

$\alpha$	observed optical rotation in degrees	CIDNP	chemically induced dynamic nuclear polarization
$[\alpha]$	specific rotation [expressed without units; the units, (deg·mL)/(g·dm), are understood]	cm	centimeter(s)
Å	angstrom(s)	cm <sup>-1</sup>	wavenumber(s)
Ac	acetyl	cod	1,5-cyclooctadiene
acac	acetylacetonate	compd	compound
ADP	adenosine 5'-diphosphate	concd	concentrated
AIBN	2,2'-azobisisobutyronitrile	concn	concentration
AM1	Austin model 1	COSY	correlation spectroscopy
AMP	adenosine 5'-monophosphate	cot	1,3,5,7-cyclooctatetraene
Anal.	combustion elemental analysis	Cp	cyclopentadienyl
anhyd	anhydrous	<i>m</i> -CPBA	<i>meta</i> -chloroperoxybenzoic acid
AO	atomic orbital	CV	cyclic voltammetry
aq	aqueous	$\delta$	chemical shift in parts per million downfield from tetramethylsilane
Ar	aryl	d	day(s); doublet (spectral); deci
atm	atmosphere(s)	<i>d</i>	density
ATP	adenosine 5'-triphosphate	DABCO	1,4-diazabicyclo[2.2.2]octane
ATPase	adenosinetriphosphatase	dansyl	5-(dimethylamino)- 1-naphthalenesulfonyl
av	average	DBN	1,5-diazabicyclo[4.3.0]non-5-ene
9-BBN	9-borabicyclo[3.3.1]nonyl	DBU	1,8-diazabicyclo[5.4.0]undec-7-ene
9-BBN-H	9-borabicyclo[3.3.1]nonane	DCC	<i>N,N'</i> -dicyclohexylcarbodiimide
Bn, Bzl	benzyl	DCE	1,2-dichloroethane
bpy	2,2'-bipyridyl	DDQ	2,3-dichloro-5,6-dicyano- 1,4-benzoquinone
BOC, Boc	<i>tert</i> -butoxycarbonyl	DEAD	diethyl azodicarboxylate
bp	boiling point, base pair	DEPT	distortionless enhancement by polarization transfer
br	broad (spectral)	DFT	density functional theory
Bu, <i>n</i> -Bu	normal (primary) butyl	DIBALH	diisobutylaluminum hydride
<i>s</i> -Bu	<i>sec</i> -butyl	DMA	dimethylacetamide
<i>t</i> -Bu	<i>tert</i> -butyl	DMAP	4-( <i>N,N</i> -dimethylamino)pyridine
Bz	benzoyl (not benzyl)	DMDO	dimethyldioxirane
B3LYP	3-parameter hybrid Becke exchange/ Lee–Yang–Parr correlation functional	DME	1,2-dimethoxyethane
°C	degrees Celsius	DMF	dimethylformamide
calcd	calculated	DMPU	1,3-dimethyl-3,4,5,6-tetrahydro- 2(1 <i>H</i> )-pyrimidinone
cAMP	adenosine cyclic 3',5'-phosphate	DMSO	dimethyl sulfoxide
CAN	ceric ammonium nitrate	DMTrCl	4,4'-dimethoxytrityl chloride
CASSCF	complete active space self-consistent field	DNA	deoxyribonucleic acid
CASPT2	complete active space with second-order perturbation theory	DPS	<i>tert</i> -butyldiphenylsilyl
cat	catalytic	dr	diastereomeric ratio
CBZ, Cbz	benzyloxycarbonyl (preferred over the abbreviation Z)	DTT	dithiothreitol
CC	coupled cluster	E1	unimolecular elimination
CD	circular dichroism	E2	bimolecular elimination
cDNA	complementary deoxyribonucleic acid	ED <sub>50</sub>	dose that is effective in 50% of test subjects
<i>c</i> -Hex, <i>c</i> -C <sub>6</sub> H <sub>11</sub>	cyclohexyl	EDTA	ethylenediaminetetraacetic acid
CI	chemical ionization; configuration interaction	EI	electron impact
		EPR	electron paramagnetic resonance
		eq	equation
		equiv	equivalent

er	enantiomeric ratio	MALDI	matrix-assisted laser desorption ionization
ESI	electrospray ionization	max	maximum
Et	ethyl	MCD	magnetic circular dichroism
FAB	fast atom bombardment	MCR	multicomponent reaction
FD	field desorption	MCSCF	multi-configuration self-consistent field
FID	flame ionization detector; free induction decay	MD	molecular dynamics
Fmoc	9-fluorenylmethoxycarbonyl	Me	methyl
FT	Fourier transform	MEM	(2-methoxyethoxy)methyl
g	gram(s); prefix to NMR abbreviation denoting gradient-selected (e.g., gCOSY, gHMQC)	Mes	2,4,6-trimethylphenyl (mesityl) [not methylsulfonyl = mesyl]
GC	gas chromatography	MHz	megahertz
GTP	guanosine 5'-triphosphate	min	minute(s); minimum
h	hour(s)	mM	millimolar (millimoles per liter)
HF	Hartree–Fock	MO	molecular orbital
HMBC	heteronuclear multiple bond correlation	mol	mole(s); molecular (as in mol wt)
HMPA	hexamethylphosphoric triamide (hexamethylphosphoramide)	MOM	methoxymethyl
HMQC	heteronuclear multiple quantum correlation	mp	melting point
HOMO	highest occupied molecular orbital	MP	Møller–Plesset perturbation theory
HPLC	high-performance liquid chromatography	MRCI	multi-reference configuration interaction
HRMS	high-resolution mass spectrometry	mRNA	messenger ribonucleic acid
HSQC	heteronuclear single quantum correlation	Ms	methylsulfonyl (mesyl)
Hz	hertz	MS	mass spectrometry
ICR	ion cyclotron resonance	MTBE	methyl <i>tert</i> -butyl ether
INDO	intermediate neglect of differential overlap	MW, mol wt	molecular weight
IP	ionization potential	<i>m/z</i>	mass-to-charge ratio (not <i>m/e</i> )
IR	infrared	N	normal (equivalents per liter)
<i>J</i>	coupling constant (in NMR spectrometry)	NAD <sup>+</sup>	nicotinamide adenine dinucleotide
k	kilo	NADH	reduced NAD
K	kelvin(s) (absolute temperature)	NBO	natural bond orbital
L	liter(s)	NBS	<i>N</i> -bromosuccinimide
LAH	lithium aluminum hydride	NCS	<i>N</i> -chlorosuccinimide
LCAO	linear combination of atomic orbitals	NICS	nucleus-independent chemical shift
LD <sub>50</sub>	dose that is lethal in 50% of test subjects	nm	nanometer(s)
LDA	lithium diisopropylamide; local density approximation	NMO	<i>N</i> -methylmorpholine- <i>N</i> -oxide
LFER	linear free energy relationship	NMP	<i>N</i> -methylpyrrolidone
LHMDS	lithium hexamethyldisilazane, lithium bis(trimethylsilyl)amide	NMR	nuclear magnetic resonance
lit.	literature value (abbreviation used with period)	NOE	nuclear Overhauser effect
LTMP	lithium 2,2,6,6-tetramethylpiperidide	NOESY	nuclear Overhauser effect spectroscopy
LUMO	lowest unoccupied molecular orbital	NRT	natural resonance theory
μ	micro	Nu	nucleophile
m	multiplet (spectral); meter(s); milli	obsd	observed
M	molar (moles per liter); mega	OD	optical density
M <sup>+</sup>	parent molecular ion	ORD	optical rotary dispersion
		PCC	pyridinium chlorochromate
		PDC	pyridinium dichromate
		PES	photoelectron spectroscopy
		Ph	phenyl
		piv	pivaloyl
		pm	picometer(s)
		PM3	parametric method 3
		PMB	<i>p</i> -methoxybenzyl
		PPA	poly(phosphoric acid)

ppm	part(s) per million	TMEDA	<i>N,N,N',N'</i> -tetramethyl- 1,2-ethylenediamine
PPTS	pyridinium <i>para</i> -toluenesulfonate	TMS	trimethylsilyl; tetramethylsilane
Pr	propyl	TOF	time-of-flight
<i>i</i> -Pr	isopropyl	Tr	triphenylmethyl (trityl)
PT	perturbation theory	tRNA	transfer ribonucleic acid
PTC	phase-transfer catalysis	$t_R$	retention time (in chromatography)
py	pyridine	Ts	<i>para</i> -toluenesulfonyl (tosyl)
q	quartet (spectral)	TS	transition state
QSAR	quantitative structure–activity relationship	UHF	unrestricted Hartree–Fock
RCM	ring-closure metathesis	UV	ultraviolet
redox	reduction–oxidation	VCD	vibrational circular dichroism
rel	relative	vis	visible
$R_f$	retention factor (in chromatography)	vol	volume
RHF	restricted Hartree–Fock	v/v	volume per unit volume (volume-to-volume ratio)
ROESY	rotating frame Overhauser effect spectroscopy	wt	weight
ROMP	ring-opening metathesis polymerization	w/w	weight per unit weight (weight-to-weight ratio)
rRNA	ribosomal ribonucleic acid	ZINDO	Zerner parameterization of inter- mediate neglect of differential overlap
rt	room temperature		
s	singlet (spectral); second(s)		
SAR	structure–activity relationship		
SCF	self-consistent field		
SEM	scanning electron microscopy		
SET	single electron transfer		
$S_N1$	unimolecular nucleophilic substitution		
$S_N2$	bimolecular nucleophilic substitution		
$S_N'$	nucleophilic substitution with allylic rearrangement		
SOMO	single-occupied molecular orbital		
t	triplet (spectral)		
$t$	time; temperature in units of degrees Celsius (°C)		
$T$	absolute temperature in units of kelvins (K)		
TBAB	tetrabutylammonium bromide		
TBAC	tetrabutylammonium chloride		
TBAF	tetrabutylammonium fluoride		
TBS	<i>tert</i> -butyldimethylsilyl		
TBHP	<i>tert</i> -butyl hydroperoxide		
TCA	trichloroacetic acid		
TCNE	tetracyanoethylene		
TDDFT	time-dependent density functional theory		
TEAB	tetraethylammonium bromide		
temp	temperature		
Tf	trifluoromethanesulfonyl (triflyl)		
TFA	trifluoroacetic acid		
TFAA	trifluoroacetic anhydride		
THF	tetrahydrofuran		
THP	tetrahydropyran-2-yl		
TIPS	triisopropylsilyl		
TLC	thin-layer chromatography		
TMAI	tetramethylammonium iodide		

Updated: January 2008