a Bioseutica plc company

neova™ technologies

inovapure

Pancreatic Enzymes

Ovoproducts

Pancreatic Enzymes (Overview)

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The two main enzymes, trypsin and chymotrypsin, are refined and blended to meet different functional requirements as determined in consultation with customers. Trypsin and chymotrypsin are classified as serine proteases, with specific cleaving characteristics.

Trypsin preferentially hydrolyzes bonds whose carboxyl groups are contributed by lysine (Lys) or arginine (Arg). Chymotrypsin hydrolyzes peptide bonds involving phenylalanine (Phe), tyrosine (Tyr) and tryptophan (Try).

Phospholipase (PA_2) is a standardized product, which cleaves the fatty acid at the second position in phospholipids.

APPLICATION

Pancreatic enzymes effectively hydrolyze a variety of proteins and lipids, using the same natural process as the human digestive system.

Food: Protein Hydrolysis
The hydrolysis of milk and whey proteins represents an important application area. Hydrolyzing these proteins can enhance functional properties such as whip and taste, increase digestibility, and reduce allergenicity. Typical applications for these products include:

- Milk and whey proteins for infant formulations;
- Whey protein for the nutraceutical industry to facilitate digestion and rapid absorption; and
- Meat and seafood – to tenderize, as well as enhance digestibility and solubility.

Note: Some proteins contain a natural trypsin inhibitor, such as egg white and soy protein, making these foods unsuitable for proteolytic enzymes.

Food: Lipids / phospholipids
PA_2 is used extensively as a processing aid in many applications, including:

- the enzymatic degumming of vegetable oil;
- producing low fat cheese; and
- improving the heat stability and emulsifying properties of egg yolk and soy products.

Pharmaceutical / Therapeutic
Trypsin and chymotrypsin are utilized most commonly as digestive aids, but they are also very effective in other applications, including pharmaceutical and therapeutic products such as anti-inflammatories and topical treatments of burns and wounds.

Research: Cell Biology / Protein Science
Trypsin is used extensively in protein sequencing, tissue dissociation and tissue culturing work.

Cosmetics
Proteolytic enzymes are often used as exfoliating agents in cosmetic products.

BENEFITS / ADVANTAGES

Neova's experienced technical and processing advisors work with customers, developing blends and formulating products to suit specific needs. The applications list below serves as a starting point – Neova Technologies is committed to working with customers to create the optimal solution for new applications.

With the exception of phospholipase, all pancreatic enzymes are lyophilized (freeze-dried), resulting in enhanced solubility and minimal dust.

Raw materials are sourced from government-certified facilities. All extraction and refining is done under cGMP guidelines for active pharmaceutical ingredients (API).

Application & Recommended Preparations	Chymotrypsin VI	Chymotrypsin XI	Protease II	Protease IV	Protease XI	Trypsin 1:250	Trypsin 1:300	Trypsin 1:400	Trypsin II	Trypsin IV	Trypsin V	Trypsin VI	Trypsin XI	Trypsin XV	Phospholipase
Food	✓										✓	✓		✓	✓
Nutriceutical		✓		✓	✓							✓			
Cell Biology / Science						✓	✓	✓	✓	✓			✓		
Pharmaceutical			✓			✓		✓	✓	✓					
Cosmetic		✓			✓										

Neova Technologies Inc. | 31212 Peardonville Road, Abbotsford BC, Canada V2T 6K8 Telephone 604.857.0695 Toll Free 877.707.3447 Facsimile 604.857.2679 info@neovatech.com
Neova Technologies B.V. | Landbouwweg 83, 3899 BD Zeewolde, The Netherlands Telephone +31.36.522.6300 Facsimile +31.36.522.6833 www.neovatech.com