

Health Technologies

Business Opportunities — Technologies

Drug-Eluting Stent for High Risk Patients

Background

Stent implantation is a highly effective treatment for restoring blood flow through an atherosclerotic artery; however restenosis (a re-narrowing of the diseased artery) occurs in a significant proportion of patients. Drug-eluting stents have been developed to limit restenosis and although they represent a major advance, they have limited effectiveness in diabetic patients. In addition there is a need for an improved drug-eluting stent that will not harm the endothelium, and will protect against blood clotting.

Technology

Using an in vivo model, researchers at the University of Strathclyde have found that restenosis can be prevented by a novel, proprietary compound with no harmful effects on endothelial properties. In *vitro* studies showed it had no detrimental effect on contractile or relaxant function of blood vessels. It is much more effective as an inhibitor of smooth muscle cell proliferation than paclitaxel. Additionally, it is as effective at inhibiting p42/p44 MAPK activation in human and porcine artery cells, suggesting that its effects should be evident in the clinical setting.

Key Benefits

- Prevention of restenosis in artery stents
- Designed for diabetic and high risk patients
- Novel anti-proliferative mechanism
- No detrimental effects on endothelial cell function or artery contractility
- Enhanced efficacy and reduced toxicity compared with competitor compounds
- Compound has cleared regulatory toxicology (data available)

Markets and Applications

This technology can be used for any procedure which carries the risk of restenosis, from angioplasty to artery reconstruction, for medical and pharmaceutical markets.

The worldwide coronary stent market is worth over \$7 billion and is forecast to grow by more than 5% annually. The drug-eluting stent market was valued at \$4.6 billion in 2010 and is expected to grow by 4.3% annually until 2017. The opportunity for a novel drug-eluting stent with superior performance to competitor products is high.

Licensing and Development

The compound has cleared regulatory toxicology testing. Contact is welcomed from organisations interested in developing, or exploiting this technology. Please contact rkes@strath.ac.uk quoting reference number 0204.

