3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Yeast Synthetic Drop-out Media Supplements

Catalog Number **Y1501: without uracil**
Catalog Number **Y1751: without histidine**
Catalog Number **Y1896: without lysine**
Catalog Number **Y1376: without leucine**
Catalog Number **Y1876: without tryptophan**
Catalog Number **Y0750: without leucine and tryptophan**
Catalog Number **Y1771: without uracil, leucine and tryptophan**
Catalog Number **Y2146: without histidine, leucine, and tryptophan**
Catalog Number **Y2021: without histidine, leucine, tryptophan and adenine**
Catalog Number **Y2001: without histidine, leucine, tryptophan and uracil**

Store at Room Temperature

Product Description

The selection of plasmids in yeast is based on the use of auxotrophic mutant strains, which cannot grow without a specific medium component (an amino acid, purine or pyrimidine). Transformation with a plasmid containing the mutated gene enables the transformant to grow on a medium lacking the required component. Although yeast can grow on a synthetic medium without any amino acids, better yield and growth rate can be achieved on richer media. Having a richer medium also increases the probability of successful transformations when screening libraries or performing gene knockouts. Composition of the media supplements are given in Table 1 and are based on published formulations.[1]

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Yeast Synthetic Drop-out Medium Supplement (see Table 2 for appropriate amount for each supplement)	1.39–1.92 g/L
Yeast nitrogen base without amino acids (Catalog Number Y0626)	6.7 g/L
<u>For plates add</u>:	
Bacteriological agar (Catalog Number A5306)	20 g/L

When preparing plates, autoclave for **15 minutes only**; autoclaving longer will cause agar to become soft. Alternatively, the agar can be autoclaved separately from the Synthetic Drop-out Medium Supplement and yeast nitrogen base.

After autoclaving add:	
Glucose, 50% (w/v) solution (prepared from Catalog Number G7021, sterilized by 0.2 μm filtration)	40 mL/L

Storage/Stability

Store media supplements desiccated at room temperature.

Table 1.
Product composition

	Component	Amount per liter of medium (mg)*
1	Adenine	18
2	*p*-Aminobenzoic acid	8
3	Leucine	380
4	Alanine	76
5	Arginine	76
6	Asparagine	76
7	Aspartic acid	76
8	Cysteine	76
9	Glutamic acid	76
10	Glutamine	76
11	Glycine	76
12	Histidine	76
13	*myo*-Inositol	76
14	Isoleucine	76
15	Lysine	76
16	Methionine	76
17	Phenylalanine	76
18	Proline	76
19	Serine	76
20	Threonine	76
21	Tryptophan	76
22	Tyrosine	76
23	Uracil	76
24	Valine	76

* Excluding dropped-out components

Table 2.
Amount of Supplement for 1 Liter of Medium

Yeast Synthetic Drop-out Medium Supplement	Amount per Liter of Medium
Y1501: without uracil	1.92 g
Y1751: without histidine	1.92 g
Y1896: without lysine	1.92 g
Y1376: without leucine	1.62 g
Y1876: without tryptophan	1.92 g
Y0750: without leucine and tryptophan	1.54 g
Y1771: without uracil, leucine, and tryptophan	1.46 g
Y2146: without histidine, leucine, and tryptophan	1.46 g
Y2021: without histidine, leucine, tryptophan, and adenine	1.39 g
Y2001: without histidine, leucine, tryptophan, and uracil	1.39 g

Results

Growth test results

Synthetic medium / Relevant genotype	Y1501 without uracil	Y1751 without histidine	Y1896: without lysine	Y1376: without leucine	Y1876: without tryptophan	Y0750: without Leu & Trp	Y1771: without Ura, Leu, & Trp	Y2146: without His, Leu, & Trp	Y2021: without His, Leu, Trp, & Ade	Y2001: without His, Leu, Trp, & Ura	YPD
ade2, lys2, trp1, his3, ura3, leu2 [pCEN HIS3]	–	+	–	–	–	–	–	–	–	–	+
ade2, lys2, trp1, his3, ura3, leu2 [pCEN TRP1]	–	–	–	–	+	–	–	–	–	–	+
ade2, lys2, trp1, his3, ura3, leu2 [pCEN LEU2]	–	–	–	+	–	–	–	–	–	–	+
ade2, lys2, trp1, his3, ura3, leu2 [pCEN URA3]	+	–	–	–	–	–	–	–	–	–	+
ade2, lys2, trp1, his3, ura3, leu2 [pCEN LEU2, pCEN TRP1]	–	–	–	+	+	+	–	–	–	–	+
ade2, lys2, trp1, his3, ura3, leu2 [pCEN LEU2, pCEN TRP1, pCEN HIS3]	–	+	–	+	+	+	–	+	–	–	+
ade2, lys2, trp1, his3, ura3, leu2 [pCEN LEU2, pCEN TRP1, pCEN URA3]	+	–	–	+	+	+	+	–	–	–	+
leu2, trp1, ura3-52	–	+	+	–	–	–	–	–	–	–	+
lys1	+	+	–	+	+	+	+	+	+	+	+

Reference

1. Kaiser C., Michaelis, S., and Mitchel, A., *Methods in Yeast Genetics, a Cold Spring Harbor Laboratory Manual* (Cold Spring Harbor, NY: 1994).

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