Anti-microbial and anti-biofilm compounds from Indonesian medicinal plants

Pratiwi, S.U.T.

CURRICULUM VITAE

Sylvia Utami Tunjung Pratiwi was born on May 15, 1973 in Surabaya, Indonesia. She completed her undergraduate degree in Biology at Udayana University, Bali Indonesia in June 1996. A year later she moved to Yogyakarta, Indonesia and started to work as a permanent lecturer at Department of Pharmaceutical Biology, Faculty of Pharmacy, Gadjah Mada University. She received a master degree in Biotechnology at Gadjah Mada University in October 2004. In 2008, she obtained a scholarship from The Directorate General of Higher Education (DIKTI)-Ministry of Education Indonesia, for her PhD study at Institute Biology Leiden, Leiden University under the supervision of Prof. C.A.M.J.J. van Den Hondel. Her research project is focused on the identification of bioactive compounds from Indonesian medicinal and spices plants affecting planktonic and biofilm growth of microorganisms, as presented in detail in this thesis. At this moment she is living in Yogyakarta Indonesia, and is continuing to work as a lecturer at Faculty of Pharmacy, Gadjah Mada University.

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List of abbreviations

AHL	*N*-acylhomoserine lactone
AIDS	Acquired Immune Deficiency Syndrome
ANOVA	Analysis of variance
ATCC	American type culture collection
C4-HSL	N-butyryl-L-homoserine lactone
$CDCl_3$	Deuterated chloroform
CDR	*Candida* drug resistance
CF	Cystic Fibrosis
CFU	Colony forming unit
CLSI	Clinical and laboratory standard institute
CLSM	Confocal laser scanning microscope
CMC	chronic mucocutaneous candidiosis
CoNS	Coagulase negative staphylococci
CP	capsular polysaccharide
DMSO	Dimethyl sulfoxide
eDNA	Extracellular DNA
ECM	Extracellular matrix
EOs	Essential oils
EPS	Extracelullar polymeric substances, Exopolysaccharide
ETs	exfoliative toxins
EtOH	Ethanol
FDA	Food and Drug Administration
FICI	Fractional inhibitory concentration index
GC-MS	Gas chromatography-mass spectrometry
HHL	C6-Homoserine lactone
HULIS	Humic-like substances
ICSBD	Indonesian Country Study on Biodiversity
IUD	Intrauterine device
LB	Luria bertani
MCSRAMMS	Microbial surface components recognizing adhesive matrix molecules
MDR	Multi-drug resistance
Mm	Milimeter
MIC	Minimum inhibitory concentration
MBIC	Minimum biofilm inhibitory concentration
MBEC	Minimum biofilm eradication concentration
MTT	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide
µm	Micrometer
NIH	National Institutes of Health
NIST	National institute of standards and technology
nm	Nanometer
NMR	Nuclear magnetic resonance
OD	Optical density
PBS	Phosphate buffer saline
PE	Petroleum ether
PI	Propidium iodide
PIA	The polysaccharide intercellular adhesion
PMIC	Planktonic minimum inhibitory concentration

PNAG	Poly-*N*-acetylglucosamine
PSMs	Phenol-soluble-modulins
PTSAgs	Pyrogenic toxin superantigens
PVC	Polyvinyl chloride
QS	Quorum sensing
QSI	Quorum sensing inhibition
QSM	Quorum sensing molecule
RI	Retention index
RT	Retention time
SDB	Sabouraud dextrose broth
SEs	Staphylococcal enterotoxins
SI	Similarity index
SOD	superoxide dismutase
SSSS	Staphylococcal scalded skin syndrome
TLC	Thin layer chromatography
TM	Traditional medicine
TSS	Toxic shock syndrome
TTSS	Type III secretion system
v/v	Volume/volume
WT	Wild type
XTT	2-3-bis-(2-methoxy-4-nitro-5-sulfophenyl)-2H-tetrazolium-5-carboxanilide