

Biocompatible Biomembrane Mimetic Surface Coatings



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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing creating biocompatible surfaces that mimic the cell membrane on implantable medical devices and prosthetics.

OVERVIEW

Several problems arise when implantable medical devices are not compatible with human tissue. For example, devices inserted into the human body that are exposed to blood such as vascular stents and heart valves can cause blood clots, thereby increasing the risk of stroke. Also, tissue responses to devices that are not fully biocompatible can result in device malfunction.

Several approaches to creating medical implants and prosthetic devices that are more biocompatible have been developed. One method uses silane-linking chemistry to graft polymer chains onto a substrate to form a surface that is compatible with human tissue. However, this technology is not useful when long-term stability and durability are required.

THE INVENTION

UW-Madison researchers have developed an efficient method for constructing a phospholipid monolayer on a thin gold surface. The biomimetic surfaces created using this method are highly compatible with the human body and mimic the cell membrane surface.

APPLICATIONS

- Efficient formation of biomimetic surfaces for implanted devices

KEY BENEFITS

- Potentially will prevent complications such as thrombosis induced by foreign body intrusion and retard or prevent rejection of the prosthetic or implanted devices
- The coating process can be applied to implants and prosthetic devices made of metals or organic polymers that can be surface metallized by gold sputtering.
- Highly compatible with the human body, mimicking the cell membrane surface by means of phospholipids
- Highly durable and stable

THE WARF ADVANTAGE

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.



ADDITIONAL INFORMATION

For more information about the inventors, visit [DiscoveryPortal.org](https://discoveryportal.org)

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Intellectual Property Status

[View U.S. Patent No. 6,486,334 in PDF format](#)

Tech Fields

Medical Devices - Device coatings

CONTACT INFORMATION

For current licensing status, please contact our team at licensing@warf.org or 608.262.4924.