



## Product catalog 2018

### **Introduction**

ChiralVision offers a range of immobilized enzymes under the brand name Immozymes™. Immobilization offers easier separation and reuse of enzymes thereby making production processes more robust and cost effective. Additionally, process conditions can be chosen with increased flexibility.

### **Immozymes**

A large collection of different carrier materials in varying particle sizes are screened for applicability to various enzymes. For each individual enzyme optimization of activity and stability is performed. After immobilization all Immozymes are washed extensively. Finally, they are dried yielding an enzyme that can be stored for prolonged times and used in water-free media.

### **Kits**

For screening purposes, all (immobilized) enzymes are available as kits for easy process development.

### **Immobeads**

Immobilization of enzymes and proteins in general required special carriers. ChiralVision offers special carriers with high porosity and various binding modes for optimal immobilization.

<b>Lipases - Immobilized formulations</b>		<i>Pricing in euro (ex. shipping)</i>			
<b>Product nr.</b>	<b>Lipases - Immobilized formulations - Pricing in euro (ex. shipping)</b>	<i>price / kg</i>			
		<b>100 g</b>	<b>1 kg</b>	<b>10 kg</b>	<b>100 kg</b>
IMMCALA-T2-150	lipase A from <i>Candida antarctica</i> (CaLA, NovoCor AD L <sup>1</sup> ), covalent on IB-150A. Activity: 2500 TBU / g	249	1050	1025	975
IMMCALB-T1-350	lipase B from <i>Candida antarctica</i> (CaLB1), adsorbed on acrylic beads. Activity: 11500 PLU / g	249	1150	975	900
IMMCALB-T2-150	lipase B from <i>Candida antarctica</i> (CaLB <sup>1</sup> ), covalent on IB-150A. Activity: 2500 TBU / g, 5000 PLU / g	249	1150	975	875
IMMCALB-T2-150XL	lipase B from <i>Candida antarctica</i> (CaLB <sup>1</sup> ), covalent on IB-150A. Activity: 5000 TBU / g, 15000 PLU / g	349	1695	1450	1150
IMMCALBY-T1-350	generic lipase B from <i>Candida antarctica</i> (CaLB2), adsorbed on acrylic beads. Activity: 10000 PLU / g	249	1150	975	925
IMMCALBY-T2-150	generic lipase B from <i>Candida antarctica</i> (CaLB <sup>2</sup> ), covalent on IB-150A. Activity: 3000 TBU/g, 8000 PLU/g	249	1150	995	900
IMMRML-T2-150	lipase from <i>Rhizomucor miehei</i> (Lipozyme <sup>1</sup> ), covalent on IB-150A. Activity: 500 TBU / g	249	1950	1325	
IMMTLL-T2-150	<i>Thermomyces lanuginosa</i> lipase (Lipolase <sup>1</sup> ), covalent on IB-150A. Activity: >5000 TBU/g, 5000 PLU/g	249	995	925	850
IMMCRL-T2-150	lipase from <i>Candida rugosa</i> (CRL <sup>3</sup> ), covalent on IB-150A. Activity: 250 TBU / g	295	1990	1025	
IMMCCMO-T2-150	lipase from <i>C. cylindracea</i> (equal to <i>C. rugosa</i> ) (lipase OF <sup>6</sup> ), covalent on IB-150A. Activity: 500 TBU / g	249	1050	975	
IMMABC-T2-150	lipase from <i>Pseudomonas cepacia</i> (Amano PS <sup>4</sup> ), covalent on IB-150A. Activity: 1500 TBU / g	249	1050	1025	
IMMAPF-T2-150	lipase from <i>Pseudomonas fluorescens</i> (Amano AK <sup>4</sup> ), covalent on IB-150A. Activity: 750 TBU / g	249	1050	1025	
IMMARO-T2-150	lipase from <i>Rhizopus oryzae</i> (Amano F-AP15 <sup>4</sup> ), covalent on IB-150A. Activity: 500 TBU / g	299	1865	1025	
IMMAMJ-T2-150	lipase from <i>Mucor javanicus</i> (Amano M <sup>4</sup> ), covalent on IB-150A. Activity: 300 TBU / g	249	1250	-	
IMMANA-T2-150	lipase from <i>Aspergillus niger</i> (Lipase A <sup>4</sup> ), covalent on IB-150A. Activity: 40 TBU / g	249	1250	-	
IMMRNA-T2-150	lipase from <i>Rhizopus niveus</i> (Lipase <sup>4</sup> ), covalent on IB-150A. Activity: 10 TBU / g	249	1250	-	
IMMASMQ-T2-150	lipase from <i>Alcaligenes sp.</i> (lipase QLM <sup>6</sup> ), covalent on IB-150A. Activity: 200 TBU / g	249	-	-	
IMMRES-T2-150	lipase Resinase HT (Resinase HT <sup>1</sup> ), covalent on IB-150A. Activity: 3000 TBU / g, 6000 PLU / g	249	995	925	
IMMLIPX-T2-150	lipase Lipex 100L (Lipex 100L <sup>1</sup> ), covalent on IB-150A. Activity: 3000 TBU / g, 9000 PLU / g	249	995	925	
IMML51-T1-350	lipase NZ 51032 (Cutinase1) adsorbed on acrylic beads. Activity: 3000 PLU / g	249	1050	950	
IMML51-T2-150	lipase NZ 51032 (Cutinase <sup>1</sup> ), cov. on IB-150A. Activity: 5000 TBU / g, 5000 PLU / g	249	995	925	
IMMAULI-T1-350	lipase from <i>Bacillus subtilis</i> (lipase7) adsorbed on dry acrylic beads Activity: 2000 TBU / g	249	1050	950	
IMMAULI-T2-150	lipase from <i>Bacillus subtilis</i> (lipase <sup>7</sup> ), covalent on IB-150A. Activity: 1750 TBU / g	249	1050	950	
IMMLIP-1800	Immozyme lipase Kit, 18 immobilized lipases on IB-150A. 1 g each	950			
	*Registered trademark from: 1) Novozymes; 2) c-Lecta; 3) Sigma-Aldrich; 4) Amano; 5) Fluka; 6) Meito; 7) Aum Enzymes.				

Unit definition: 1 TBU unit = 1 µmol butyric acid released per minute / g immobilized enzyme at 40°C and pH 7.5.

Unit definition: 1 PLU unit = 1 µmol propyl laurate formed per minute / g immobilized enzyme at 60°C and pH 7.5.

<b>Proteases - Immobilized formulations</b>		<i>Pricing in euro (ex. shipping)</i>			
<b>Product nr.</b>	<b>Proteases - Immobilized formulations - Pricing in euro (ex. shipping)</b>	<i>price / kg</i>			
		<b>100 g</b>	<b>1 kg</b>	<b>10 kg</b>	
IMMALC-T2-250	Protease from Bacillus sp.(Subtilisin, Alcalase), covalent on acrylic beads. Activity: 400 ELU / g.	249	845	799	
IMMSAV-T2-250	Protease from Bacillus sp. (Subtilisin, Savinase), covalent on acrylic beads. Activity: 500 ELU / g.	249	845	799	
IMMEVE-T2-250	Protease from Bacillus sp. (Subtilisin, Everlase), covalent on acrylic beads. Activity: 100 ELU / g.	249	845	799	
IMMESP-T2-250	Protease from Bacillus sp. (Subtilisin, Esperase), covalent on acrylic beads. Activity: 275 ELU / g.	249	845	799	
IMMCAR-T2-150	Protease from Mucor miehei (Acid protease), covalent on acrylic beads. Activity: 8 ELU / g.	249	845	799	
IMMP6-T2-250	Protease from <i>Bacillus licheniformis</i> (Protex 6L, Multifect PR 6L) covalent on acrylic beads. Activity: 400 ELU / g.	249	845	799	
IMMP7-T2-150	Protease from Bacillus amyloliquefaciens (Protex 7L, Multifect PR 7L), covalent on acrylic beads. Activity: 15 ELU / g.	249	845	799	
IMMP14-T2-150	Protease from Geobacillus sp. (Thermolysin, Protex 14L, PROTEINASE T) covalent on beads. Activity: 5 ELU / g.	249	845	799	
IMMP15-T2-150	Protease from Trichoderma reesei (Protex 15L, Multifect PR 15L) covalent on acrylic beads. Activity: 5 ELU / g.	249	845	799	
IMMP30-T2-150	Protease from Bacillus subtilis (Protex 30L, Multifect PR 30L) covalent on acrylic beads. Activity: 225 ELU / g.	249	845	799	
IMMP40L-T2-150	Protease from Bacillus subtilis (Protex 40L, OPTIMASE PR 40L) covalent on acrylic beads. Activity: 400 ELU / g.	249	845	799	
IMMP50-T2-150	Protease from Aspergillus oryzae var. (Protex 50 FP, Multifect PR 50G) covalent on acrylic beads. Activity: 5 ELU / g.	249	845	799	
IMMP51-T2-150	Protease from Aspergillus oryzae (Protex 51 FP, Multifect PR 51G), covalent on acrylic beads. Activity 65 ELU/g	249	845	799	
IMMP89-T2-250	Protease from Bacillus subtilis (Protex 89L, OPTIMASE PR 89L), covalent on acrylic beads. Activity: 150 ELU/g.	249	845	799	
IMMAUAC-T2-150	Protease from Aspergillus niger (Acid protease), covalent on acrylic beads. Activity: 5 ELU / g.	249	845	799	
IMMAUNE-T2-150	Protease from Bacillus subtilis (Neutral protease), covalent on acrylic beads. Activity: 10 ELU / g.	249	845	799	
IMMAUAL-T2-250	Protease from Bacillus subtilis (Alkaline protease), covalent on acrylic beads. Activity: 175 ELU / g.	249	845	799	
IMMPAP-T2-150	Protease from Carica papaya (Papain), covalent on acrylic beads. Activity: 5 ELU / g.	299	1250	845	
IMMBRO-T2-150	Protease from pineapple stem (Bromelain), covalent on acrylic beads. Activity: 5 ELU / g.	499	2150	-	
IMMFIC-T2-150	Protease from fig tree latex (Ficin), covalent on acrylic beads. Activity: 5 ELU / g.	249	-	-	
IMMPROT-2000	Immozyme protease Kit, 20 immobilized proteases, covalent on acrylic beads, 1 gram each	975			
	<i>*Registered trademark from: 1-5 Novozymes; 6-14 Dupont-Genencor; 15-17 Aum Enzymes</i>				

Unit definition (ethyl lactate hydrolysis): 1 ELU unit = 1 µmol lactic acid released per minute / g immobilized enzyme at 25°C and pH 6.8.

<b>Proteases Non-Immobilized - Dupont-Genencor</b>	<i>Pricing in euro (ex. shipping)</i>
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ChiralVision offers 9 bulk proteases developed and produced by Dupont-Genencor

Product nr.	Dupont-Genencor proteases (not immobilized) - Pricing in euro (ex. shipping)	5 g	250 ml	1 l	2.5 l
CV-P6L	Protease from <i>Bacillus licheniformis</i> (Protex 6L, Multifect PR 6L). Liquid, activity: 2440 ELU / ml.	-	125	295	549
CV-P7L	Protease from <i>Bacillus amyloliquefaciens</i> (Protex 7L, Multifect PR 7L). Liquid, activity: 100 ELU / ml.	-	125	295	695
CV-P14L	Protease from <i>Geobacillus sp. (Thermolysin)</i> , Protex 14L, PROTEINASE T). Liquid, activity: 5 ELU / ml.	-	125	295	695
CV-P15L	Protease from <i>Trichoderma reesei</i> (Protex 15L, Multifect PR 15L). Liquid, activity: 5 ELU / ml.	-	-	295	549
CV-P30L	Protease from <i>Bacillus subtilis</i> (Protex 30L, Multifect PR 30L). Liquid, activity: 585 ELU / ml.	-	-	295	549
CV-P40L	Protease from <i>Bacillus subtilis</i> (Protex 40L, OPTIMASE PR 40L). Liquid, activity: 1630 ELU / ml.	-	125	295	549
CV-P50FP	Protease from <i>Aspergillus oryzae var.</i> (Protex 50 FP, Multifect PR 50G). Powder, activity: 20 ELU / g.	99			
CV-P51FP	Protease from <i>Aspergillus oryzae</i> (Protex 51 FP, Multifect PR 51G). Powder, activity: 570 ELU / g.	99			
CV-P89L	Protease from <i>Bacillus subtilis</i> (Protex 89L, OPTIMASE PR 89L). Liquid, Activity: 435 ELU / ml.	-		295	549
CV-GEN-900	- Kit with 9 proteases (non-immobilized) 20 ml or 5 g each	495			
	<i>Protex, Multifect and Optimase are registered tradenames of Dupont-Genencor</i>				

Unit definition (ethyl lactate hydrolysis): 1 ELU unit = 1 µmol lactic acid released per minute / g immobilized enzyme at 25°C and pH 6.8.

## Screening Kits (Immobilized) Enzymes

Catalog No.	Lipase and Protease Kits - Pricing in euro (ex. shipping)	Euro
IMMHYD-3800	Immozyme hydrolase Kit, 38 immobilized enzymes: lipases (18) and proteases (20), 1 g each	1825
IMMLIP-1800	Immozyme lipase Kit, 18 immobilized lipases, 1 g each	950
IMMPROT-2000	Immozyme protease Kit, 20 immobilized proteases, 1 gram each	975
CV-GEN-900	Genencor protease kit, 9 proteases (non-immobilized), 20 ml or 5 g each	495

## Screening Kit Immobead

Catalog No.	Immobead enzyme carrier Kit - Pricing in euro (ex. shipping)	Euro
IMMO-12	All 12 enzyme carriers (for covalent, ionic and adsorption binding of enzymes), 25 g each	549 €

All Immobeads are available separately		<i>euro / kg</i>		
Product nr.	Bead description	100 g	1 kg	10 kg
IB-COV-1 (IB-150A)	Type: Covalent, apolar; Matrix: Polyacrylic; Group: epoxide, butyl (75% wet)	99	149	1250
IB-COV-2 (IB-150P)	Type: Covalent, polar; Matrix: Polyacrylic; Group: epoxide (75% wet)	99	149	1250
IB-COV-3	Type: Covalent, polar; Matrix: Polyacrylic; Group: epoxide (66% wet)	99	375	
IB-ADS-1	Type: Adsorption, apolar; Matrix: Polyacrylic; Group: carboxylic ester (65% wet)	99	149	
IB-ADS-2	Type: Adsorption, apolar; Matrix: Styrene; Group: phenyl (75% wet)	99	235	
IB-ADS-3	Type: Adsorption, apolar; Matrix: Methacrylate; Group: octadecyl (58% wet)	99	295	
IB-ADS-4	Type: Adsorption, polar; Matrix: Styrene; Group: styrene, methyl (66% wet)	99	195	
IB-CAT-1	Type: Cationic, strong; Matrix: Styrene; Group: sulphonic (56% wet)	99	195	
IB-ANI-1	Type: Anionic, apolar; Matrix: Polyacrylic; Group: amino C6 spacer (78% wet)	99	360	
IB-ANI-2	Type: Anionic, weak; Matrix: Polystyrene; Group: tert. amine (55% wet)	99	225	
IB-ANI-3	Type: Anionic, weak; Matrix: Polystyrene; Group: quat. ammon type (72% wet)	99	225	
IB-ANI-4	Type: Anionic, strong; Matrix: Polystyrene; Group: quat. ammon type (62% wet)	99	225	

## Ordering information

### **Orders can be send to:**

- sales@chiralvision.com

### **Please provide:**

- contact person (+phone number and email address))
- shipping address
- billing email address
- internal ordering number
- VAT / tax identification number (in EU mandatory for tax free shipping. Outside EU it will speed up customs handling)

### **Shipping cost for 1 kg:**

Europe (EU) 40-50 euro (inquire)

Europe (non-EU) 50 euro

North-America 50 euro

Asia / all others 65 - 85 euro (inquire)

*Cost are based on a weight of 1 kg, for heavier shipments add 12 euro / kg.*

*\*\*\* Contact us for a quote in US dollars \*\*\**

ChiralVision' general Terms of Sale (see website) apply. Payment terms: 30 days. Prices are subject to change without notice.

### **Sales and technical support:**

ChiralVision

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