VCU TECH TRANSFER

Virginia Commonwealth University

"HEMOSTATIC BANDAGES"
VCU # 07-081

APPLICATIONS:

- Can be used to induce rapid clotting in severe wounds.
- Ease of use is ideal for both military field use and emergency response teams
- Can be used in the operating room to limit severe bleeding during surgical procedures

Advantages:

- Electrospinning provides superior stability to hemostatic bandages
- Use of salmon derived fibrinogen and thrombin eliminates concerns of transmission of human pathogens
- Fish proteins promote normal wound healing without any adverse immune response

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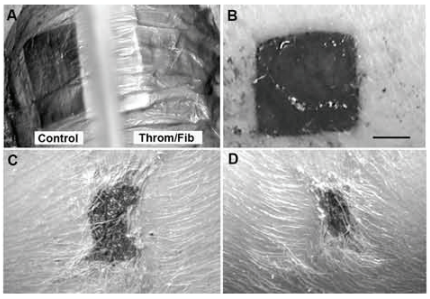
Market Need:

Severe hemorrhage causes fifty percent of all deaths on the battlefield where soldiers are vulnerable to bullets and shrapnel from rocket-propelled grenades or land mines. Since its initial introduction, the market for hemostatic bandages has expanded beyond military field use to surgical applications in hospitals.

TECHNOLOGY SUMMARY:

This invention uses an electro spinning fabrication method to apply a formulation of dextran, fibrinogen, and thrombin to the backing of hemostatic bandages. The fibrinogen and thrombin are derived from salmon which eliminates potential contamination of these proteins with human pathogens. The fish proteins have been shown to promote normal wound healing with out adverse immune responses. The precision of the electro spinning methodology eliminates the variations often seen in the crystallized structures of the commonly used chitin based hemostatic bandages. The electrospun backing also provides superior stability to these bandages allowing the user to apply substantial pressure to the wound bed if necessary. The combination of the salmon derived fibrinogen and thrombin with the electrospun backing produces a robust and inexpensive hemostatic bandage ideal for both hospital and field use.



Wound healing with salmon hemostatic bandage

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Technology Status: Recent testing at Walter Reed Army Hospital demonstrated successful suppression of high pressure hemorrhaging in pigs without any adverse immune reactions to the salmon proteins.

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