



**BIOMATRIX**<sup>™</sup>  
FAMILY

At each step of your patient's healing journey

# Arterial Healing is a Journey



**BIOSENSORS**  
INTERNATIONAL<sup>™</sup>



# We're at each step of your patient's healing journey

Haemostasis

Inflammation

Proliferation

Remodelling



BIOLIMUS A9<sup>™</sup>  
DRUG



BIODEGRADABLE  
POLYMER



ABLUMINAL  
COATING



STENT  
PLATFORM



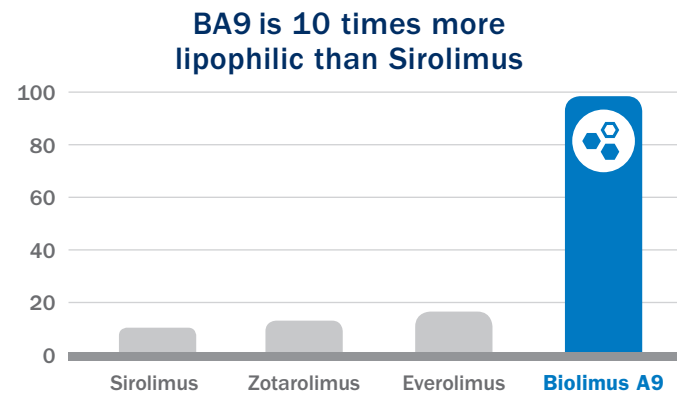
# Bridging science and innovative technology for optimised arterial healing

## The BIOMATRIX FAMILY favourably influences local wound healing processes<sup>1-4</sup>

### Biosensors' Proprietary Limus Drug

#### Not all limus drugs are the same

- ▶ Biolimus A9™ (BA9™) is highly lipophilic versus other common limus drugs, with greater local bioavailability<sup>1-4</sup>
- ▶ BA9 exerts localized anti-inflammatory and anti-proliferative effects, reducing the risk of excessive neointimal thickening and restenosis<sup>1-4</sup>



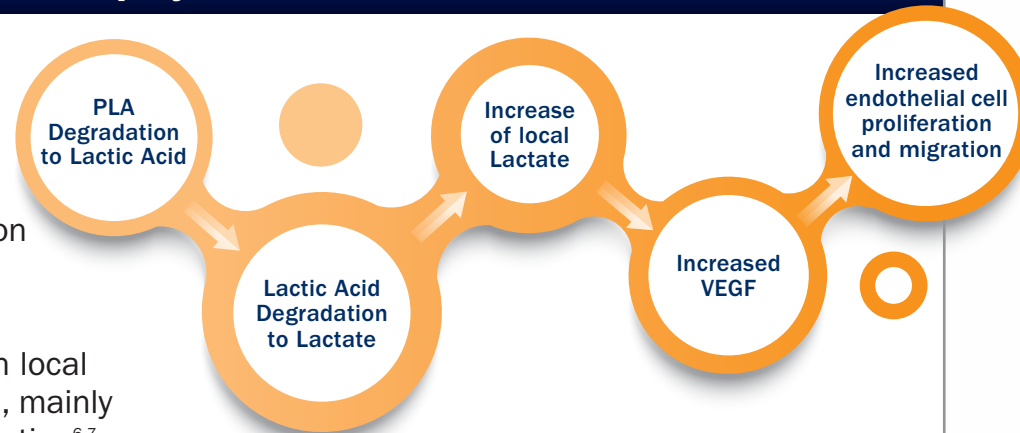
BA9 elution time from the BIOMATRIX FAMILY of DES of at least six months ensures continuous anti-restenotic therapy for as long as the patient needs it<sup>2,8-12,15</sup>



### Specifically Designed Polymer

#### Not all polymers are the same

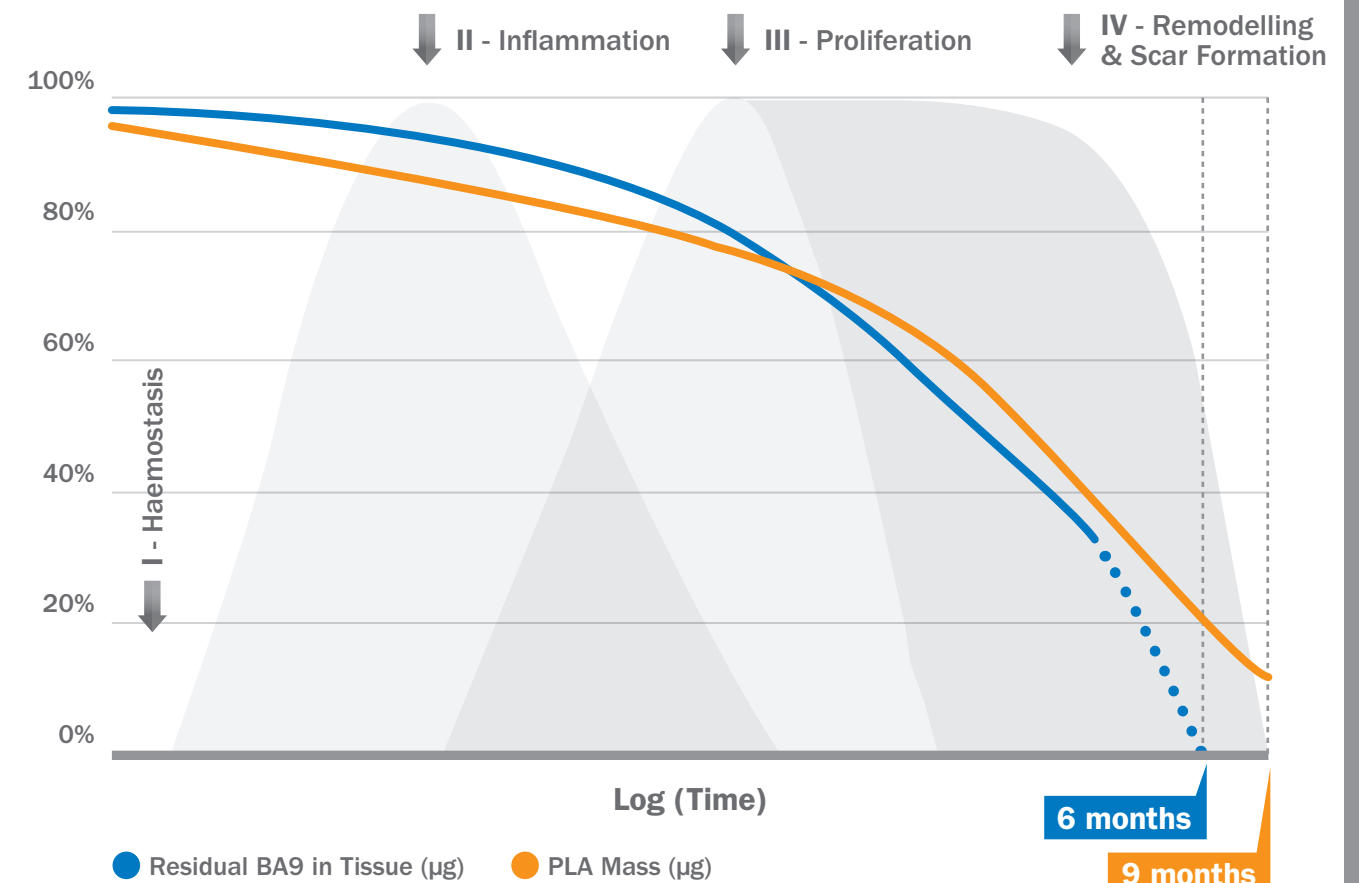
- ▶ Biosensors' PLA polymer degrades to naturally occurring lactate over a 9-month period<sup>2</sup>
- ▶ Faster polymer degradation may not be optimal for wound healing<sup>5</sup>
- ▶ Lactate plays a key role in local wound healing processes, mainly via enhanced VEGF production<sup>6,7</sup>



The localized presence of PLA-derived lactate has the potential to facilitate arterial wound healing, including re-endothelialization<sup>6-7</sup>

## The BIOMATRIX FAMILY is tailored to cover the healing journey of your patients<sup>2,8-12</sup>

### In vivo Presence of BA9 and Biodegradation of PLA with Wound Healing Cascade Overlay†



† Pharmacokinetic data for BA9-eluting stent with biodegradable PLA polymer, derived from porcine models.

# Designed to match the wound healing journey of real-world patients

The **BIOMATRIX FAMILY** offers added reassurance for a wide range of patient profiles, including potentially slow healers

Localised anti-restenotic therapy for at least six months<sup>2</sup>

- Every patient heals differently and it's not always possible to predict how long a particular patient will need anti-restenotic therapy
- Available data suggest that many DES-related lesions are likely to take more than 3 to 4 months to heal completely<sup>9-12</sup>

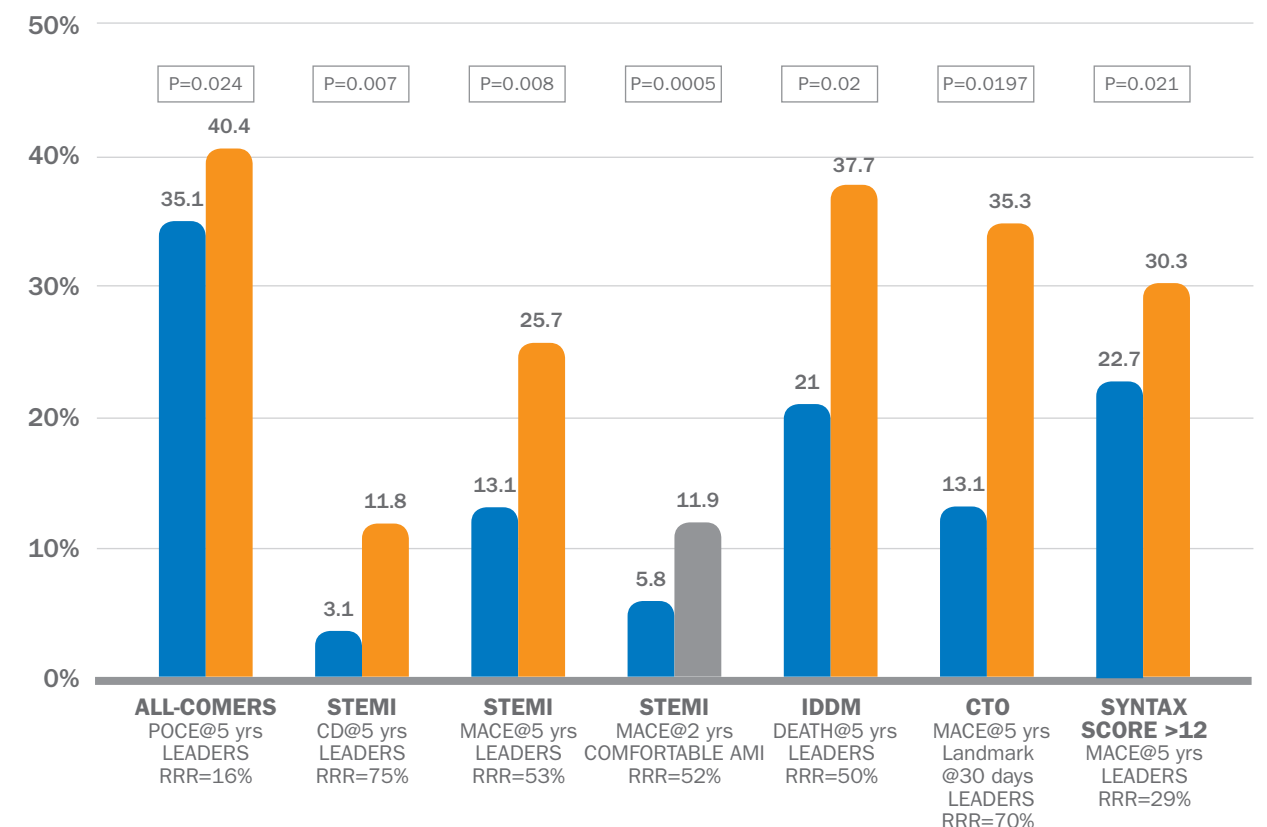
### Predictors of slower wound healing include:<sup>13-16</sup>

- ▶ **More severe CAD** (e.g. ACS vs stable CAD)
- ▶ **Chronic disease** (e.g. PVD, cancer, diabetes)
- ▶ **Immunocompromising conditions**
- ▶ **Older age**
- ▶ **Certain medications** (e.g. glucocorticoids, NSAIDs, chemotherapy)
- ▶ **Poor nutritional status**
- ▶ **Obesity**
- ▶ **Smoking & alcoholism**

### Proven broad-spectrum efficacy<sup>17-19</sup>

Efficacy extends to patients with severe CAD (e.g. ACS, multi-vessel disease, etc.), as well as individuals with diabetes:<sup>2,17,18</sup>

### Outcomes in complex patients across clinical studies



**POCE:** Composition of all death, all MI, all revascularization; **MACE:** Composite of cardiac death, MI (target vessel MI in COMFORTABLE AMI study), ci-TVR. **ci-TVR:** Clinically indicated Target Vessel Revascularization; **CD:** Cardiac Death; **STEMI:** ST-elevated Myocardial infarction; **IDDM:** Insulin-dependent Diabetes Mellitus; **CTO:** Chronic Total Occlusion; **RRR:** Relative Risk Reduction.

● BES  
● SES  
● BMS

Data from LEADERS study; an 'all-comers' study, in which patients with stable CAD or an ACS were randomized to receive either a BIOMATRIX stent (n=857) or a sirolimus-eluting stent (SES, with durable polymer; n=850).<sup>17,18</sup>  
Data from the COMFORTABLE AMI study, in which 1161 patients with ST-segment-elevation MI and undergoing primary PCI were randomized to receive either a BIOMATRIX stent or a bare metal stent.<sup>19</sup>

## Many DES-related vessel lesions take more than 3 to 4 months to completely heal<sup>9-12</sup>

### The BIOMATRIX FAMILY favourably influences local wound healing processes

- ▶ Highly localised delivery of anti-restenotic BA9<sup>™</sup> for at least six months<sup>1-4</sup>
- ▶ Degradation of specifically designed PLA polymer to lactate, which has the potential to facilitate wound healing<sup>2,6,7</sup>

### The BIOMATRIX FAMILY has proven efficacy in a broad range of patient types, including complex patients<sup>17-19</sup>

## We're with your patients from start to finish

**REFERENCES:** **1.** BIOMATRIX NeoFlex, Instruction for use. Biosensors International. **2.** Data on File, Biosensors International. **3.** Grube E, Buellesfeld L. *Expert Rev Med Devices*. 2006;3:731-41. **4.** Abizaid A, Costa R. *Circ Cardiovasc Interv*. 2010;3:384-93. **5.** Bostman OM, J. *Bone Joint Surg Am*. 1991;73:148-53. **6.** Gladden LB. *J Physiol*. 2004;558(1):5-30. **7.** Ghani, QR et al. *Methods in Enzymology*. 2004;381(36):565-75. **8.** Clark RA, In: Goldsmith, LA, ed. *Physiology, biochemistry and molecular biology of the skin*, 2nd Edition, Volume 1 (Oxford University Press; New York, 1991);p577. **9.** Lüscher TF, et al. *Circulation*. 2007;115:1051-58. **10.** Farb A, et al. *Circulation*. 2003;108:1701-06. **11.** Joner M, et al. *J Am Coll Cardiol*. 2006;48:193-202. **12.** De Cock D, et al. *Cardiovascular Imaging*. 2014;15:800-09. **13.** Räber L, et al. *International Journal of Cardiology*. 2014;173:259-67. **14.** Nakazawa G, et al. *Circulation*. 2008;118:1138-45. **15.** Hess CT. *Advan Skin Wound Care*. 2011;24:192. **16.** Guo S, DiPietro LA. *J Dent Res*. 2010;89:219-29. **17.** Windecker S et al. *Lancet*. 2008;372:1163-73. **18.** Serruys PW, et al. *JACC Cardiovasc Interv*. 2013;6:777-89. **19.** Räber L, et al. *Circ Cardiovasc Interv*. 2014;7:355-64.

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