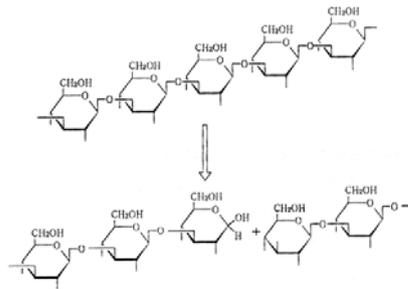


Zymolyase® 20T

GE013.0001 (1g)

Zymolyase® 20T from GRiSP is prepared from *Arthrobacter luteus*, and is supplied as an ammonium sulfate precipitate of a complex of enzymes. The strong lytic activity against living yeast cell walls is mainly due to the activity of β -1,3-glucan laminaripentaohydrolase. This enzyme hydrolyzes linear glucose polymers with β -1,3-linkages and releases specifically laminaripentaose as the main and minimum product unit, allowing for the production of protoplasts or spheroplasts of various yeast strains.



Lytic activity varies depending on yeast strain, growth stage of yeast, or cultural conditions. Under the conditions mentioned below, the lytic activity of Zymolyase® 20T is 20.000 U/g,

Applications

Preparation of spheroplasts or protoplasts from a variety of yeast strains.

Unit definition¹⁾

One unit (U) of lytic activity is defined as the amount that results in a 30% decrease of the absorbance at 800nm of a reaction mixture^{*)} after incubation with gentle shaking at 25°C for 2 hours. A decrease of A_{800} with 60%, equivalent to 2U, corresponds to complete lysis. In other words, 1U of Zymolyase® lyses 3mg of dry weight *S. cerevisiae* in 2 hours under ideal conditions.

*) 10ml reaction mixture is: 1 ml of distilled water, 3 ml of *Saccharomyces cerevisiae* (2mg/ml), 5 ml 1/15 M phosphate buffer (pH 7,5), and 1 ml of enzyme solution.

¹⁾ For the definition of each enzyme units: Kitamura, K., Kaneko, T., Yamamoto, Y., (1972) *J. Gen. Appl. Microbiol.*, **18**, 57

Specifications

Form:	Lyophilized powder
Purification:	Ammonium Sulfate Precipitation
Activity ¹⁾ :	
β-1,3-glucan laminaripentaohydrolase:	20.000 U/g
Other Activities ¹⁾	
β-glucanase:	~1,5x10 ⁶ U/g
protease:	~1,0x10 ⁴ U/g
mannanase:	~1,0x10 ⁶ U/g
Contaminants	
Amylase:	trace amounts
Xylanase:	trace amounts
Optimum Conditions (pH, temp)	
For lysis of viable yeast cells:	pH 7,5 – 35°C
For hydrolysis of yeast glucan:	pH 6,5 – 45°C
Storage/Stability	
+2°C to +6°C:	No loss of activity after storage for 1 year.
+30°C:	70% of lytic activity is lost after 3 months.
+60°C:	All lytic activity is lost after 5 minutes.
Specificity	
Lytic Spectrum:	<i>Ashbya, Candida, Debaryomyces, Eremothecium, Endomyces, Hansenula, Hanseniaspora, Kloeckera, kluyveromyces, Lipomyces, Metschnikowia, Pichia, Pullularia, Saccharomyces, Saccharomycopsis, Schwanniomyces, Torulopsis, Saccharomycodes, etc.</i>

Precautions

- Zymolyase® can be adsorbed onto nitrocellulose membranes. Avoid nitrocellulose filters when sterilizing.
- If Zymolyase® is to be used at higher concentrations than 0,05% (when sterilized), prepare a 2% Zymolyase® solution in a buffer containing 5% glucose. Filter the suspension and dilute with the appropriate buffer.

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