

Microbypass Stent (*MBStent*): an implantable medical device to induce bypass of arterial blockages

VALUE PROPOSITION

A cell therapy based stent, inserted by key-hole procedure using a catheter, for the treatment of patients with coronary artery disease. The device provides a unique treatment option for the 20-25% of all patients that are not suitable for open-heart surgery. The device can be used for both coronary and peripheral arterial bypass and represents an addressable market of 1 million patient treatments per year worldwide. Microvessel bypass of the obstruction is achieved over a four-week period, resulting in the return of normal heart function and a recovery of exercise capacity.

THE TECHNOLOGY

Microvessel bypass of blocked arteries has been achieved in a large animal 'chronic vascular occlusion' model following **MBStent** insertion. Embedded in the mesh stent are patient derived cells that send out signals when encountering the low oxygen environment of the blockage which stimulates the body to form new blood vessels around the blockage, thereby re-establishing downstream oxygen supply.

Conventional surgical strategies aimed at bypassing vessel blockages are frequently not feasible because of the poor condition of patient blood vessels, co-existing diseases or lack of suitable bypass conduits. The need for alternative strategies to target this inoperable population is therefore great.

The cell-based stent has been shown to significantly improve blood flow to the heart, translating into regional and global left ventricular functional recovery and marked improvement in maximal cardiac perfusion.



DEVELOPMENT STATUS

- Preclinical
- 2 patents filed

FIELDS OF APPLICATION

- Coronary artery disease
- Peripheral artery disease (a common risk in diabetes)

PARTNERS



FUNDING

