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## Next generation lipopeptide antibiotics

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# Next Generation Lipopeptide Antibiotics

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*Aut inveniam viam aut faciam*

Hannibal Barca

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## List of Abbreviations

2-CT	2-Chlorotrityl
AA	Amino acid
ACS	American Chemical Society
All	Allyl
Alloc	Allyloxycarbonyl
AMR	Antimicrobial resistance
BGC	Biosynthetic gene cluster
Boc	tert-Butyloxycarbonyl
BOP	Benzotriazol-1-yloxytris(dimethylamino)phosphonium hexafluorophosphate
Brev	Brevicidine
C55-PP	Undecaprenyl pyrophosphate
CFU	Colony forming unit
CLED	Cystine-lactose-electrolyte-deficient
CLSI	Clinical and Standards Laboratory Institute
COVID	Coronavirus disease
DCM	Dichloromethane
DIC	N,N-Diisopropylcarbodiimide
DIPEA	N,N-Diisopropylethylamine
DMAP	4-Dimethylaminopyridine
DMEM	Dulbecco's Modified Eagle Medium
DMF	N,N-Dimethylformamide
DMSO	Dimethylsulfoxide
EDC	1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide
ESKAPE	<i>E. faecium</i> , <i>S. aureus</i> , <i>K. pneumoniae</i> , <i>A. baumannii</i> , <i>P.aeruginosa</i> , and <i>Enterobacter</i> spp.
Fmoc	Fluorenylmethoxycarbonyl
HATU	Hexafluorophosphate azabenzotriazole tetramethyl uronium
HEPA	High-efficiency particulate air
HFIP	Hexafluoro-2-propanol
HMM	Hidden Markov model
HPLC	High-performance liquid chromatography
ICR	Institute of Cancer Research
IM	Intramuscular

Lat	Laterocidine
LB	Luria-Bertani
LC-MS	Liquid chromatography–mass spectrometry
LPS	Lipopolysaccharide
MCR	Mobilized colistin resistance
MHB	Mueller–Hinton broth
MIC	Minimum inhibitory concentration
MOA	Mechanism of action
MTBE	Methyl-tert-butylether
MTT	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide
NMR	Nuclear magnetic resonance
NRP	Non-ribosomal peptide
NRPS	Non-ribosomal peptide synthase
OD <sub>600</sub>	Optical density at 600 nm
PARAS	Predictive algorithm for resolving A-domain specificity
PBS	Phosphate-buffered saline
PDB	Protein data bank
PK	Pharmacokinetics
PMF	Proton-motive force
RA	Rink amide
RP	Reverse-phase
RT	Room temperature
SAR	Structure-activity relationship
SPPS	Solid-phase peptide chemistry
tBu	tert-Butyl
tBuOH	tert-Butanol
TCA	Trichloroacetic acid
TFA	Trifluoroacetic acid
TIPS	Triisopropyl silane
TOF	Time of flight
TriA <sub>1</sub>	Tridecaptin A <sub>1</sub>
TSB	Tryptic soy broth
UPLC	Ultra-high performance liquid chromatography
UV	Ultraviolet
WHO	World Health Organization

## **Amino Acids**

Ala	Alanine
Asn	Asparagine
Asp	Aspartic acid
Cys	Cysteine
Dab	Diaminobutyric acid
Dap	Diaminopropionic acid
Glu	Glutamic acid
Gly	Glycine
His	Histidine
Ile	Isoleucine
Leu	Leucine
Lys	Lysine
Orn	Ornithine
Phe	Phenylalanine
Ser	Serine
Val	Valine