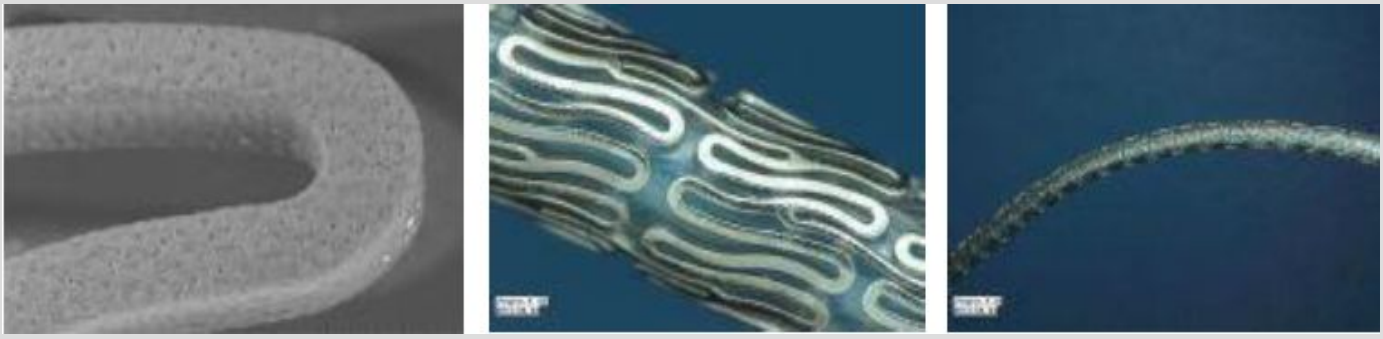
MSM® DES Sirolimus

SAFETY - EFFICACY - DELIVERABILITY

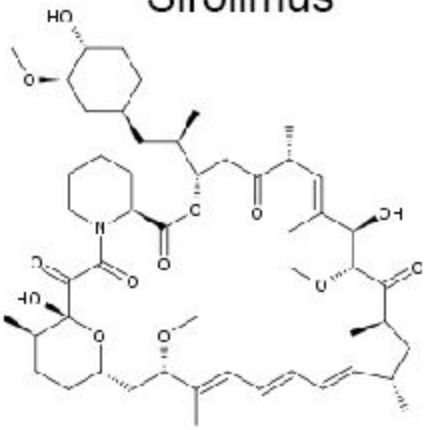


The MSM Sirolimus Eluting Coronary Stent System convinces with its trusted Cobalt Chromium

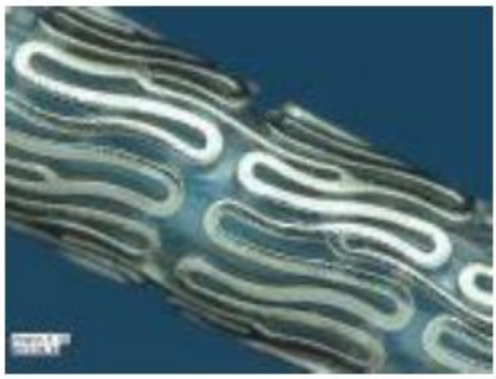
Platform and the largest size portfolio available.

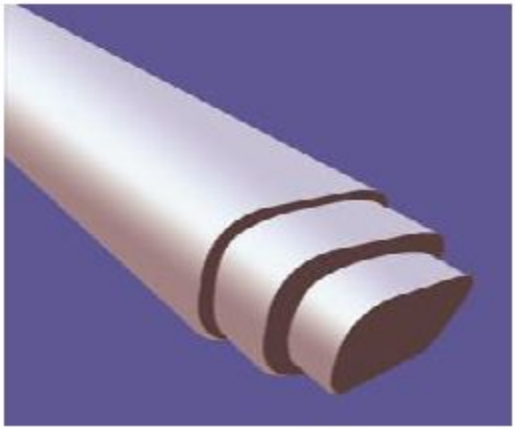
A fully biodegradable polymer coating containing Sirolimus (Rapamycin), enables controlled drug release preventing early thrombotic events and stent restenosis.
The biocompatible PLGA Polymer provides consistent, controlled and a 100 % drug release.
The Polymer degrades 100 % into carbon dioxide and water.
The decreased profile results in an increased flexibility and enables an easy side branch access.

Sirolimus

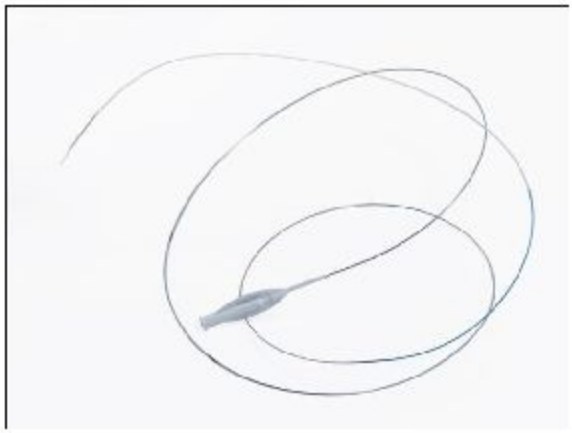


Stent design



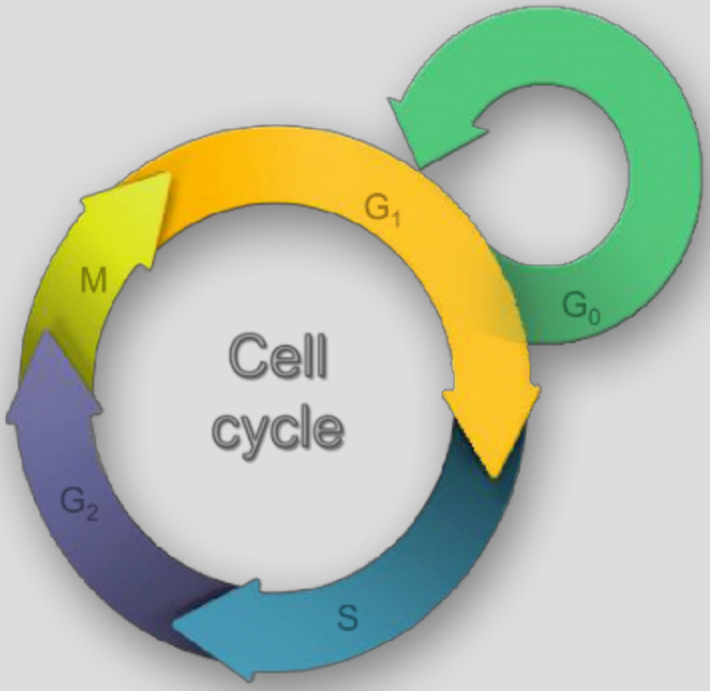


Double layers



Delivery System

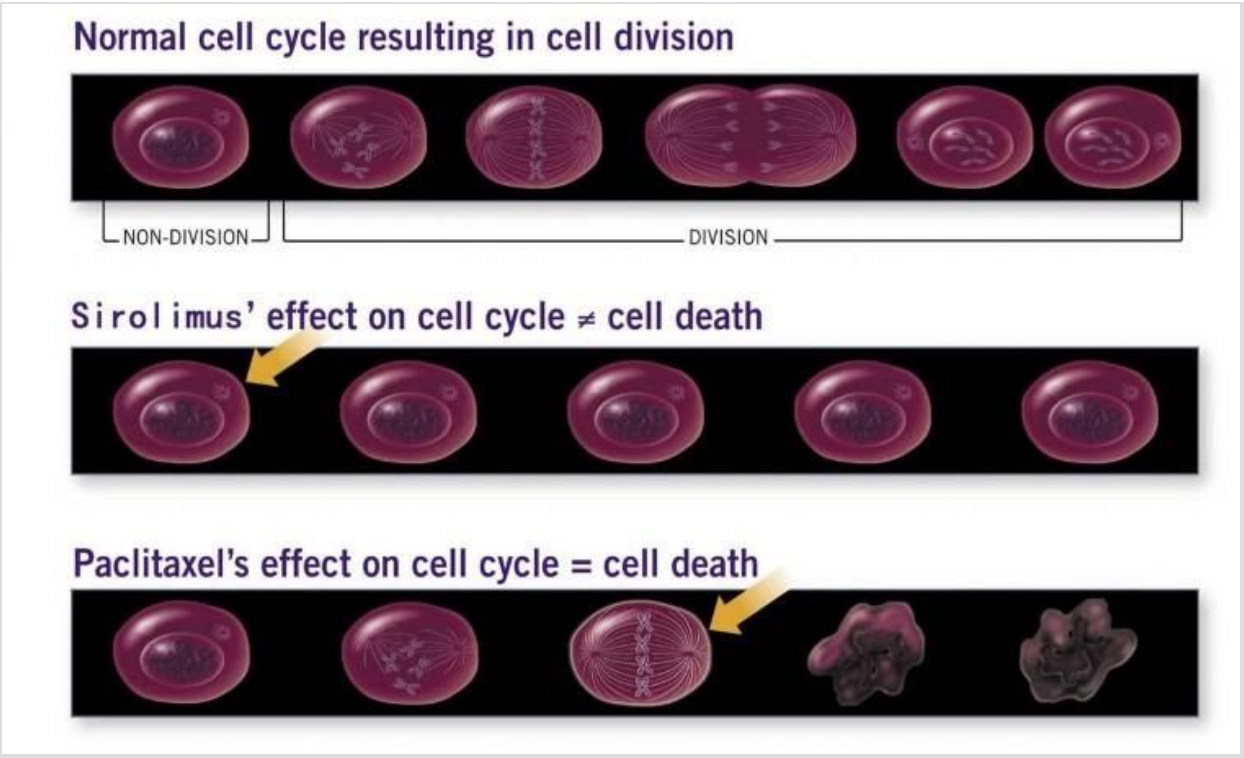
Safety and Efficiency of Sirolimus



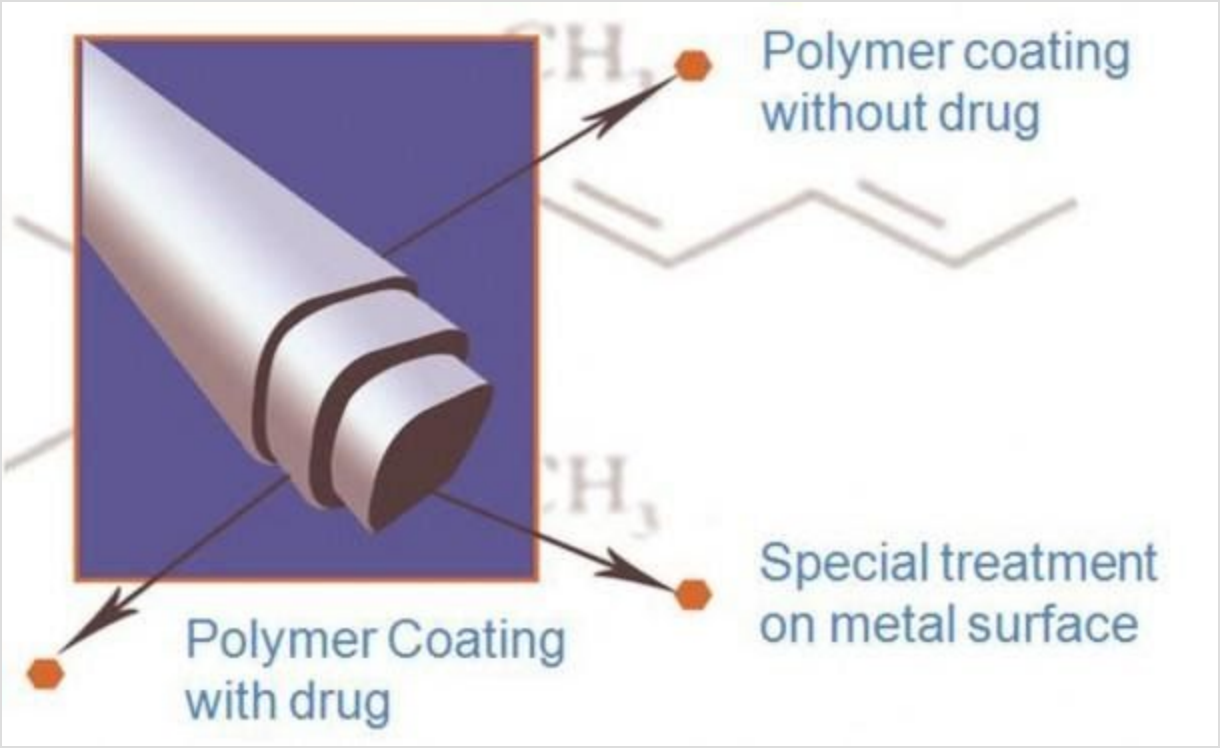
Sirolimus acts on G1 phase of cell cycle, preventing cell from entering S phase and inhibiting SMC proliferation and inflammation.

Effective Factor - Drug

Acting on G1 phase or M phase has different effects

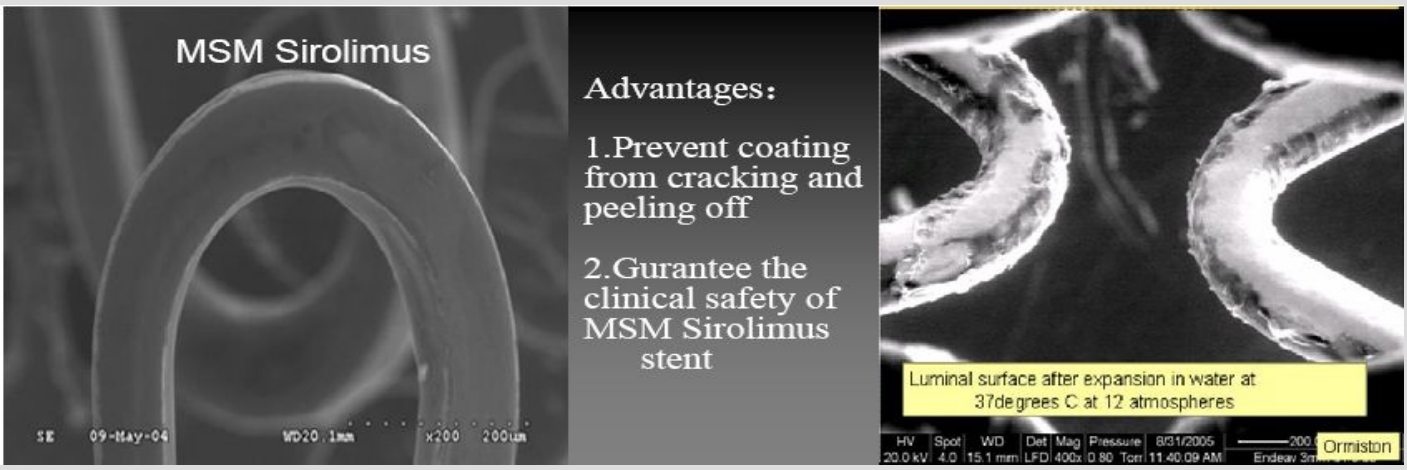


Polymer Coating of MSM Sirolimus
PLGA 85/15 Biocompatible Polymer



The thickness of biodegradable polymer-coating is only 5 μm, thinner coating increases the ability and effectiveness of delivery.

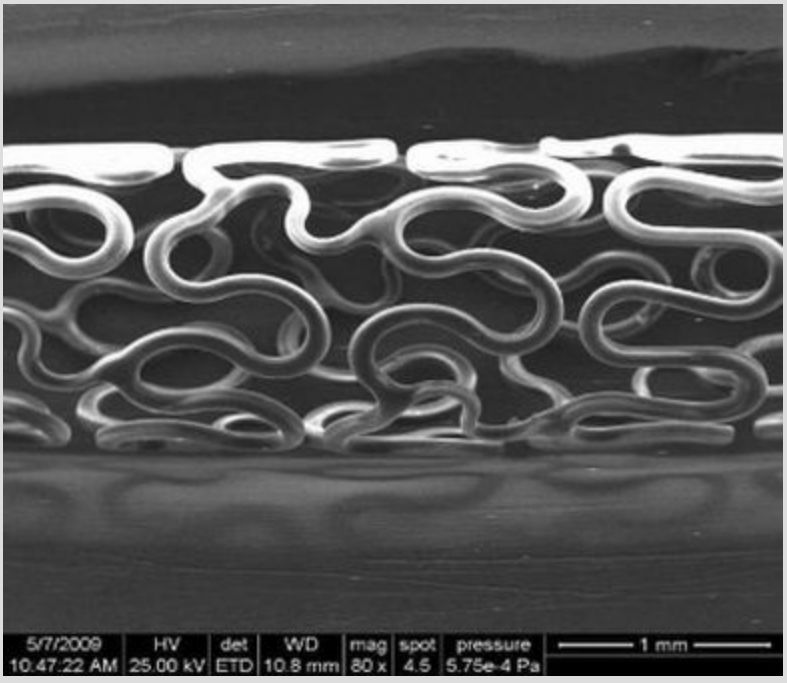
Advanced Coating Technology



During the age of DES, it is very important for stent to remain uniform and smooth after deployment.

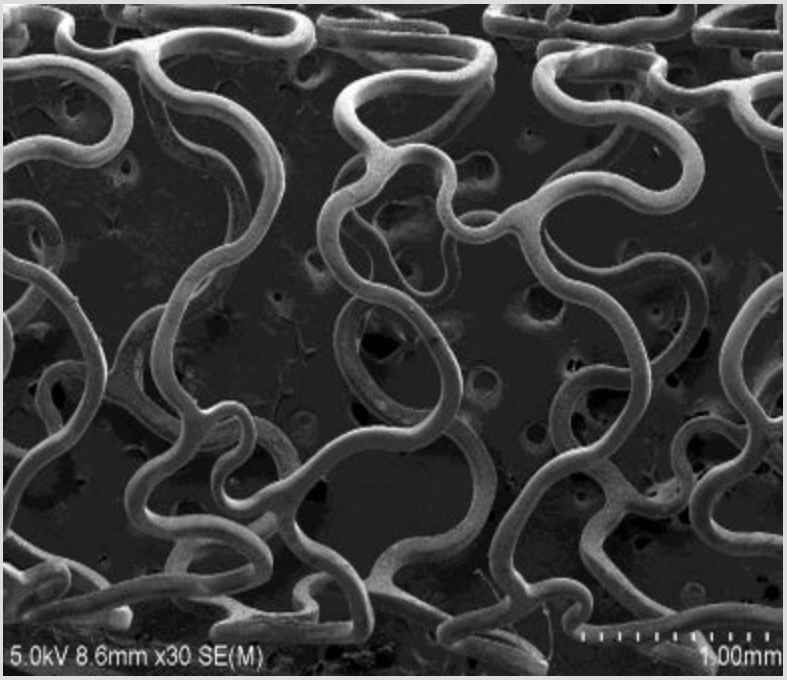
Advanced Surface treatment & Coating Technology

During expansion



Unique technology for the metal surface treatment, and advanced spraying procedure

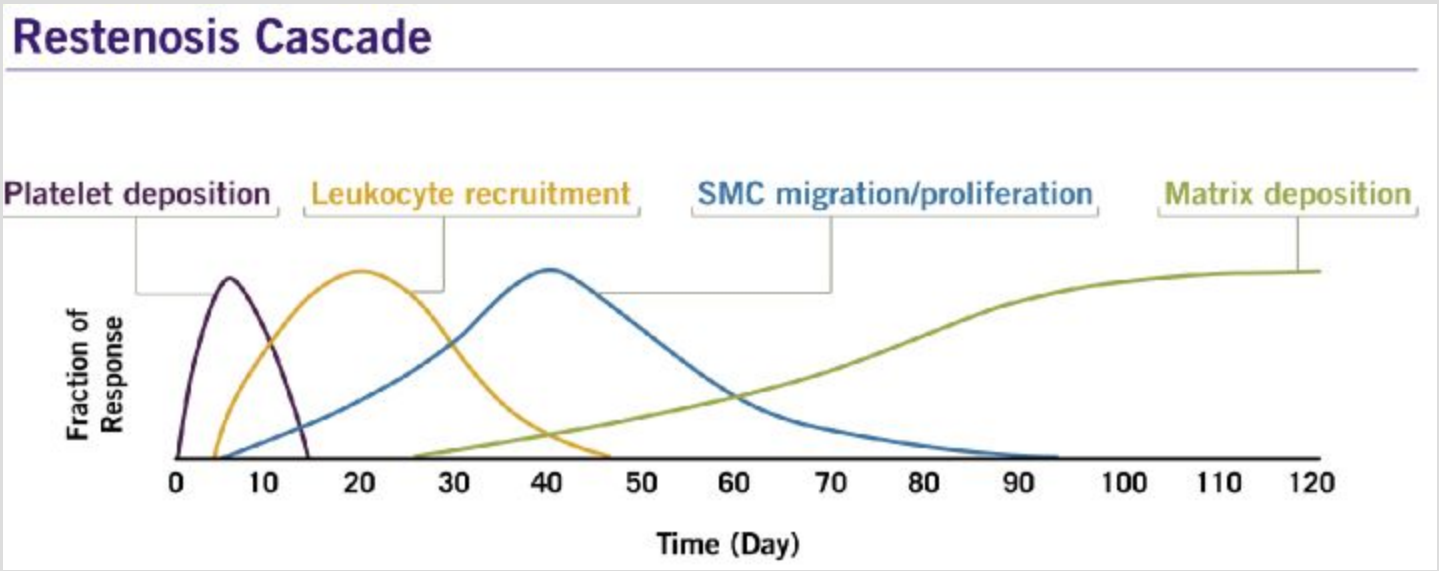
After expansion



Great anti-deformability
Coating uniform
No collapse

Factor that affects efficacy Polymer Coating

drug releasing pattern would affect the whole process of restenosis

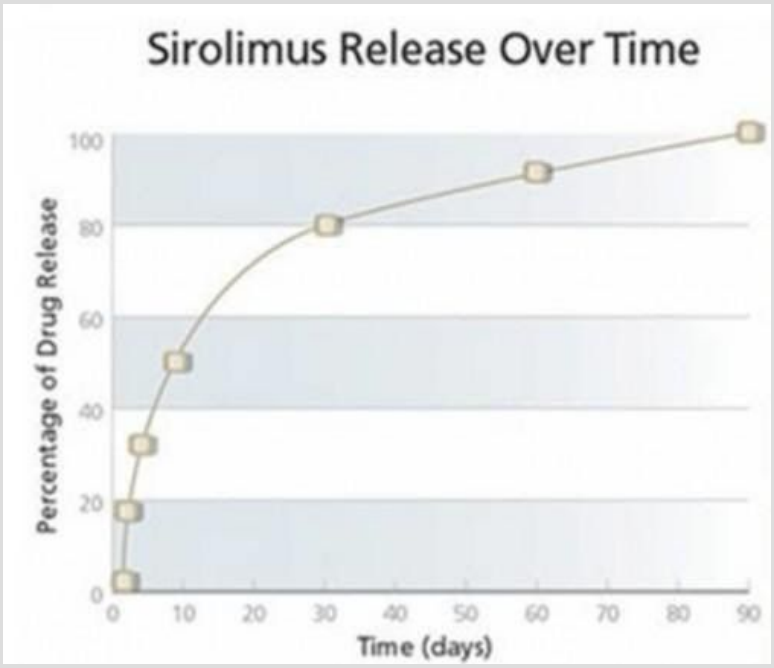


Four courses of intimal repairing can cause restenosis

- Platelet deposition occurring in 15 days after stent implantation

- Leukocyte recruitment occurring in 50 days
- SMC migration/proliferation occurring in 90 days
- Matrix deposition occurring after 120 days

Drug Release Rate



90-days drug releasing time

First 80% of drug dosage can be released in first month. This controlled drug releasing rate can effectively prevent restenosis during intimal repairing progress

MSM Sirolimus Stent Design

Double-helix lengthways structure shape provides excellent deliverability and conformability

Sine wave design of horizontal structure provide uniform scaffolding and excellent support force

Well-balanced Support and Deliverability

Material	Cobalt Chromium
Strut thickness	65 µm
Coating thickness	3 - 5 µm
Metal-artery ratio	15% - 18%
Balloon tip profile	0.017" (0.43mm)
Lowest crossing profile	0.035" (0.90mm)
Recoil	>2%

A lot of published papers* showed that the use of a thinner strut stent is associated with a significant reduction of angiographic and clinical restenosis after coronary artery stenting.

* “Intracoronary Stenting and Angiographic Results – Strut Thickness Effect on Restenosis Outcome (ISAR-STEREO) Trial” , Adnan Kastraiti MD, Albert Schömig MD, 2001; 103:2816-2821, Circulation

* “In-Stent Restenosis in Small Coronary Arteries - Impact of Strut Thickness” , Carlo Briguori MD etc., Vol. 40, No. 3, 2002, Journal of the American College of Cardiology

MSM DES Sirolimus

- Excellent Side Branch Access

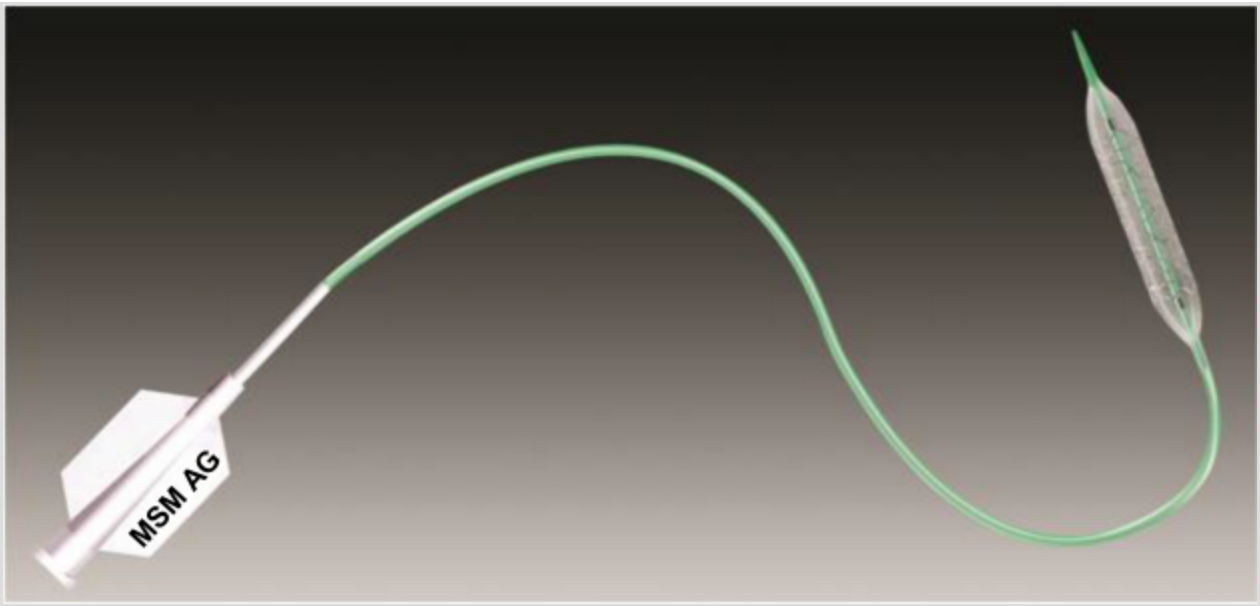
Stent diameter (mm)	Max. circular access diameter (mm)	Unsupported surface area （mm^2 ）
2.5	0.98	3.6
2.75	1.08	3.9
3.0	1.23	4.3
3.5	1.37	5.0
4.0	1.57	5.7

open cell design with 3 interlinks per segment

Diameter of mostly used device

- Guidewire: BMW 0.014” (0.36mm)
- Balloon Dilation Catheter: 0.024” (0.61mm)

Delivery system of MSM DES Sirolimus



Nominal inflation pressure is 8 atm

- Hydrophilic coated distal shaft 1.9F shaft with a rapid deflation balloon
- The balloon design optimizes a controlled linear expansion
- A balloon overhang of <5 mm minimises vessel injury outside the stent

Technical Details Stent

Type of design	open cell design with 3 interlinks per segment
Design details	9 crown per segment
Material	Cobalt-Chromium L605
Size Range	2.25 mm - 4.00 mm
Strut thickness	0.0026" (65µm)
Strut width (Main segment)	0.0028" (72µm)
Strut width (interlink)	0.0023" (58µm)
Shortening after expansion	< 2%
Recoil	< 5%
Sirolimus Matrix Thickness	< 18%
	3-5 µm
Guinding Catheter compatibility	5 F

Technical Details Catheter

Usable length	138 cm
Length of the guide wire lumen	27 cm
Material	Balloon
Distal shaft	Polyamide, Multi layer tubing
Proximal shaft	Stainless Steel with PTFE Coating

Shaft size	Proximal
Distal	2.5 F - 2.9 F, depending on balloon size
Balloon folding	Balloon sizes 2.25 mm bis 2.5 mm
Balloon sizes 2.75 mm to 4.50 mm	4-fold balloon
Marker	Embedded Platinum/ Iridium Marker
Tip profile	0.017" (0.43 mm)
Max. recommended guide wire	0.014" (0.36 mm)

Specifications of MSM DES Sirolimus

Length Diameter (mm)	8/10	13	16/18	23	28	33	38	43/48
2.25	☺	☺	☺	☺	☺			
2.50	☺	☺	☺	☺	☺	☺	☺	☺
2.75 3.00	☺	☺	☺	☺	☺	☺	☺	☺
3.25 3.50	☺	☺	☺	☺	☺	☺	☺	☺
4.00	☺	☺	☺	☺	☺	☺	☺	☺

Special! One to replace two

43 and 48 mm long stent, saving for both patients and doctors

Compliance Data

		STENT INNER Ø						
		2.25	2.50	2.75	3.00	3.25	3.50	4.00
Pressure (MPa /atm)	0.6 / 6	2.20	2.42	2.68	2.92	3.18	3.40	3.92
	0.7 / 7	2.23	2.46	2.71	2.96	3.22	3.45	3.96
	0.8 / 8	2,25	2,50	2.75	3.00	3.25	3.50	4.00
	0.9 / 9	2.28	2.53	2.78	3.03	3.28	3.55	4.04
	1.0 /10	2.30	2.56	2.81	3.06	3.32	3.59	4.09
	1.1/11	2.33	2.59	2.84	3.09	3.35	3.62	4.12
	1.2/12	2.36	2.62	2.86	3.12	3.38	3.65	4.15
	1.3/13	2.39	2.65	2.89	3.14	3.41	3.69	4.19
	1.4/14	2.42	2.68	2.91	3.17	3.44	3.72	4.23
	1.5/15	2.46	2.71	2.94	3.20	3.47	3.76	4.27
	1.6/16	2.50	2.74	2.97	3.22	3.50	3.80	4.31
	1.7/17	2.54	2.78	3.00	3.25	3.53	3.84	4.36
	1.8/18	2.60	2.82	3.03	3.28	3.56	3.89	4.40
	1.9/19	2.66	2.86	3.07	3.32	3.59	3.94	4.45
	2.0/20	2.75	2.92	3.11	3.35	3.63	4.00	4.50
Nominal Pressure 0.8 MPa / 8 atm								
RBP (Rated Burst Pressure)								

Order Information

	Stent Length										
Stent I.D.	8 mm	10 mm	13 mm	16 mm	18 mm	23 mm	28 mm	33 mm	38 mm	43 mm	48 mm
2.25 mm	DES22508	DES22510	DES22513	DES22516	DES22518	DES22523	DES22528	-	-	-	-
2.50 mm	DES25008	DES25010	DES25013	DES25016	DES25018	DES25023	DES25028	DES25033	DES25038	DES25043	-
2.75 mm	DES27508	DES27510	DES27513	DES27516	DES27518	DES27523	DES27528	DES27533	DES27538	DES27543	DES27548
3.00 mm	DES30008	DES30010	DES30013	DES30016	DES30018	DES30023	DES30028	DES30033	DES30038	DES30043*	DES30048*
3.25 mm	DES32508	DES32510	DES32513	DES32516	DES32518	DES32523	DES32528	DES32533	DES32538	DES32543*	DES32548*
3.50 mm	DES35008	DES35010	DES35013	DES35016	DES35018	DES35023	DES35028	DES35033	DES35038	DES35043*	DES35048*
4.00 mm	DES40008	DES40010	DES40013	DES40016	DES40018	DES40023	DES40028	DES40033	DES40038	DES40043*	DES40048*

* Sizes on request - minimum order quantity 20 pcs. per size