Catheter Coating to Prevent Bacterial Infections

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Technology description

An antifouling coating for catheters and other medical devices effectively addresses the problem of catheter-associated urinary tract infections (CAUTIs) by preventing them before they occur. This anti-adhesion coating prevents the formation of bacterial biofilms instead of striving to kill the bacteria after it adheres to the device, as some catheter coatings are designed to do.

This invention offers a novel approach to CAUTIs, a universal problem in health care which accounts for a large portion of nosocomial infections. More than 300 million urinary catheters are inserted each year in the U.S. alone, and the risk for CAUTI increases from 3 to 10 percent each day of a catheter's indwelling time. The technology uniquely combines one component that can bind to plastic and another component that prevents adhesion of bacteria. These components are water-soluble and nontoxic, and they can stay on the catheter for over three weeks inside the body. The product does not use any anti-microbial agents and does not discriminate against bacteria; it prevents all of them, including Staphylococcus aureus.

A strong advantage for a catheter manufacturer partnering with this inventor is that manufacturing the thin coating will not require manufacturing a special catheter to accommodate it; the coating can be applied to existing catheters.

The inventor has a prototype and has conducted studies on mice; however, more research is needed to ensure the stability and sterility of human catheters. While the technology provides a solution to bacterial infections from catheters and also addresses the shortcomings of products already on the market, a manufacturer working with the inventor will need to help further develop the product to meet its specific needs. In addition, it will be necessary to educate health care providers – specifically nurses – about the advantages of using this type of catheter in conjunction with the infection prevention courses now offered.

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