PRODUCTION OF MESOXALIC ACID FROM GLYCEROL OXIDATION BY LACCASE/2,2,6,6-TETRAMETHYLPIPERIDINE-1-OXYL (LACASSE/TEMPO) SYSTEM: EFFECT OF PROCESS PARAMETERS AND KINETIC STUDY

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LIST OF SYMBOLS

ε	extinction coefficient
l	light path
A	absorbance
min	minute
hrs	hours
k	rate constant
^{o}C	degree celcius
K	Kelvin
Cx	Concentration of compound x
cP	centipoise
ppm	part per million
M	mol/L
Pa	pascal
r	reaction rate
E_0	redox potential

LIST OF ABBREVIATIONS

ABTS	2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid)
APHA	American Public Health Association
$BaCl_2$	Barium chloride
CI	Chilling injury
CPHM	4-chlorophenylhydrazone of mesoxalic acid
CV	Cyclic voltammetry
DAD	Diode Array detector
DHA	Dihydroxyacetone
DNA	Deoxyribonucleic acid
EDTA	Ethylenediaminetetraacetic acid
FA	Formic acid
GA	Glyceric acid
GCE	Glassy carbon electrode
Gled	Glyceraldehyde
Gly	Glycerol
H_5IO_6	Periodic acid
HA	Hydroxylapatite
HIV	Human immunodeficiency virus
HPLC	High-performance liquid chromatography
ILA	Insulin-like activity
L-DOPA	L-3,4-dihydroxyphenylalanine
LMS	Laccase mediated system

MA	Mesoxalic acid
$Na_2C_3O_5$	Sodium mesoxalate
NHE	Normal hydrogen electrode
ODE	Ordinary differential equation
OECD-FAO	Organisation for Economic Co-operation and Development-Food and Agriculture Organization
pI	Isoelectric point
PLGA	Poly(lactic-co-glycolic acid)
RID	Refractive index detector
RNA	Ribonucleic acid
RT	Reverse transcriptase
SCE	Saturated calomel electrode
SDS-PAGE	Sodium dodecyl sulfate polyacrylamide gel electrophoresis
TA	Tartronic acid
TEMPO	2,2,6,6-Tetramethylpiperidine-1-oxyl
USDA	United States Department of Agriculture