November 21, 2011
Toyobo Co., Ltd.

Toyobo Develops Antithrombogenic Coating Material to Possess Resistance to Complement Activation

Toyobo has announced it has newly developed SEC–1™, an antithrombogenic coating material that possesses resistance to complement activation, which other previously developed materials have not been able to accomplish.

Complement activation is a condition where disease enters the body through external injuries such as surgical invasion, bacterial infections, and in other ways, causing inflammation throughout the whole body. Symptoms include a slight fever and the passage of blood in the urine after surgery.

1. Background of Development

Catheters, blood circuit tubes, cannulae, oxygenators, and other medical equipment used during heart surgery cause a foreign-body response when they come in contact with the blood, and this, in turn, causes coagulation of the blood and complement activation. Thus far, Toyobo has developed and marketed an antithrombotic material (Heparinized coating material), and, although Heparin is an effective preparation in suppressing the coagulation of the blood, it has proved insufficient in suppressing complement activation.

Toyobo's newly developed SEC–1™ is an antithrombogenic coating material that possesses resistance to complement activation and is applicable for use in a wide range of general-purpose medical equipment.

2. Features of SEC–1™

(a) Not only antithrombogenicity but also suppresses complement activation

In addition to antithrombogenicity, as previous materials have been able to do, SEC–1™ also possesses resistance to complement activation, and is, therefore, a material that lessens the burden on the patient's body following surgical operations.

(b) A coating material that uses synthetic materials

Unlike Heparin, which is derived from intestinal mucosa of pork, SEC–1™ makes use of synthetic materials and does not cause problems, such as bovine spongiform encephalopathy contagion, that are a cause of concern with biologically active substances.

(c) Can be used to coat various types of medical equipment

It is possible to prepare coating material that is optimized for use on various kinds of plastic and metals that are used on the surfaces of medical equipment.

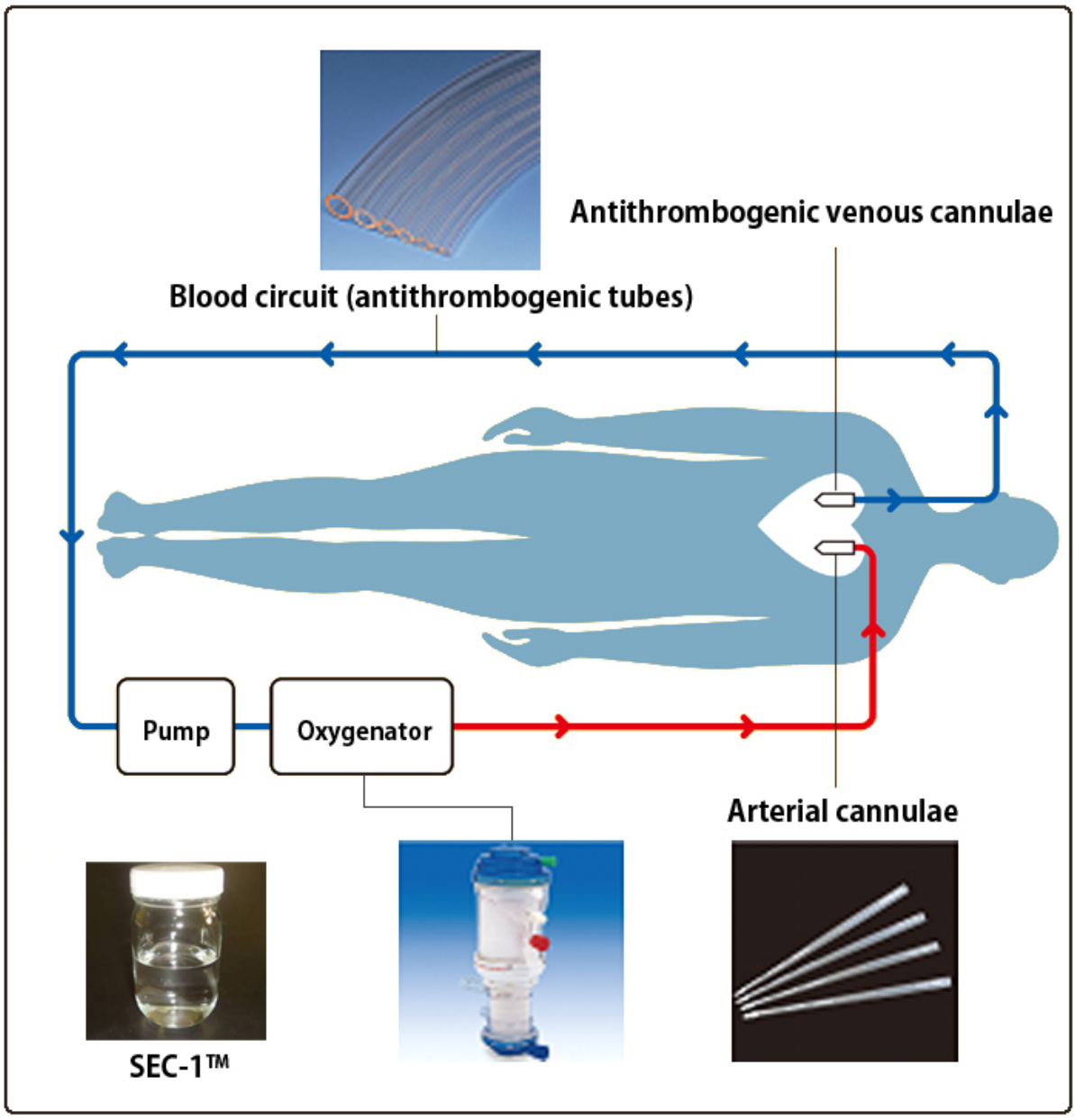
3. Schedule Going Forward

Toyobo will begin to supply SEC–1™ to medical equipment manufacturers in Japan, beginning in December 2011. In addition, Toyobo will market this coating material widely, not only for use in blood circuits but also for other medical equipment where biocompatibility is necessary. Toyobo will aim for sales of ¥1.0 billion over the next several years.

Supplementary Information

Toyobo is scheduled to announce the development of this product at this year's Japanese Society for Artificial Organs (to be held from November 25 through November 27, at the TOSHI CENTER HOTEL.

Diagram of SEC–1™ in Use



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