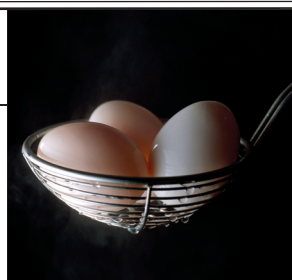


Phospholipase A₂: Modified Egg Yolk

PA₂ can be used in the production of heat-stable egg yolk. Enzyme-modified egg yolk offers a number of benefits in various food systems.



Pancreatic Enzymes

Phospholipase A₂ (PA₂) is an enzyme derived from porcine pancreas. It serves as a catalyst in the hydrolysis of the fatty acid in the second position of phospholipids/lecithin.



This process results in the conversion of approximately 70% of the lecithin found in egg yolk to lysolecithin, which has much better emulsifying properties than lecithin.

APPLICATION

PA₂ can be used in the production of heat-stable egg yolk. Enzyme-modified egg yolk offers a number of benefits in various food systems, including mayonnaise, sauces, dressings, baking and ice cream.

One benefit provided by enzyme-modified egg yolk is better emulsifying properties than untreated egg yolk; this functionality serves to stabilize otherwise incompatible ingredients.

Modified egg yolk also demonstrates a high degree of stability at elevated temperatures (i.e. 70° - 80° C) compared to untreated yolk that has little tolerance for temperatures above 60° C. Modified egg yolk treated with PA₂ has demonstrated superior stability at retort temperatures above 150° C when used in certain food systems (i.e., mayonnaise). This stability allows for the incorporation of pasteurization into processing, which is critical for microbial quality and which also contributes to increased shelf life.

Increased viscosity is another benefit offered by modified egg yolk, which is particularly important in the production of mayonnaise.

OPTIMAL RANGES

Figures 1 and 2 demonstrate the effect of pH and temperature on the activity of PA₂.

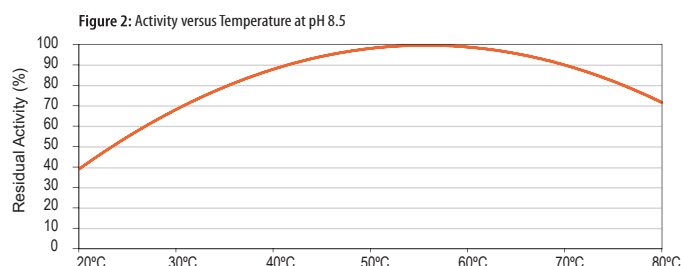
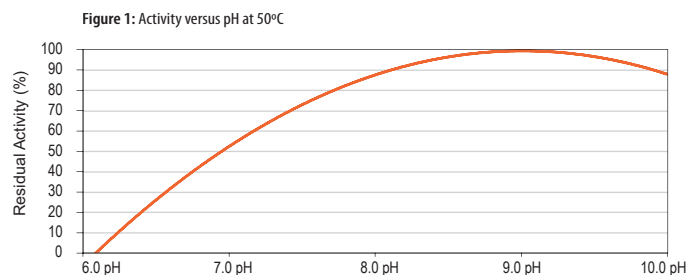
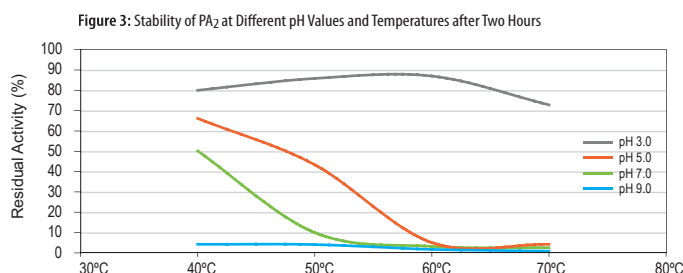


Figure 3 demonstrates the effect of different pH values at different temperatures on the enzymatic activity of PA₂.



PURITY / ACTIVITY

PA₂ preparations meet both the current Food Chemical Codex (FCC) specifications and the Joint WHO/FAO Expert Consultation on Food Additives (JECFA) Compendium of Specifications for Food Grade Enzyme Preparations.

BENEFITS / ADVANTAGES

A key benefit associated with using Neova pancreatic 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).

Neova's PA₂ complies with the recommended purity requirements for food grade enzymes provided by the joint FAO/WHO Expert Committee on Food Additives (JECFA), and the Food Chemical Codex (FCC).

REGULATORY STATUS

- E.C. (Enzyme Classification) Numbers: Phospholipase A (porcine pancreatic) – EC 3.1.1.4
- CAS (Chemical Abstracts Registry) Number: Phospholipase – 9001-84-7

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