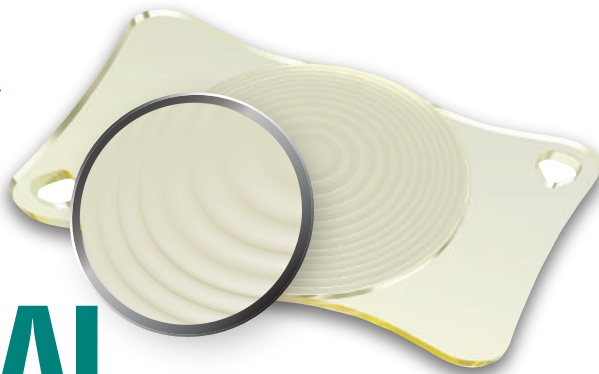


NEW

Acriva^{LD}
Trinova
Seamless Vision Technology Trifocal IOL

**THE WORLD'S FIRST
AND ONLY
SINUSOIDAL
TRIFOCAL IOL**

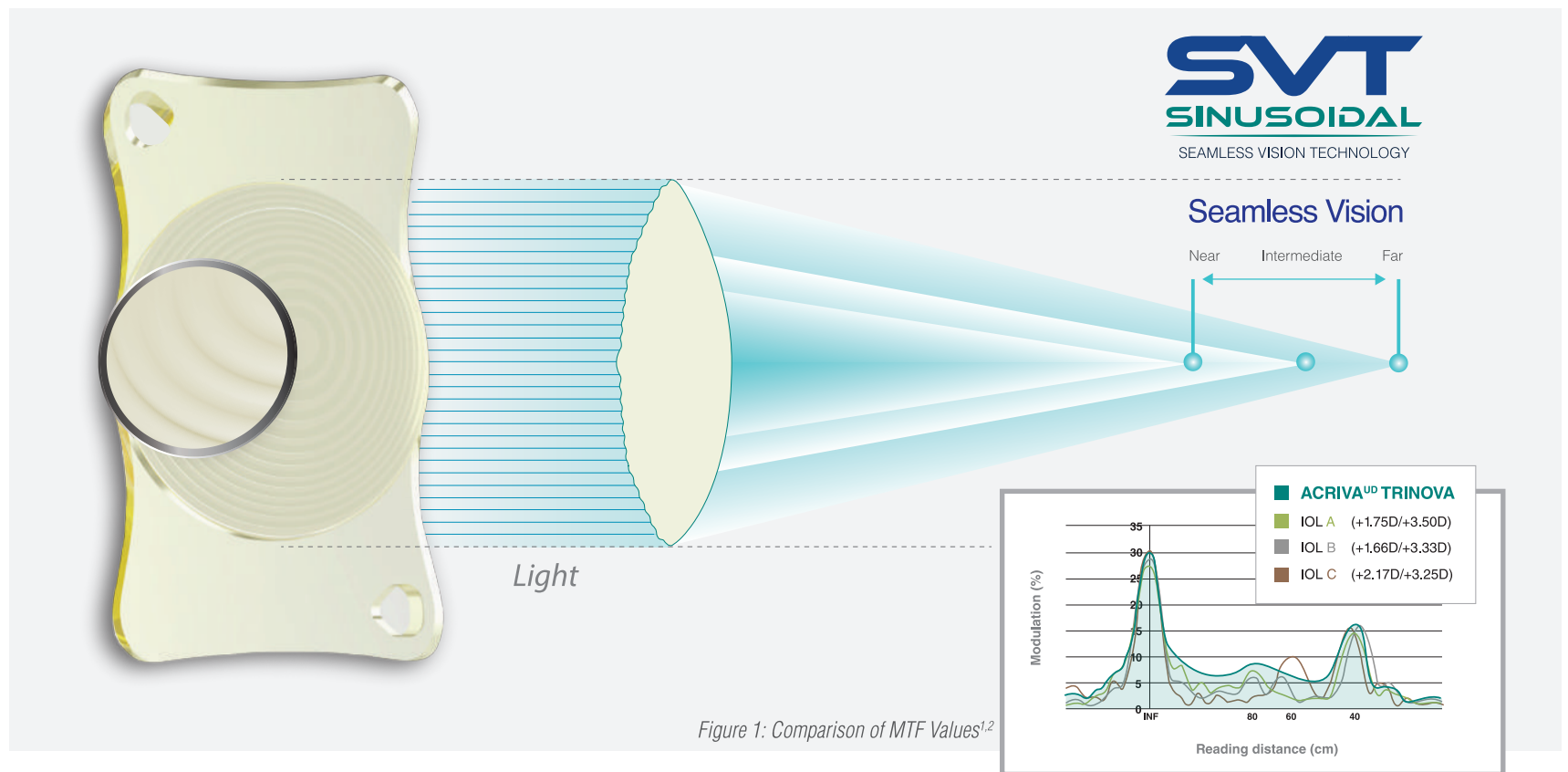


SVT
SINUSOIDAL
SEAMLESS VISION TECHNOLOGY

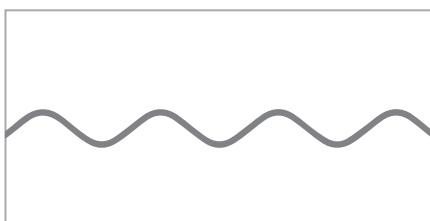
Patent pending

**Sinusoidal
Seamless
Vision
Technology**

ALL TRIFOCAL IOLS ARE NOT THE SAME!



THE WORLD'S FIRST AND ONLY SINUSOIDAL TRIFOCAL IOL



• Sinusoidal Pattern

Acryva^{UD} Trinova is the next-generation sinusoidal trifocal IOL designed with stepless zones. Twelve unique ridges create the highest light transmission and optimum light distribution through all optical diameters.

This pattern promises better contrast sensitivity and dynamic visual performance at all distances! Ultra Definition (UD) Aspheric optic and chromatic aberration-free structure leading to Enhanced Depth of Focus (EDOF) provide continuous vision – hence, spectacle independence at all distances. With this know-how, VSY Biotechnology improved EDOF optic design, and now introduces Sinusoidal Seamless Vision Technology (SVT).

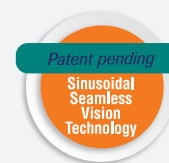


Acryva^{UD} Trinova is manufactured with Sinusoidal Seamless Vision Technology (SVT). The SVT is a unique patent-pending technique for producing an IOL optical surface that does not exhibit any sharp edges. It provides the best optical performance in trifocal IOL design. The lens shape is derived from sinusoidal functions and results in smoothly varying surface profiles. Therefore, ideal continuous vision is achieved, as opposed to common traditional overlapping diffraction pattern trifocal IOLs with sharp edges. This concept also helps to reduce halos and scattered light.

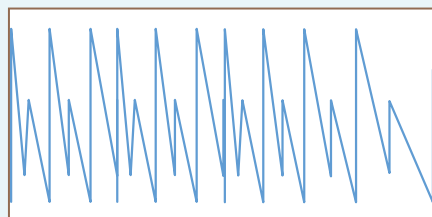
What is Sinusoidal SVT?

Benefits of Sinusoidal SVT

- Compensation effect on minor post-op refractive error
- Tolerance on slight tilts
- Minimized dysphotopsia due to reduced scattered light



TRADITIONAL TRIFOCAL IOLS



• Overlapping Pattern

The phase match Fresnel lens concept is widely used nowadays. However, typical outdated overlapping diffractive profiles have four drawbacks:

- o Big amount of light loss of between 15% and 20%
- o Vision disturbance due to stray light
- o Low light distribution in near-intermediate focus under mesopic conditions
- o Glare and halo problem at night

Traditional Overlapping Diffractive Pattern

Phase Match Fresnel Optic

IOL A (+1.75D/+3.50D)

IOL B (+1.66D/+3.33D)

IOL C (+2.17D/+3.25D)

Superior Features of Acriva^{UD} Trinova

- 92% effective light transmission to retina
- Widest depth of focus
- Excellent MTF results at all distances
- Outstanding visual outcomes in mesopic conditions

Highest Light Transmission

It is known that overlapping diffractive pattern trifocal IOLs cause significant light loss. Each one percentage of light loss affects patients' overall visual performance exponentially. Acriva^{UD} Trinova ensures maximum light transfer, thanks to its stepless diffractive zones. The higher the light transmission, the better the contrast sensitivity!

IOLs	Light Transmission	
Acriva^{UD} Trinova (+1.50D/+3.00D)	92%³	- New Generation Trifocal IOL with Sinusoidal Pattern (Patent Pending)
IOL A (+1.75D/+3.50D)	86% ⁴	- Traditional Trifocal IOL with Overlapping Diffractive Pattern
IOL B (+1.66D/+3.33D)	85.7% ⁵	- Traditional Trifocal IOL with Overlapping Diffractive Pattern
IOL C (+2.17D/+3.25D)	88% ⁶	- Traditional Trifocal IOL with Overlapping Diffractive Pattern

Table 1

Comfortable reading distances

+3.00D near addition and +1.50D intermediate addition of Acriva^{UD} Trinova is precisely designed with life quality of the patient in mind. Up to 80 cm reading distance will cover all daily requirements in near and intermediate vision. See the comparison table below.^{7,8,9}

IOLs	Intermediate Addition	Theoretical Reading Distance	Near Addition	Theoretical Reading Distance	Distance of Depth of Focus
Acriva ^{UD} Trinova	+1.50D	80 cm	+3.00D	38 cm	42 cm
IOL A:	+1.75D	68 cm	+3.50D	34 cm	34 cm
IOL B:	+1.66D	72 cm	+3.33D	36 cm	36 cm
IOL C:	+2.17D	55 cm	+3.25D	35 cm	20 cm

Table 2

References

3. Data on file.

4. Gatinel D, Pagnouille C, Houbrechts Y, Gobin L. Design and qualification of a diffractive trifocal optical profile for intraocular lenses. *J Cataract Refract Surg.* 2011;37(11):2060-2067.

5. Mojziz P, Pena-García p, Liehneova I, Zlak P, Alio J L. Outcomes of a new diffractive trifocal intraocular lens. *J Cataract Refract Surg.* 2014; 40:60-69.

6. Lee S, Choi M, Xu Z, Zhao Z, Alexander E, Liu Y. Optical bench performance of a novel trifocal intraocular lens compared with a multifocal intraocular lens. *Clinical Ophthalmology (Auckland, NZ).* 2016; 10:1031-1038. doi:10.2147/OPHT.S106646.

7. Data on file.

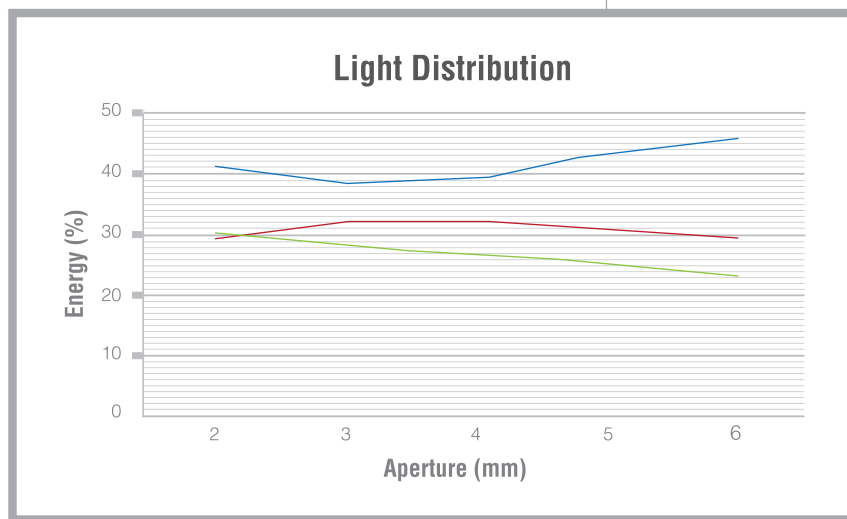
8. E.Law R, Aggarwal, H. Kasaby. Comparison of a bifocal and a trifocal intraocular lens. *Free Paper Session ESRS 2014 London.*

9. K.Gundersen. Diffractive multifocal IOLs: a comparative study of Finevision versus ReSTOR 2.5 and 3.0D. *Free Paper Session ESRS 2014 London.*



Balanced Light Distribution

Light distribution plays a big role in obtaining seamless, continuous vision. Conventional trifocal IOL designs distribute light energy in a ratio such that zones of discontinuity may be noticeable to patients. Acriva^{UD} Trinova incorporates a unique sinusoidal surface profile with twelve smooth ridges, providing a more continuous light-energy distribution. This leads to remarkable spectacle-free visual competencies not only in photopic, but also in mesopic conditions.⁷



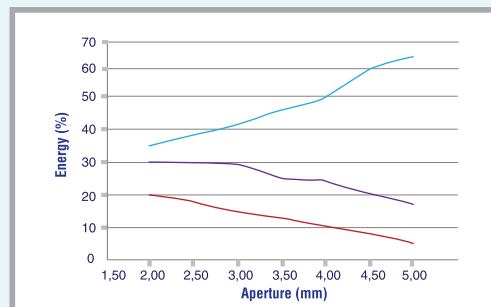
Light distribution in photopic condition:
41% Far, 30% Intermediate, and 29% Near

Light distribution in mesopic condition:
45% Far, 25% Intermediate, and 30% Near

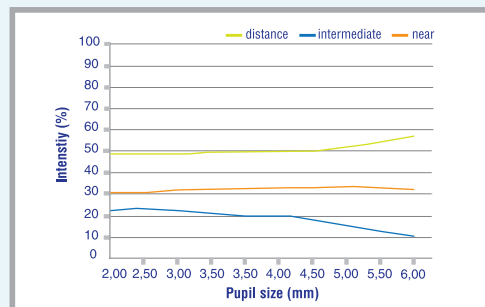
- Far
- Near
- Intermediate

Figure 2

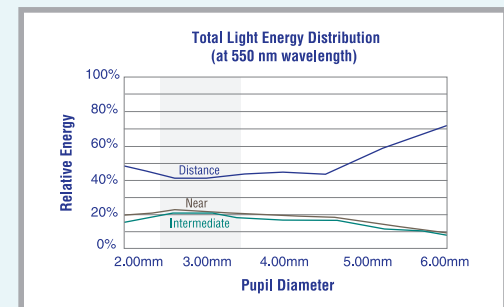
IOL A⁴ (+1.75D/+3.50D)



IOL B⁵ (+1.66D/+3.33D)



IOL C (+2.17D/+3.25D)



USAF Resolution Target Test

A resolution test pattern is, as the name implies, a tool for measuring the resolving power of an optical system. It consists of reference line patterns with well-defined thicknesses and spacings. The test helps demonstrating the performance of a lens in terms of its resolution in photopic and mesopic conditions.

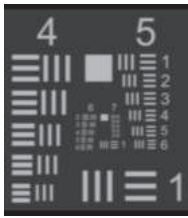

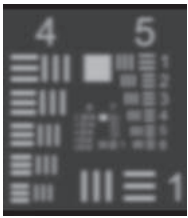









PHOTOPIC CONDITIONS ¹⁰				
		FAR	INTERMEDIATE	NEAR
Sinusoidal Pattern (New Generation)	Acriva ^{UD} Trinova (+1.50D/+3.00D)			
	IOL A (+1.75D/+3.50D)			
Overlapping Diffractive Pattern (Traditional)	IOL B (+1.66D/+3.33D)			
	IOL C (+2.17D/+3.25D)			

Figure 3

References
10. Data on file.

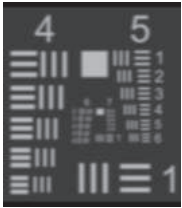
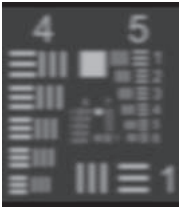

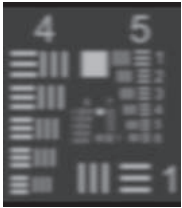








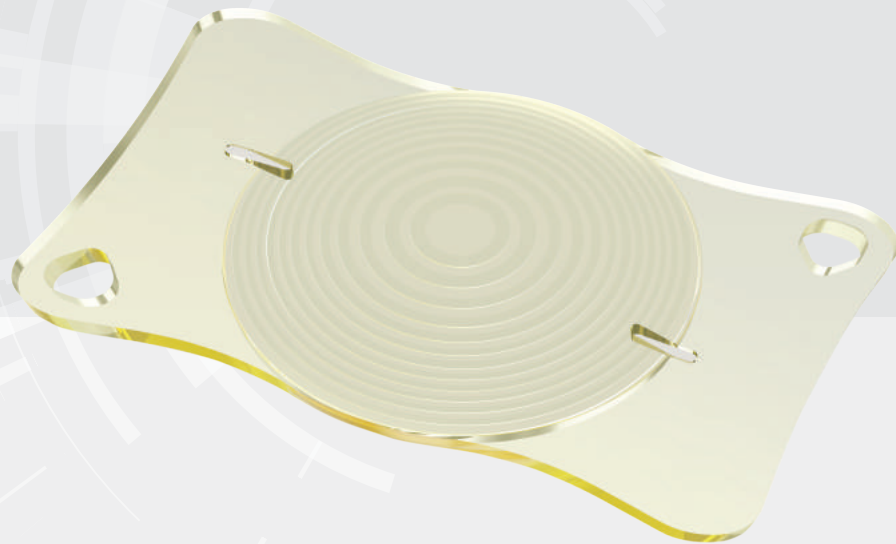
MESOPIC CONDITIONS ¹⁰				
	FAR	INTERMEDIATE	NEAR	
Acriva ^{UD} Trinova (+1.50D/+3.00D)				Sinusoidal Pattern (New Generation)
IOL A (+1.75D/+3.50D)				
IOL B (+1.66D/+3.33D)				Overlapping Diffractive Pattern (Traditional)
IOL C (+2.17D/+3.25D)				

Figure 4

Acriva^{UD} Trinova Toric is also available!

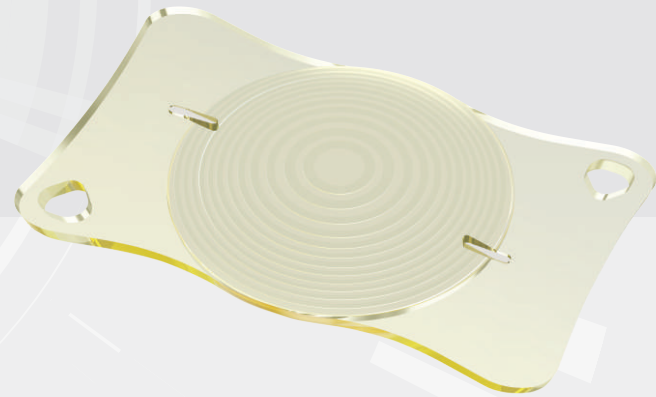
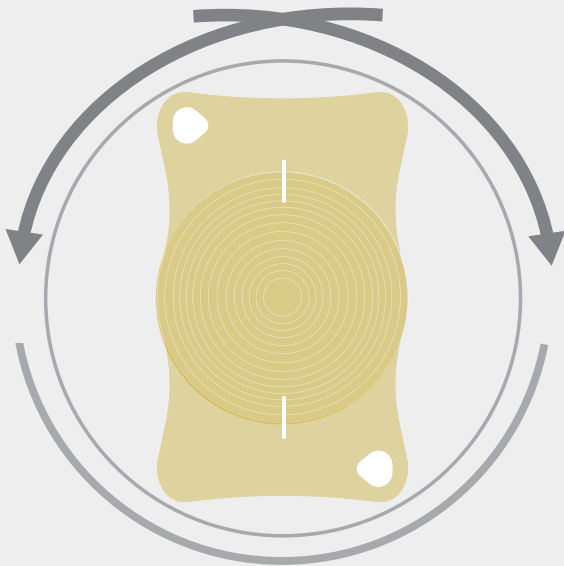


- Perfect Clinical Outcomes in Astigmatism Correction
- Excellent Post-Op Rotational Stability
- Alignment Possibility in Both Directions
- Wide Diopter Range
Sph 0.00D - 32.00D
Cyl 1.00D - 10.00D

Best Solution is Plate Haptic

Minimum SIA, Excellent Stability in MICS Design

Larger incision causes higher surgically induced astigmatism and directly affects post-operative refractive outcomes. Since Acriva^{UD} Trinova Toric with plate haptic design enables implantation through a sub-2.0-mm incision, it minimizes surgically induced astigmatism and stays in the capsular bag without rotation. Therefore, Acriva^{UD} Trinova Toric IOL with plate haptic design is the best choice.



The alignment of Acriva^{UD} Trinova Toric IOL is easier, as it can be rotated in both directions during the operation. Since the whole haptic surface is in contact with the capsular bag, plate haptic design always delivers excellent rotational stability.

Acriva^{UD} Easy Toric Calculator

Simple Tool For Toric Surgical Plan

The Acriva^{UD} Easy Toric Calculator is developed to assist you to easily plan your surgery and to help you maximize the benefits of your toric lens.

SURGEON

Name-Surname (*)

Clinic (*)

Phone (*)

E-mail (*)

Country

PATIENT

Name-Surname (*)

Additional Information (*)

IOL Type

LEFT EYE

K1 (Flat K)

Flat Axis

K2 (Steep K)

Steep Axis

IOL Spheric Power

Incision Location

CALCULATION DETAILS

Pre-Op Corneal Astigmatism

Surgically Induced Astigmatism

Crossed-Cylinder Result

Anticipated Residual Astigmatism

LENS DETAILS

IOL Spherical Equivalent

Cylinder Power (Corneal Plane)

Cylinder Power (IOL Plane)

Axis of Placement



Back Save Print Approve Order


Download
Acriva^{UD} Easy Toric Calculator App



You can access the **Acriva^{UD} Easy Toric Calculator** by visiting www.vsybiotechnology.com.

Download the application available for iPhone and iPad from the App Store or from the Google Play Store for all Android devices.

For more information, please see Acriva^{UD} Easy Toric Calculator User Guide.

	Acriva ^{UD} Trinova	Acriva ^{UD} Trinova Toric
General	Trifocal Seamless Vision Technology, Foldable, Single Piece, Aspheric, Achromatic, Hydrophobic Surface, UV and Violet Filter	
Optic Size	6.00 mm	
Optic Design	Trifocal SVT (Patent Pending)	Trifocal Toric SVT (Patent Pending)
Haptic Size	11.00 mm	
Haptic Design	Plate Haptic (suitable for MICS)	
Haptic Angle	0°	
Material	Hydrophobic Surface, BB (Blue Balance), Natural Chromophore, Dynamic Photofiltration	
Aspheric Value	Ultra Definition Mild Negative Correction	
Abbe Number	58	
Light Transmission	92.0 %	
Light Distribution	Photopic Conditions: 41% far - 30% intermediate - 29% near Mesopic Conditions: 45% far - 25% intermediate - 30% near	
Square Edge	360° All Enhanced Square Edge	
Refractive Index Wet	20°C / 35°C 1.462/1.462 ± 0.002	
Acoustic A Constant	118.0	
Optical A Constant	SRK- II: 118.0 SRK-T: 117.9 Haigis a0, a1, a2: 0.58, 0.4, 0.1 Hoffer Q pACD: 4.82 Holladay sf: 1.04 Barrett Universal II LF: 1.31	
Diopter Power Range	sph 0.0 D to +32.0 D (0.5 D increments)	sph 0.0 D to +32.0 D (0.5 D increments) cyl +1.0 D to +10.0 D (0.5 D increments)
Recommended Injector	Acrijet Green 1.8 (up to sph 25.0 D) Acrijet Green 2.0 (up to sph 28.0 D) Acrijet Green 2.2 (up to sph 30.0 D)	 Acrijet Green 1.8 (up to sph 25.0 D, cyl 5.0 D) Acrijet Green 2.0 (up to sph 28.0 D, cyl 5.0 D) Acrijet Green 2.2 (up to sph 30.0 D, cyl 5.0 D)



VSY Biotechnology BV
Strawinskylaan 1143, 1077 XX Amsterdam, The Netherlands
T: +31(0)62 147 38 46 F: +31(0)20 782 00 02
info@vsybiotechnology.com www.vsybiotechnology.com

