MIXED MICROBIAL CARBOHYDRASE and PROTEASE from *BACILLUS SUBTILIS*, Var.

Prepared at the 15th JECFA (1971), published in NMRS 50B (1972) and in FNP 52 (1992). An ADI 'not limited' was established at the 15th JECFA (1971)

SOURCES

Produced by the controlled fermentation of *Bacillus subtilis*, var.

Active principles

1. Alpha-amylase
2. Proteases: usually contain following two enzymes
2-a. Microbial serine proteinase
2-b. Microbial metalloproteinases

Systematic names and numbers

1. 1,4-alpha-D-glucan glucanohydrolase (EC 3.2.1.1)
2-a. None (EC 3.4.21.14)
2-b. None (EC 3.4.24.4)

Reactions catalyzed

1. Hydrolysis of 1,4-alpha-glucosidic linkages in polysaccharides, yielding primarily dextrins and oligosaccharides.
2. Hydrolysis of polypeptides yielding peptides of lower molecular weight. The neutral proteinase (2-b) cleavage preferentially bonds adjacent to a hydrophobic amino-acid residue.

DESCRIPTION

Occur as off-white to tan amorphous powders; soluble in water, the solutions usually being light yellow to dark brown in colour; practically insoluble in alcohol, chloroform and ether; preparations can vary in the relative concentrations of each of the active principles; powdered and liquid products are available.

FUNCTIONAL USES

Enzyme preparation
Used in the preparation of starch syrups, alcohol, beer, glucose, bakery products, fish meal, tenderizing meat, and the preparation of protein hydrolysates

GENERAL SPECIFICATIONS

Must conform to the *General Specifications for Enzyme Preparations used in Food Processing* (see Volume Introduction)

CHARACTERISTICS

IDENTIFICATION

Protease activity (Vol. 4)

The sample shows bacterial proteinase activity

alpha-Amylase activity (Vol. 4)

The sample shows bacterial alpha-amylase activity