Hemostatic wound dressing with reduced clotting time

Technology #cu13372

This technology is a wound dressing consisting of hemostatic agents and biocompatible materials that can significantly reduce clotting time and stop major hemorrhaging.

Unmet Need: Faster blood coagulation during traumatic bleeding

Currently available wound dressings require several crucial minutes to staunch bleeding during serious trauma or arterial wounds, such as in combat or emergency situations. These conventional dressings are no more effective than gauze in reducing clotting time and are sometimes even less effective due to small size and rigidity. Furthermore, advanced bandage formulations have been linked to potentially deadly complications due to the release of clotting agents into blood circulation.

The Technology: Wound dressing with reduced clotting time is compatible with multiple application methods

This technology consists of a synergistic combination of hemostatic agents with natural polymers to create a more effective but still flexible wound dressing. Improved hemostasis is achieved through combining chamomile and nettle with known hemostatic agents such as kaolin, chitosan, fibrinogen, and thrombin. Thus, this technology can potentially reduce mortality and morbidity of uncontrolled hemorrhaging by rapidly stemming bleeding and reducing blood loss. Additionally, this composition can be incorporated with commercially available dressing types, including gels, and combined with pharmaceutical agents for additional antimicrobial, analgesic, and/or anesthetic effects.

This technology has been validated in animal models of severe hemorrhage and found to be capable of reducing or stopping bleeding in less than one minute. Compared to gauze treatment, this technology reduced blood loss by 40-90% and increased survival from 25% to almost 100%.

Applications:

- Hemostatic dressing for dental and surgical procedures
- Hemostatic dressing for emergency situations in the battlefield and civilian hospitals
- Hemostatic dressing for arterial bleeding and burn wounds
- Hemostatic dressing for veterinary use
- Hemostatic composition incorporated into biocompatible polymers or bioresorbable sutures
- Hemostatic formulations as ointments, pastes, gels, powders, sprays, or inhalants
• Combination therapeutic composition with pharmaceutical agents

**Advantages:**

• Reduced clotting time, even during rapid arterial bleeding
• Improved hemostatic properties while maintaining flexibility and absorbency of dressing
• Compatible with commercially available dressing types and gels
• Biocompatible polymer matrix for superior hemostatic performance
• Potential combination with pharmaceutical agents such as antimicrobial, analgesic, and/or anesthetic compounds

**Lead Inventor:**

Matthew D. Bacchetta, M.D.

**Patent Information:**

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**Related Publications:**

**Tech Ventures Reference:**

• IR CU13372
• Licensing Contact: Sara Gusik

**Inventors**

Matthew Bacchetta