

Yeast Extract (NCM0218)

Intended Use

Yeast Extract is an autolysate of yeast cells used in preparing microbiological culture media in a laboratory setting. Yeast Extract is not intended for use in the diagnosis of disease or other conditions in humans.

Product Summary and Explanation

Yeast Extract is the water-soluble portion of autolyzed yeast. The autolysis is carefully controlled to preserve naturally occurring B-complex vitamins. Yeast Extract is prepared and standardized for bacteriological use and cell cultures and is an excellent stimulator of bacterial growth. Yeast Extract is generally employed in the concentration of 0.3% - 0.5%. Yeast Extract is typically prepared by growing baker's yeast, *Saccharomyces* spp., in a carbohydrate-rich plant medium. The yeast is harvested, washed, and resuspended in water, where it undergoes autolysis, i.e., self-digestion using the yeast's enzymes. Yeast Extract is the total soluble portion of this autolytic action. The autolytic activity is stopped by a heating step. The resulting Yeast Extract is filtered clear and dried into a powder by spray drying.

Yeast Extract has been successful in culture media for bacterial studies in milk and other dairy products. Several media containing Yeast Extract have been recommended for cell culture applications.

Principles of the Procedure

Yeast Extract provides vitamins, nitrogen, amino acids, and carbon in microbiological and cell culture media.

Precaution

Refer to SDS

Quality Control Specifications

Physical and Chemistry:

Dehydrated Appearance: Powder is homogeneous, free-flowing, and light tan to beige.

Prepared Appearance (2% Solution): Prepared medium is brilliant to clear, amber, without or with a slight precipitate.

Physical/Chemistry	
Dry Matter*:	≥ 94.0%
Total Nitrogen:	10.0 to 11.8%
Amino Nitrogen:	4.5 to 5.8%
Proteins (N x 6.25)	62.5 to 73.8%
Ash (excluding chloride):	11.5 to 16.0%
Sodium Chloride:	≤ 0.5%
pH (2% solution):	6.8 to 7.2
Filterability (100 ml, 5% solution)	Filterable through a 47 mm 0.2 micron filter under 15 inches vacuum within 2 minutes

* % Moisture can be calculated using the equation (100% - dry matter %) = % Moisture

Microbiology	
Standard Plate Count:	≤ 5000 cfu/g
Salmonella (per 25g):	Negative
Escherichia coli:	Negative
Coagulase Positive Staphylococcus:	Negative

Growth Supporting Properties on Peptone Agar:

Microorganism	Expected Result
<i>Escherichia coli</i>	Growth
<i>Staphylococcus aureus</i>	Growth

Test Procedure

Refer to appropriate references for specific procedures using Yeast Extract.

Results

Refer to appropriate references for test results.

Storage

Store dehydrated culture media at 2-30°C away from direct sunlight. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration

Refer to expiration date stamped on container. Product should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to product in its intact container when stored as directed.

References

1. www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalManualBAM/default.htm.
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3. Vanderzant, C., and D. F. Splittstoesser (eds.). 2015. Compendium of methods for the microbiological examination of food, 4th ed. American Public Health Association, Washington, D.C.
4. Marshall, R.T. (ed.). 2004. Standard methods for the examination of dairy products, 17th ed. American Public Health Association, Washington, D. C.
5. United States Pharmacopeia National Formulary 2018.
6. Chan, L., P. F. Greenfield, and S. Reid. 1998. Optimizing fed-batch production of recombinant proteins using the baculovirus expression vector system. *Biotechnology BioEngineering*, 59: 178-188, John Wiley & Sons, Inc.
7. Ikononou, Bastin, Schneider, Agathose. 2001. Design of efficient medium for insect cell growth and recombinant protein production, in *Vitro Cell Dev. Biol. Anim.*, 37:549-559.