Pectolyase Y-23 & Cellulase YC

Maceration enzyme for protoplast preparation from higher plants

Product Description

Catalog #: D18250, 5 g
Name: **Pectolyase Y-23**

Powered fungal pectinase preparation
CAS: 9033-35-6
Activity: approx.100x103 maceration units* per gram
pH: effective in the range of 4.5-6.5 (optimum activity pH is 5.5)
Stable in the range of pH 4.0-7.0

*the maceration activity is determined by measuring the volume of single cells released from potato tuber slices under the conditions as specified by Ishii (7).

Storage: +4°C (L) , dry

Catalog #: AM7241, 10g AM72422, 100g
Name: **Cellulase Y-C**

Powered fungal cellulase preparation
CAS: 9032-75-1
IUB number: 3.2.1.4 (β-1,4-glucan-4-glucanohydrase)

Storage: +4°C (L) , dry

Applications:

For Research Use Only

- Protoplast preparation

Introduction

Pectolyase Y-23 is a highly purified maceration enzyme from *Aspergillus japonicus*. It contains two types of pectinases such as endo-polygalacturonase (EC:3.2.1.15)(1) and endo-pectin lyase (EC:4.2.2.3)(2) in high activity. In an additional component is included a maceration stimulating factor which remarkably stimulates tissue maceration by both pectinases (3.4).
Thus, pectolyase Y-23 can isolate biologically active protoplasts from widest spectrum of higher plants and tissues in a combination with Cellulase Y-C #AM7241 in a brief incubation (5.6).

Cellulase Y-C is a cellulase from *Tricoderma viride* for the preparation of protoplast from plant tissues.
Optimum pH: 3.0-5.0
Optimum temprature: 40-50°C
pH stability: 3.0-6.0 (37°C, 30min)
Temperature stability: below 50°C (pH 4.0, 30min)
Activity: above 25 000 u/g filter paper decomposing activity (determined by modified Toyama's assay method)

Directions for use

Guidelines for use – Examples for protoplast preparation

Composition of incubation mixture:	**from leaf mesophyll** (5).	**from cultured cells** (6).	**from oat** (Avena sativa)s
Pectolyase Y-23	0.1%	0.05%	1%
Cellulase preparation	2.0%	2.0%	2.0%
Mannitol	0.7M	0.4M	0.5M
pH	5.5	5.5	5.5
Temperature:	30°C	30°C	25-27°C
Incubation time:	30-60min	50-60min	2-3Hr

References

(1) Ishii S. and T.Yokotsuka: Purification and properties of endo-polygalacturonase from Aspergillus japonicus; Agric.Biol.Chem., 36, 1835 (1972).
(2) Ishii S. and T.Yokotsuka: Purification and properties of pectin lyase from Aspergillus japonicus; Agric.Biol.Chem., 39, 313 (1975).
(3) Ishii S. and K.Kiho: Evidence of a factor that stimulates tissue maceration by pectolytic enzymes. Phytopathology, 66, 1077 (1976).
(4) Ishii S.: Purification and characterization of a factor that stimulates tissues maceration by pectolytic enzymes. Phytopathology, 67, 994 (1977).
(5) Nagata T. and S.Ishii: A rapid method for isolation of mesophyll protoplasts; can.J.Biol., 57, 1829 (1979).
(6) Hasezawa S., T.Nagata and K.Syono: Transformation of Vinca protoplasts mediated by Agrobacterium spheroplasts. Mol.Gen.Genet., 182, 206 (1981).
(7) Ishii S.: Enzymatic maceration of plant tissues by endo-pection lyase and endo-polygalacturonase from Aspergillus japonicus. Phytopathology, 66, 281 (1976).

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For in vitro R&D use only

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