

BIOSYNTHETIC STUDIES OF SECONDARY METABOLITES  
BY MASS SPECTROMETRY

By

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To my parents, Maria Zorgia and Panagiotis Ntais,  
for always believing in me  
and for helping me make my dreams come true

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## LIST OF ABBREVIATIONS

A280	Absorbance at 280nm
A5P	Arabinose-5-phosphate
AcCoA	Acetyl coenzyme A
ACE	Angiotensin converting enzyme
AEP	2-aminoethylphosphonic acid
AHEP	(R)-1-amino-2-(4-hydroxyphenyl)ethylphosphonic acid
CID	Collision-induced dissociation
CoA	Coenzyme A
C-P	Carbon-phosphorus
CPEP	carboxyphosphoenolpyruvate
dAcK26	Des-acetyl K-26
DMSO	Dimethyl sulfoxide
EI	Electron impact
ESI	Electrospray ionization
FAB	Fast atom bombardment
FAPGG	Furanacryloyl-L-phenylalanyl-glycylglycine
FPLC	Fast protein liquid chromatography
GC	Gas chromatography
GEB	General enzyme buffer
GGDP	Geranylgeranyl diphosphate
HIC	Hydrophobic interaction chromatography

HPLC	High performance liquid chromatography
IR	Infrared spectroscopy
KDO8P	3-deoxy-D-manno-2-octulosonate-8-phosphate
m/z	Mass to charge ratio
MS	Mass spectrometry
MS/MS	Tandem mass spectrometry
NAT	N-acetyltransferase
NIS	NRPS-independent synthase
NMR	Nuclear magnetic resonance
NOESY	Nuclear Overhauser effect spectroscopy
NP	Natural products
NPD	Natural product derivatives
NRPS	Nonribosomal peptide synthetase
ORF	Open reading frame
PCR	Polymerase chain reaction
PDB	Precursor-directed biosynthesis
PEP	Phosphoenolpyruvate
P <sub>i</sub>	Inorganic phosphate
PKS	Polyketide synthase
Ppyr	Phosphonopyruvate
SAR	Structure-activity relationship
SRM	Selected reaction monitoring
THF	Tetrahydrofuran

Tris	Tris(hydroxymethyl)aminomethane
UV	Ultraviolet spectroscopy