Product Brief

In emergency situations chitosan is to date the most cost effective advanced biotech dressing for achieving arterial haemostasis other than through physical compression. Chitosan’s mode of action works through its positive charge attracting platelets, blood cells and fibrin to form the clot. This is initiated within 30 seconds after application, and full haemostatis achieved within 6 to 8 minutes hence lives are saved by rapidly stanching traumatic hemorrhages.

Coreleader Biotech has the unique ability to produce chitosan fiber through a patented process. This is then mixed with additional material to form two types of advanced arterial haemostatic dressings:

- **HEMfiber** is a non-woven haemostatic dressing comprising chitosan fiber and hydro-fiber mix. This combination means that as well as having excellent haemostatic properties it can absorb fluid and hold the moisture over the wound bed. It is designed for use on large sized wounds or difficult anatomical location to secure a dressing or bandage.

- **HEMbandage**, is a woven gauze comprising chitosan fibers and a proprietary fiber mix which gives the bandage a soft texture but superior mechanical wrapping strength.
Both types can be used to speed up haemostasis on arterial hemorrhages resulting from penetrating wounds, lacerations or traumatic wounds. Since both the woven and non woven forms are very flexible application can be achieved without compromising haemostatic efficacy.

The fast bleeding control capability saves life in the battle field or at the site of accident.

Both Coreleader’s **HEM** advanced arterial haemostatic dressings are made of natural organic chitosan. Studies show that the cations attached to the surface of Coreleader’s **HEM** dressings accelerate the movement of blood cells and platelet which carry anions, to the bleeding spot. In addition to stopping the bleeding, Coreleader’s **HEM** dressings also form an antibacterial layers to prevent wound infection.

**Product Feature**

1. **Fast Blood Coagulation**
On application the coagulation cascade is activated immediately by the positive charge on the **HEM** dressings which attracts the negatively charged platelets and blood cells. Evidence from animal studies indicates that the **HEM** dressings stop bleeding within 2 minutes, and maintains haemostasis even after 10 leg stretches as per the requirement for full compliance with the US army test protocol.

2. **Good Absorbance**
Both dressings have fast absorption characteristics, however the **HEM** fiber since it also contains hydro-fibers, is particularly good for absorbing larger volumes of fluid at the same time achieving rapid haemostasis.

3. **Easy to apply and remove with the added benefit of providing an antibacterial layer on the wounds**
The softness and flexibility of the **HEM** dressings allows them to be applied to any part of the human body. They are comfortable and safe for patient to insert into the bleeding site. Also, the cations on the surface of the **HEM** dressings perform a germicidal effect which reduce the risk of infections and pain from the wounds. Since these dressings do not adhere to the epidermis or to the wounds they are easy to remove.

4. **Biocompatibility**
The **HEM** advanced arterial haemostatic dressings are non-toxic and have high biocompatibility to human tissue.

**Benefit**
The **HEM** dressings can rapidly achieve haemostasis by forming the clot at the hemorrhage site. They work well and fast even in cases of arterial hemorrhaging with patients on anticoagulants, such as Heparin.

- The **HEM** dressings are soft and flexible and can easily be inserted into traumatic wounds, lacerations or penetration wounds to reach the bleeding vessel to achieve effective haemostasis.
- The **HEM** dressings deploy an antibacterial layer covering the trauma.
- The **HEM** dressings do not trigger immunoreactions or any other known side effects.
- The **HEM** dressings do not adhere to the epidermis or the wound bed. Once the dressing has been removed normal saline can be used to clean the wound bed effectively.
- The **HEM** dressings significantly reduce the blood loss and the time required to manage the wound.

**Application**

1. The **HEM** dressing needs to be in contact directly with the bleeding site to achieve effective haemostasis. Hence, the need to insert the **HEM** dressing into the wound to allow the chitosan’s positive charge to rapidly attract the negatively charged platelets and blood cells to clot the bleeding site.

2. When haemostasis is reached, leave the **HEM** dressing at the hemorrhage site. Then where necessary apply a normal gauze or bandage to ensure the haemostatic dressing is held in place until the patient can receive medical treatment.
## Specification

### HEM\(^{\text{\textregistered}}\)-fiber

<table>
<thead>
<tr>
<th>Model</th>
<th>Description (cm)</th>
<th>Description (inch)</th>
<th>Basic weight (g/m(^2))</th>
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</thead>
<tbody>
<tr>
<td>CPW204002</td>
<td>20x40</td>
<td>8x16</td>
<td>200g/m(^2)</td>
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### HEM\(^{\text{\textregistered}}\)-bandage

<table>
<thead>
<tr>
<th>Model</th>
<th>Description (cm)</th>
<th>Description (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF-W0754000</td>
<td>7.5(\times)400</td>
<td>3(\times)160</td>
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<tr>
<td>CF-W1502000</td>
<td>15(\times)200</td>
<td>6(\times)80</td>
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<tr>
<td>CF-W1503000</td>
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<td>6(\times)120</td>
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</table>

### ISO 13485 certificate

**United States patent Nº: 8445742**

### EC certificate

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