



Catheter Coatings

Research at Aston University has led to the discovery of a novel coating for central venous catheters that prevents the occurrence of thrombotic occlusion and related bacterial and yeast infection. Aston's Business Partnership Unit is now actively seeking commercial partners to license this highly promising discovery.

Highlights

- Blocks formation of Fibrin films on catheters
- Prevents occurrence of thrombotic occlusion
- Greatly reduces risk of bacterial and yeast infection

Background

Central venous catheters (CVCs) are used with increasing frequency in intensive care, general medicine and oncology. Major complication result however from this usage. Despite routine flushing with saline solution, approximately 40 percent of CVCs result in thrombotic occlusion, greatly increasing the risk of infection by skin organisms, principally *Staphylococcus epidermidis* and *Candida albicans*. Most CVCs become coated with a fibrin film within days of insertion and CVC-associated thrombi arise within 30 days, causing post-phlebitic syndrome or pulmonary embolism. Restoration of CVC function requires fibrinolytic treatment to remove thrombotic occlusions, while treatment of infection is problematic, necessitating use of antibiotic locks or catheter removal.

The Technology

Researchers at Aston University have discovered a coating for CVCs which can remain in the body without the requirement for either flushing or removal for cleaning. The coating incorporates transglutaminase (TGase) inhibitors onto the surface of CVCs, disrupting the formation and stabilisation of clots. TGases catalyse the formation of extensively cross-linked, generally insoluble protein polymers which have been linked to blood coagulation and clotting. Bacteria and yeast can bind to these protein polymers, particularly when they are deposited upon the surface of medical devices.

Intellectual Property Protection

This technology is the subject of multiple National Phase patent applications:

<i>Title</i>	<i>Application Number</i>	<i>Priority Claimed</i>	<i>Our Ref</i>
Medical Devices and Coatings Therefor	US 11/996112 EP 06764938.4 CA 2616139	July 21, 2005	PAT-2005-010

Further Information

Further information can be made available and commercial discussions commenced on entering into a non-disclosure agreement.

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