

S2 Table. Recipe of SynH being used for fermentation study.

(A). Phosphate buffer, $(\text{NH}_4)_2\text{SO}_4$ and salts (K/Na/Ca/Mg), amino acids, nucleic base, Vitamin;

Component	mM (Final Concn.)
KH_2PO_4	5.84
K_2HPO_4	11.15
$(\text{NH}_4)_2\text{SO}_4$	30
KCl	36.8
NaCl	1.3
$\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$	5.5
$\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$	12.5
L-Alanine	1.172
L-Arginine.HCl	0.144
L-Asparagine	0.228
DL-Aspartic acid.K	0.594
L-Cysteine.HCl	0.050
L-glutamine	0.259
L-Glutamic acid.K	0.607
Glycine	0.378
L-Histidine	0.037
L-Isoleucine	0.262
L-Leucine	0.371
L-Lysine.HCl	0.175
L-Methionine	0.100
L-Phenylalanine	0.282
L-Proline	0.656
L-Serine	0.369
L-Threonine	0.310
L-Tryptophan	0.050
L-Valine	0.424
L-Tyrosine	0.202
Adenine	0.05
Cytosine	0.05
Uracil	0.05
Guanine	0.05
Thiamine HCl	0.0004
Calcium Pantothenate	0.003

(B). Micro nutrients, FNSG salts, osmoprotectants, acetic and lactic degradation products, carbohydrates (carbon sources), Pyridines

Component	mM (Final Concn.)
ZnCl₂	20
MnCl₂·4H₂O	91
CuCl₂·2H₂O	1.9
CoCl₂·6H₂O	0.03
H₃BO₄	23.1
(NH₃)₆Mo₇O₂₄·4H₂O	0.31
FeCl₃·6H₂O	20
Sodium formate	2.8
Sodium nitrate	1.1
Sodium succinate	0.5
Glycerol	4.1
Betaine.H₂O	0.7
Choline Chloride	0.3
DL-Carnitine	0.3
Acetamide	80
Sodium acetate	32
L-lactatic acid (90%)	4
D-Mannose	1.2
L-Arabinose	20
D-Fructose	24
D-Galactose	2.9
D-Glucose	30 g/L (333 mM)
D(+)-Xylose	30 g/L (200 mM)
Pyridoxine.HCl	2.14 μM
Nicotinic Acid	26.78 μM
Biotin	0.1 μM
Inositol	0.056 mM