

Other value-enhancing solutions from Chr. Hansen:

- CHY-MAX® M, a high yield, second generation, fermentation-produced chymosin.
- YieldMAX®, developed together with Novozymes, enhances fat value and improves yield the production of pizza cheese.
- LactoYIELD®, also developed together with Novozymes, enhances whey value and converts lactose into the value-added product lactobionic acid.
- Easy-Set®, a cost attractive, consistent, and ready-to-use culture system used in the manufacture of Continental and Pasta Filata type cheeses
- Propionic acid cultures improve flavor and eye formation in ripened cheese
- Mild-O cultures reduce bitterness in cheese



Figure: patented EBA chromatography columns used for purification of HANNILASE® XP

Don't take risks with side-activities:
Choose HANNILASE® XP!

Don't take risks with thermolability:
Choose HANNILASE® XP

More than 135 years of experience in the dairy industry

Chr. Hansen is a global biotechnology company that provides natural ingredients to the food, dairy, dietary supplement, infant formula, pharmaceutical, and agricultural industries.

In 1874, Christian D.A. Hansen defined the benchmark with his standardized animal rennet. In the 1970s, microbial coagulants were developed as rennet substitutes to overcome the shortage in raw materials needed for the manufacture of rennet.

Today, HANNILASE® XP sets the quality standard for microbial coagulant.

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CHR HANSEN

Improving food & health

HANNILASE® XP

Extra purified *Rhizomucor miehei* coagulant for cheese



HANNILASE®

We won't claim that HANNILASE® can do everything pure chymosin can, but in some applications, the best mucorpepsin is certainly 'fit for use'. It is a perfect low-cost coagulant for Organic cheese and for home-made and informal cheese production where yield and flavor defects are less of an issue. It is also recommended where the functionality of a proteolytic coagulant is needed for rapid break-down in cheese texture.

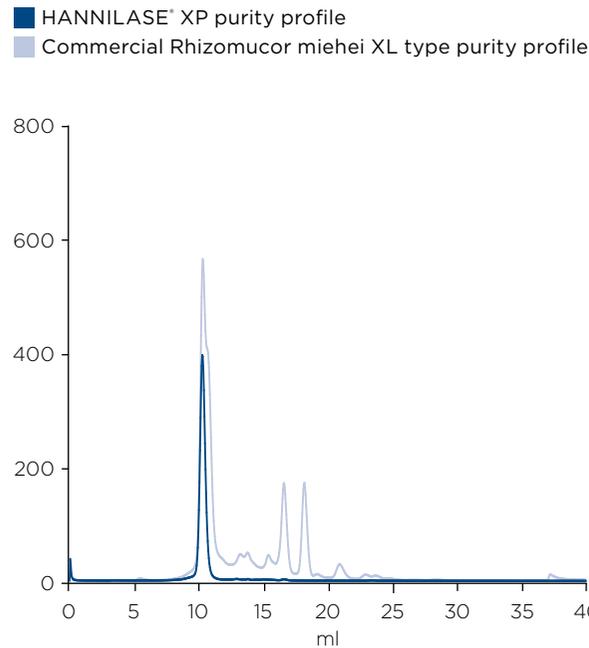
Not all mucorpepsins are the same

Rhizomucor miehei is a common soil fungus which naturally produces a thermostabile form of mucorpepsin together with secondary enzymes including fat-degrading lipases and starch-degrading amylases. Secondary enzymes are undesirable in cheese as they may lead to defects such as rancid off-flavors. Secondary enzymes such as amylases can degrade starch, making the application of whey proteins unsuitable for starch-containing foods.



eXtra Purified HANNILASE® XP is now available

Abs. Measured 280nm



HANNILASE® XP sets a new purity standard in the market

Instead of inactivating secondary enzymes, Chr. Hansen has now implemented an approach whereby the mucorpepsin is isolated from the fermentation broth. Using the patented EBA chromatographic technology, mucorpepsin can be isolated from the crude broth at very high purity levels, eliminating any risk of side-activities. The figure above shows the purity profile of HANNILASE® XP compared to a commercial R. miehei XL product in the market.

HANNILASE® XP/XL is thermolabile

One of the draw-backs of mucorpepsin is the thermo stability of the enzyme. It is undesirable to have proteolytic activity after whey pasteurization for advanced whey use. Thermolability is not defined by international standards. However, Chr. Hansen has a clear definition of thermolability with three different classes. L is the natural enzyme with limited thermal inactivation. XP/XL is mucorpepsin with almost complete thermal inactivation. TL products, in between L and XP/XL, are based on outdated technology. Some producers use the name XL when in fact supplying TL type.

Heat lability of mucorpepsin

