

# RESEARCH PROJECT

 Institute  
Life Technologies

## Development of polyhydroxyalkanoates (PHA) based coating for a bioabsorbable drug-eluting stents

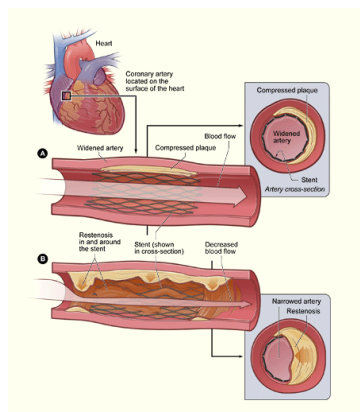
**Partner(s)** Empa, Acrostak

**Collaborator(s)** M. Bassas, A. Fornage, J. Pott, M. Zinn

**Description** Cardiovascular disease is the No.1 cause of death in the industrialized world. Minimally invasive techniques to treat cardiovascular diseases such as balloon angioplasty (small balloon catheter inserted percutaneously into an artery and inflated to enlarge the narrowing of the artery) and implantation of stents (wire-mesh metallic stent expanded in the artery after angioplasty) have been developed to replace the heavy surgery procedures of coronary bypass (CABG).

Currently, bare metal stents (BMS) are implanted and remain permanently in the arteries. During the past it was found that drug eluting coatings need to be designed in order to reduce stent thrombosis. Stent thrombosis or restenosis is an acute event which may result in patient's immediate death. Patients who have been implanted a BMS are therefore recommended to follow an expensive drug therapy.

HES-SO is responsible in this CTI project for the design and production of a novel kind coating material based on polyhydroxyalkanoates suitable for drug-eluting in order to inhibit restenosis over more than 3 months after surgery.



**Drug eluting stents are needed to reduce the stent thrombosis.**



**A novel generation of bacterial biopolyesters are more transparent and exhibit enhanced material properties.**

**URL** <http://itv.hevs.ch/>

**Contact** Dr. Manfred Zinn  
[manfred.zinn@hevs.ch](mailto:manfred.zinn@hevs.ch)  
T +41 27 606 86 66