**Editorial comments:**  
1. Please employ professional copy-editing services as the language in the manuscript is not publication grade. The language significantly detracts from the scientific value of the manuscript.  
Response: We have had the manuscript edited by a professional editing service.

**2. Please revise the following lines of the manuscript to avoid previously published text: 60-61, 65-72, 78-80, 246-247, 267-270, 327-333, 335-336, 343-349, 381-384,**  
Response: Thank you for pointing this out. All the above sentences have been edited

**3. Please obtain explicit copyright permission to reuse any figures from a previous publication. Explicit permission can be expressed in the form of a letter from the editor or a link to the editorial policy that allows re-prints. Please upload this information as a .doc or .docx file to your Editorial Manager account. The Figure must be cited appropriately in the Figure Legend, i.e. “This figure has been modified from [citation].”**

Response: These contents have been removed to avoid potential infringement.

**4. Please include all institutional emails of the authors in the manuscript.**

Response: We have included the following email addresses in the manuscript

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**5. Please include at least 6 keywords. Please use MeSH terms whenever possible.**

Response: We have included the following keywords in the manuscript

Swine; Polysaccharides; Burn; Surgical; Experimental animal models; Scarring

**6. Please reduce the Short Abstract to be 50 words or less.**Response: The short abstract is within 50 words now

7. Revisions are required for the protocol:  
**Why are there 10 panels of Figure 1 that are not referenced? Please reference these panels or remove Figure 1.**

Response: Each panel has been referenced with a corresponding step.

**How many animals are used? Where are they housed and in what conditions?**

Response: We created 6 burns on each of the 3 pigs; for a total of 18 burns, with 3 replicates dressed with CMC and CAPS. This study was conducted in the Laboratory Animal Center at the National Defense Medical Center. Three domestic pigs were used in this study. The animals were provided a standard diet ad lib several days before the investigation and were fasted overnight before any procedure. The animals were housed in individual pens upon their arrival and allowed to acclimatize for at least 7 days.

**What volume of glycerin?**

Response: We used 50 mL of glycerin

**Streak on what?**

Response: The samples were collected on post-burn days 0, 7, 21, and 42; they were placed in sterile tubes containing 0.9 % normal saline.

**What dilution? How many Petri dishes?**

Response: We estimated microbial concentration from measured counts on a single agar plate and used serial dilutions. We used 10 small sterile test tubes, labeled the tubes 1 through 10, and added 4.5 mL of 0.9 % normal saline to each test tube. The dilution ratios ranged from 10-1 to 10-5.

**Employ the agar how? What is actually done?**

Response: Blood agar plate (BAP) (TSA with 5% Sheep Blood) was used in routine laboratory procedures. Each sample was inoculated with 10 μL onto BAP.

**How is each step explicitly done? This is unclear.**Response: Each step has been described in detail.

**8. Figures: Please define the error bars in Figure 3 and 5 (SD, SEM, etc.). Please reference Figure 5 in the manuscript.**Response: These errors have been corrected

**9. Please do no abbreviate journal titles.**  
Response: This has been corrected

**Reviewers' comments:**  
**Reviewer #2:**  
Authors duly revised the manuscript. Accept.  
  
  
**Reviewer #3:**  
Major Concerns:  
**Why do you use antiseptics before creating the burn wounds? Not similar to "normal" burn wounds.  
Three layer clinical dressing? Why this? That´s not adapted to the amount of wound exudate. Why gauze on top and then paper tape?**

**So in sum you have the test-material, film dressing, gauze and paper-tape? Why gauze and paper-tape? Test-material and film dressing is absolutely enough at low exudate level? With the gauze and the paper-tape you reduce the MVTR of the film dressing.**

Response: This model was not established to mimic clinical practice but to provide a robust platform to compare the clinical efficacy of different experimental dressings. Thus, the use of antiseptics before creating the burn wounds provides a consistent environment for all dressings.

Due to the constant movement of the animal (standing and lying down, running around, scratching against enclosure, and rubbing the wall), we needed waterproof film, gauze, and an outer layer of adhesive plaster to fix the dressing, as per our experience. Additionally, the gauze absorbed fluids from the wound, which made it easy for us to observe the healing process.

**Swab on day0? After antiseptic and burn this result is worthless.**  
Response: The swab on day 0 served as a control to ensure that the disinfection process was executed thoroughly.  
  
**Reviewer #4:**  
Manuscript Summary:  
The manuscript describes a method to create burn wounds in a pig model. The authors are evaluating whether a CAPS wound dressing will improve wound healing.  
  
Major Concerns:  
**Line 86 and 333: "Currently, there are no swine models that examine the six burn wound simultaneously."  
This statement is blatantly false. A number of groups work on burn wounds in pigs and can simultaneously monitor wound healing. Drs. Singer, Sen, Herndon/Finnerty, Christy, Shupp, Tredget, Davis/Tomic-Canic, etc…**  
Response: We apologize for the misleading information. The content has been rewritten.

**Burn depth and lack of clinical translation: Burns of >100C for 30 seconds will be full thickness wounds (and acknowledged by the author on line 266). Clinical practice would be to excise the necrotic tissue and apply a graft (if donor sites are available) or an allograft/skin substitute. The proposed model does not mimic clinical practice and therefore makes it less desirable.  
Issue is still not addressed**

Response: Although the swine model of severe burn injury proposed in this study is not identical to clinical practice, it is an easy-to-learn, cost-effective, and robust method to assess the effect of clinical dressings at several time points. Besides, there is still a slight difference in burn conditions between humans and the swine model. This model was not designed to mimic clinical practice but to establish a reliable platform to facilitate the development of novel treatments for burn injuries.

**Image quality: Figure 1 and 4 are too low quality to see details. The authors are attempting to establish this model in their laboratory. It would be helpful to see the burn depth generated by this method. I agree this is a full thickness burn without muscle damage but the histology provided is not sufficient.  
5.4mm of granulation tissue within the wound bed is significant. The dermal thickness for ~50 kg Yorkshire pig is only 2-3mm. This is an artificial outcome generated by not performing the standard of care of debriding the burns and treating with a graft/skin substitute.**  
Response: The thickness of normal skin next to the black triangle on Figure 4A is 3.6 mm. When the wound starts to fill with granulation tissue, the new skin begins to form over the tissue. This structure is not scar tissue and will keep remodeling, resulting in a smooth area. The skin thickness of swine varies with foster and individual differences, we try to show the difference between normal tissues and burned wound in the figure at the same time. Regards to provide macroscopic view of large area and continuous skin which may be sacrificed the resolution of the graph under our limitation of tools.

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**Comparison between treatments: The authors are comparing CAPS vs. "CMC" (Aquacel); however, Figures 2-4 do not show any of the results from the Aquacel group. In the corresponding text of the results section and the figure legends, again only CAPS data is provided.  
Figure 5 (bacterial activity) is the only comparison to the CMC that is reported. Obviously wounds were covered with the CMC and all other data would have been collected. Did the CAPS and CMC heal similarly?**  
Response: In this study, we did not intend to compare the clinical efficacy of CMC and CAPS. Thus, all the comparison between these dressings has been removed.

**Bacterial quantification: Swabs only collect bacteria on the surface of the wound. Non-debrided burn wounds will get infected and the most prevalent bacterial species (e.g> Pseudomonas aeruginosa) can penetrate the eschar which will not be collected with swabs. A most common approach would be to collect biopsies and report as CFUs/g of tissue.  
Issue is still not addressed  
Figure 5 legend doesn't match the figure. No values below the cutoff are shown on the y axis of the figure so can't make any sense of the CFU's at day 7 or 21. The clinical definition of an infection is 1 x 105, which the day 42 values exceeds. The new figure removed the CMC data completely.**  
Response: We agree that collection of biopsies is a better method to evaluate the anti-bacterial activity as it significantly changes the wound condition to eliminate other factors that may further affect the study. Additionally, collecting biopsies at different time points in different conditions would have increased the number of animals in this study, which is impractical. As mentioned above, the comparison between CAPS and CMC is confusing and diverts attention from the purpose of this study. Thus, in the new figure, we have removed the CMC data completely.

**VSS scores: What is the point of performing VSS analysis on days 0, 7, 21? The necrotic eschar wasn't removed which delays the wound healing. Until the wounds are completely re-epithelialized which signifies a transition to the remodeling phase of wound healing, it is pointless to perform any type of scar assessment. Extending the study to 60, 90, or 120 days to allow remodeling to actually occur will provide more insight into scarring.  
Not addressed.**

Response: The scar scale reflects the progress of wound closure. Rapid wound closure implies a short inflammatory phase, suggesting that the dressing facilitated the healing process. This protocol provides a tool to compare the clinical efficacy of clinical dressings in a limited time.

**Also, given how delicate any newly formed epidermis wound be, how was the pliability measured without damaging this newly formed epidermis? No score was given for "normal" skin. The day 0 states it is post-burn with the figure only showing significance from 0 to 7 but the discussion states differences from 21 to 42 (line 371). It is not surprising to see the scores increase from 0 to 7 or 21. Nor is it surprising to see scores decrease by day 42 as the wounds heal. In line 334 you state "This model may also benefit from ensuring that each swine serves as its own control with one wound receiving treatment and the other vehicle control, thereby reducing animal numbers."  
And then on line 372 "A lower score indicates the injured area attempts to restore to a condition that closely approximate normal skin color pigmentation, vascularity, pliability and  
height."  
But then don't show VSS scores for this comparison or even to normal skin.**

Response: In this study, we provide a comprehensive protocol to evaluate experimental dressings on a swine model of severe burn injury. CAPS-containing dressing was only used as an example. We did not intend to compare the efficacy of any clinical dressings in this study. The results of wound closure, VSS score, and antibacterial activity collected from this model can be analyzed to compare the clinical efficacy of experimental dressings within 42 days.

**Minor Concerns:**  
**Timeline Issues are not resolved: "The dressings were changed every 2 days for 10 days and then twice a week for 6 weeks." The entire experiment was only 42 days.  
Change to state "….then twice a week for the 6 week study."  
Reconcile the dressing changes with VSS and bacterial swabs and figure legends:  
Line 194 and 200: "every 2 days for the first 10 days and then twice a week for 6 weeks."  
But on line 208 and 214: "on post-burn days 0 and 3 and week 1, 2, 3, 4, 5  
215 and 6"  
Then line "298 Figure 2. Change of wound size in a swine model. (A) The burns were photographed immediately after the burn injury and every three days afterwards,"  
What was the actual time line?  
The grammar has significantly improved as far as grammar/copy editing. Some errors still persist.  
Lines 86, 369 - incorrect references - I would suggest checking all of them for accuracy.**  
Response: All these errors have been corrected.

**Wound closure/Contraction: Figure 2 shows wound contraction and wound closure  
Are the authors taking into account the growth of the animals over the 42 day study? We have seen the animals increase in body weight significantly during these longer studies. We actually tattoo around the wounds to make it easier to monitor the contraction over time and also tattoo a normal non-injured area of the same size to account for any increase in body weight/surface area. Generally speaking, for a 42day study, we may see an increase in surface area of 10-20% which needs to be account for the calculations.**

Response: Thank you for pointing this out. We did not consider the growth of the animals in this study. However, six wounds were created on one animal, which allow several experimental dressings to be evaluated simultaneously to further reduce the impact of animal growth on the evaluation of clinical efficacy.