







Seafood, milk, egg and meat industries propose a wide range of products and by-products (fish meals, milk and egg fractions, blood, bones...) of great interest e.g. because of the presence of essential amino-acids or unique polysaccharides in significant amounts. Cracking and transformation of these raw materials yield ingredients that are widely applied in the food industry e.g. sports nutrition, clinical nutrition, baby food, dietetic food and sometimes in pet food.

Industrial transformations are often carried out under moderate conditions using enzymes technology in order to keep most of the nutritional value of the extracted ingredients. Another key advantage of enzyme technology is the absence of organic solvents meaning environmental friendly processes in line with present consumers' trends.

## PROLYVE... enzymes

Most enzymes used in that industry are proteases; therefore LYVEN proposes its PROLYVE® range:

Prolyve®, Pancrealyve®, Lypain®						
Composition			*Recommended dosage (mg per 100g protein)			
	Enzymes	Biological origin	Form	Optimal temperature range	Optimal pH range	Dosage*
<b>Prolyve® 1000</b>	Serine alkaline protease	<i>Bacillus licheniformis</i>	Liquid	50-60°C	7-10	30 -200
<b>Prolyve® BS</b>	Metalloprotease	<i>Bacillus subtilis</i>	Powder	45-55°C	6.5 - 7.5	300 -1000
<b>Prolyve® BS L</b>	Metalloprotease	<i>Bacillus subtilis</i>	Liquid	45-55°C	6.5 - 7.5	300 -1000
<b>Prolyve® BS 2L</b>	Metalloprotease	<i>Bacillus subtilis</i>	Liquid	45-55°C	6.5 - 7.5	100 - 500
<b>Prolyve® NP conc</b>	Aspartyl protease	<i>Aspergillus oryzae</i>	Powder	45-45°C	6 - 9	1 - 10
<b>Prolyve® NP liquid</b>	Aspartyl protease	<i>Aspergillus oryzae</i>	Liquid	45-45°C	6 - 9	5 - 50
<b>Prolyve® PAC conc</b>	Aspartyl protease	<i>Aspergillus niger</i>	Powder	50-60°C	2.5 - 5.5	1 - 10
<b>Prolyve® PAC 30 L</b>	Aspartyl protease	<i>Aspergillus niger</i>	Liquid	50-60°C	2.5 - 5.5	5 - 50
<b>Pancrealyve®</b>	Proteases and amylases	Pig pancreas	Powder	45-55°C	7.5 - 8.5	5 - 50
<b>Lypain® 6500 L</b>	Thiol protease	<i>Carica papaya</i>	Liquid	50-65°C	5.5 - 8.5	5 - 50
<b>Lypain® 48000</b>	Thiol protease	<i>Carica papaya</i>	Powder	50-65°C	5.5 - 8.5	0.5 - 5

all above references are issued from non-GM organisms



to catalyse your ambition

## Peclyve... enzymes

Fruits, vegetables and many other plants contain highly valuable active substances (antioxidants, colouring foodstuff, oligosaccharides, lipids, glycoprotein, vitamins...) of interest for pharmaceutical, cosmetic and diet applications. Extraction of these substances must often be performed with Cell Wall Degrading Enzymes (CWDE) like cellulases, hemicellulases, pectinases, proteases...in order to keep all potentialities of the targeted substances.

Solid state fermentation is a unique technology able to deliver wide CWDE spectrum quite relevant for these industrial processes. Therefore LYVEN proposes a wide range of CWDE dedicated to that industry. The knowledge of cell wall biochemical structure of each plant material is very useful to select the right enzymatic preparation. Our technical service is willing to examine your inquiries regarding the specific plant material that you want to transform. Based on cell wall biochemical structure we shall be able to approach the optimal enzymes you need.

Cellulyve®, Extralyve®, Glucalyve®, Peclyve®, Lipolyve®						
Composition			*Recommended dosage (mg per 100g Dry matter)			
	Enzymes	Biological origin	Form	Optimal temperature range	Optimal pH range	Dosage*
<b>Cellulyve® 50L</b>	Cellulases, Xylanases	<i>Trichoderma longibrachiatum</i>	Liquid	45-60°C	4-6	5 - 20
<b>Cellulyve® 50LC</b>	Active cellulases on native cellulose	<i>Trichoderma longibrachiatum</i>	Liquid	45-60°C	4-6	5 - 20
<b>Cellulyve® AN Conc</b>	β-glucanases, cellulases, β-mannanases	<i>Aspergillus niger</i>	Powder	40-50°C	3.5-5.5	2 - 10
<b>Cellulyve® AN 1500L</b>	β-glucanases, cellulases, β-mannanases	<i>Aspergillus niger</i>	Liquid	40-50°C	3.5-5.5	5 - 20
<b>Cellulyve® TR 400</b>	Cellulases, β-glucanase	<i>Trichoderma longibrachiatum</i>	Powder	50-60°C	2.5-5.5	5 - 20
<b>Extralyve® L</b>	Pectinases	<i>Aspergillus niger</i>	Liquid	50-60°C	3.5-5.5	10 - 50
<b>Extralyve® P</b>	Pectinases	<i>Aspergillus niger</i>	Powder	50-60°C	3.5-5.5	10 - 50
<b>Glucalyve® 1500P</b>	β-glucanases, β-xylanases Cellulase free	<i>Aspergillus niger</i>	Powder	40-55°C	3.5-5.5	10 - 50
<b>Glucalyve® PB 750</b>	β-glucanases, β-xylanases, cellulases	<i>Talaromyces emersonii</i>	Liquid	50-80°C	4.5-6	10 - 20
<b>Peclyve® LI</b>	Pectinases, β-glucanases, cellulases, β-mannanases	<i>Aspergillus niger</i> <i>Trichoderma longibrachiatum</i>	Liquid	40-55°C	3.5-6	20 - 100
<b>Peclyve® LIF+</b>	Pectinases, β-glucanases, cellulases, β-mannanases	<i>Aspergillus niger</i>	Liquid	40-55°C	3.5-5.5	10 - 70
<b>Peclyve® LIF+ Conc</b>	Pectinases, β-glucanases, cellulases, β-mannanases	<i>Aspergillus niger</i>	Liquid	40-55°C	3.5-5.5	3 - 20
<b>Peclyve® SF</b>	Polygalacturonase	<i>Aspergillus niger</i>	Liquid	40-55°C	3-6	5 - 10
<b>Peclyve® ARA B</b>	Endo-arabanase Pectinases	<i>Aspergillus niger</i>	Liquid	40-50°C	4-6	3 - 20
<b>Peclyve® Extracolor Pro</b>	Pectinases Hemicellulases	<i>Aspergillus niger</i>	Powder	40-50°C	3.5-5.5	30 - 100
<b>Peclyve® Extracolor Cell</b>	Pectinases Cellulases	<i>Aspergillus niger</i>	Powder	40-55°C	3.5-5	10 - 50
<b>Peclyve® EXG</b>	Pectinases Xyloglucanases	<i>Aspergillus niger</i> <i>Trichoderma viride</i>	Liquid	40-55°C	4-6	50 - 100
<b>Lipolyve® CC</b>	Lipases	<i>Candida sp.</i>	Powder	45-60°C	6-8	30 - 100
<b>Lipolyve® R</b>	Lipases	<i>Rhizopus oryzae</i>	Powder	35-40°C	6.5-7.2	10 - 30
<b>Lipolyve® AN</b>	Lipases	<i>Aspergillus niger</i>	Powder	35-40°C	4-7	150 - 400

all above references are issued from culture of non-GM microorganisms



Cellulyve®  
Prolyve®  
Peclyve®  
Glucalyve®  
Lipolyve®  
Extralyve®  
range

## NUTRITION and Health for MICROORGANISMS too

### Fermentation industry

The fermentation industry includes the large production of yeast (for bakers, winemakers, brewers) and lactic bacteria (for the dairy industry mainly). Besides, organic acids (e.g. citric acid), vitamins but also specific fine chemicals of interest e.g. for the pharmaceutical, cosmetics, and aroma industries are also produced by industrial fermentative processes.

Natural process  
Yield  
Productivity  
Cost cutting  
Valorisation  
of agro-resources  
Sustainability  
Reliability

Feeding microorganisms with cheap agro resources is a relevant route for cost cutting in those fermentation industries. A key issue is to find out a reliable supply of agro resource with regular quality and price. Typically wheat bran, rapeseeds, beet pulps, corn cobs, rice bran... may be interesting candidates that for.

Besides logistics issues linked to that supply, biochemical degradation of these raw materials has to be carried out under moderate conditions in order to get as much active nutrients as possible for the microbes to be fed. Enzymatic degradation by cell wall and protein degrading enzymes is more and more the preferred way to reach the goal.

Cellulyve®, Prolyve®, Peclyve®, Glucalyve®, Lipolyve®, Extralyve®, enzymes listed above make these transformations feasible under mild conditions and acceptable costs. Let's discuss on the specific items that you would like to study with LYVEN application team.

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Catalyse your ambition

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