concentration in aqueous solution
PhH	benzene
PhMe	toluene
PHOX	phosphinooxazoline
Phth	phthalamidyl
Piv	pivaloyl
PMA	phorbol myristate acetate
PMB	*p*-methoxybenzyl
PMBM	*p*-methoxybenzyloxymethyl
p.o.	administered orally
ppm	parts per million
PPTS	pyridinium *p*-toluenesulfonate
Pr	propyl
i-Pr	isopropyl
psi	pounds per square inch
Py, py or Pyr	pyridine
q	quartet

QUINAP	(*R*)-(+)-1-(2-diphenylphosphino-1-naphthyl)isoquinoline
R	alkyl group
R	rectus (configurational)
Rearr.	Rearrangement
Red-Al	sodium bis(2-methoxyethoxy)aluminum hydride
R_f	retention factor
RNA	ribonucleic acid
ROESY	rotational nuclear Overhauser effect spectroscopy
s	singlet
S	sinister (configurational)
S.	*Salmonella* or *Staphylococcus*
SAE	Sharpless asymmetric epoxidation
SAR	structure activity relationship
sat.	saturated
sept.	septet
S_N'	allylic nucleophilic substitution
S_N1	unimolecular nucleophilic substitution
S_N2	bimolecular nucleophilic substitution
sp.	*species*
stoich.	stoichiometric
t	triplet
t	*tertiary*
$t_{1/2}$	half-life
TBAC	tetrabutylammonium chloride
TBAF	tetrabutylammonium fluoride

TBAI	tetrabutylammonium iodide
TBAT	tetrabutylammonium triphenyldifluorosilicate
TBDPS	*tert*-butyldiphenylsilyl
TBS	*tert*-butyldimethylsilyl
temp	temperature
TEA	triethylamine
TES	triethylsilyl
Tf	trifluoromethanesulfonyl
TFA	trifluoroacetic acid
THF	tetrahydrofuran
TIPS	triisopropylsilyl
TLC	thin-layer chromatography
TMEDA	tetramethylethylenediamine
TMS	trimethylsilyl
TOF	turnover frequency
TON	turnover number
TPAP	tetrapropylammonium perruthenate
TROC	trichloroethoxycarbonyl
Ts	*p*-toluenesulfonyl or *p*-toluenesulfonic
UV	ultraviolet
Vis	visual wavelength
v/v	volume per volume
wt%	percent by weight
w/v	weight per volume
X	halide or trifluoromethanesulfonate
Z	zusammen olefin geometry