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LIST OF SYMBOLS AND ABBREVIATIONS

bp	base pair
cfu/ml	colony forming units per milli litre
CMC	carboxymethyl cellulose
Da	dalton
K_m	Michaelis-Menten constant
kDa	kilo dalton
LAB	lactic acid bacteria
LBG	locust bean gum
ME	metabolic energy
ml/h	milli litre per hour
ml/min	milli litre per minute
mg/ml	mili gram per milli litre
MRS	De Man, Rogosa and Sharpe medium
MW	molecular weight
NB	nutrient broth
OD	optical density
PCR	polymerase chain reaction
PNGP	<i>p</i> -nitrophenyl- α -D-galactopyranoside
rRNA	ribosomal ribonucleic acid
SDS-PAGE	sodium dodecyl sulfate-polyacrylamide gel electrophoresis
TLC	thin-layer chromatography
U/ml	unit of enzyme per milli litre
U/mg protein	unit of enzyme per milli gram protein
V_{max}	maximum velocity
V/V	volume per volume
W/V	weight per volume
X-Gal	5-bromo-4-chloro-3-indolyl- β -D-galactoside