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## ABBREVIATIONS AND SYMBOLS

<i>s</i>	=	<i>singlet</i>
<i>d</i>	=	<i>doublet</i>
<i>t</i>	=	<i>triplet</i>
<i>q</i>	=	<i>quartet</i>
<i>m</i>	=	<i>multiplet</i>
<i>brs</i>	=	<i>broad singlet</i>
<i>brd</i>	=	<i>broad doublet</i>
<i>brdd</i>	=	<i>broad doublet of doublet</i>
<i>brqd</i>	=	<i>broad quartet of doublet</i>
<i>brm</i>	=	<i>broad multiplet</i>
<i>dd</i>	=	<i>doublet of doublet</i>
<i>ddd</i>	=	<i>doublet of doublet of doublet</i>
<i>dt</i>	=	<i>doublet of triplet</i>
<i>td</i>	=	<i>triplet of doublet</i>
$\delta$	=	chemical shift relative to TMS
<i>J</i>	=	coupling constant
$^{\circ}\text{C}$	=	degree celsius
<i>R<sub>f</sub></i>	=	retention factor
<i>g</i>	=	gram
<i>mg</i>	=	milligram
<i>mL</i>	=	milliliter
<i>nm</i>	=	nanometer
$\text{cm}^{-1}$	=	reciprocal centimeter (wave number)
<i>ppm</i>	=	part per million
$\lambda_{\max}$	=	maximum wavelength

## ABBREVIATIONS AND SYMBOLS (Continued)

<i>V</i>	=	absorption frequencies
Hz	=	Hertz
MHz	=	megaHertz
$[\alpha]_D$	=	specific rotation
H-n	=	position of protons
C-n	=	position of carbons
TLC	=	thin-layer chromatography
UV	=	Ultraviolet
IR	=	Infrared
NMR	=	Nuclear Magnetic Resonance
1D NMR	=	one Dimentional Nuclear Magnetic Resonance
2D NMR	=	two Dimentional Nuclear Magnetic Resonance
Mass	=	Mass spectroscopy
HMQC	=	Heteronuclear Multiple Quantum Coherence
HMBC	=	Heteronuclear Multiple Bond Correlation
DEPT	=	Distortionless Enhancement by Polarization Transfer
NOE	=	Nuclear Overhauser Effect
NOEDIFF	=	Nuclear Overhauser Effect Difference Spectroscopy
TMS	=	tetramethylsilane
MeOH	=	methanol
NaOH	=	sodium hydroxide
HCl	=	hydrochloric acid
CDCl <sub>3</sub>	=	deuterochloroform

## **ABBREVIATIONS AND SYMBOLS (Continued)**

$\text{CD}_3\text{OD}$	=	tetradeuteromethanol
Acetone- $d_6$	=	hexadeuteroacetone
Pyridine- $d_5$	=	pentadeuteropyridine
$\text{CHCl}_3$	=	chloroform
$\text{EtOAc}$	=	ethyl acetate
$\text{NaHCO}_3$	=	sodium hydrogen carbonate
$\text{H}_2\text{O}$	=	water