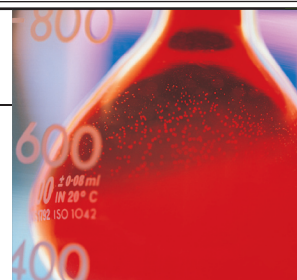


Cell Biology / Protein Science

Trypsin is a pancreatic enzyme used extensively in tissue dissociation and cell harvesting, microbiological media and proteomics (the large scale study of protein structures and function).



Pancreatic Enzymes

Neova Technologies produces purified enzymes extracted from pork pancreas glands. These enzymes are naturally occurring pancreatic proteins that play an important role in the digestion of food. Neova uses the term *trypsin* as the designation for these enzyme preparations.

Trypsin is a serine-type protease that preferentially hydrolyzes peptide bonds whose carboxyl groups are contributed by lysine (Lys) or arginine (Arg).

APPLICATIONS

Applications include:

- tissue dissociation and cell harvesting;
- microbiological media; and
- proteomics (large scale study of protein structures and functions).

Trypsin is a proteolytic enzyme that is used extensively in these applications, as it is effective in breaking down the intercellular matrices responsible for adhering cells to each other and to the container in which they are grown. Trypsin is especially useful when it is desirable to have the cell remain intact, preserving its viability.

Hydrolyzed proteins are also used in many microbiological media as sources of growth factors, peptides and amino acids. These hydrolysates are prepared by the action of a proteolytic enzyme on either an animal or vegetable sourced protein. Trypsin is often utilized where casein is the desired source for proteins.

Trypsin is also used in peptide mapping and characterization of proteins.

OPTIMAL RANGES

Figures 1 and 2 demonstrate the effect of pH and temperature on activity and heat stability for these preparations.

Figure 1: Activity versus pH at 50°C

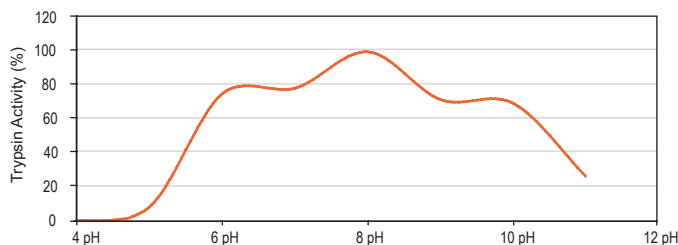
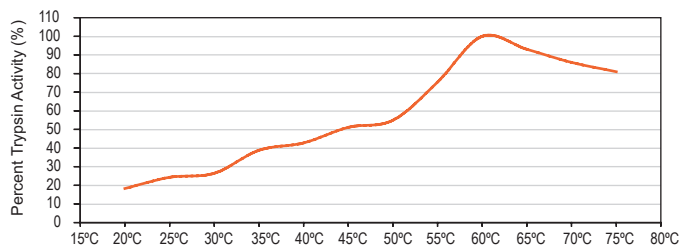


Figure 2: Activity versus Temperature at pH 8.0



BENEFITS / ADVANTAGES

A key benefit associated with using Neova proteolytic enzymes lies in the full range of services, including both technical and applications support that Neova provides. Neova works with its customers to meet their unique product specifications.

Raw materials are sourced from government-certified facilities. All extraction and refining is done under cGMP guidelines for active pharmaceutical ingredients (API). Preparations are available in lyophilized (freeze-dried) powder and range in colour from an off white to light beige.

These preparations comply with the recommended purity requirements for food grade enzymes provided by the Joint FAO/WHO Expert Committee on Food Additives (JECFA), the Food Chemical Codex (FCC), as well as specific requirements stipulated in the most recent edition of the U.S. Pharmacopoeia. Neova's preparations also exhibit low to no side activities other than trypsin, in particular those associated with lipase and amylase.

REGULATORY STATUS

- E.C. (Enzyme Classification) Number: Trypsin – EC 3.4.21.4
- CAS (Chemical Abstracts Registry) Number: Trypsin – 9002-07-7
- Trypsin is affirmed as GRAS (Generally Recognized as Safe) by the United States Food & Drug Administration and appears in 21 CFR 184.1914

A trypsin monograph appears in both the Food Chemicals Codex and the United States Pharmacopoeia.

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